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*File pl.*

EXPANDED PROGRAMME ON IMMUNIZATION

LIST OF ARTICLES IN THE WEEKLY EPIDEMIOLOGICAL RECORD, 1977-1986

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- of Tetanus	-	36	-	-	11	27,50	8,10,42	32,41	29,46,49	14,16,45	15
- of Measles	47	33	10,45	8,12,45	-	26,51/52	-	-	11,13,14,21	12,22,25,44,46	18
- of Poliomyelitis	33	21	12,23,26	8,52	17,38,48,50	1,2,48	35,36,44	6,14,24,46	10	-	22
- of Tuberculosis	-	-	-	-	-	-	-	-	-	-	-
- General	-	20	-	-	-	-	-	-	41	-	2
<b>VACCINES:</b>											
- Diphtheria	-	-	-	-	-	-	-	38	-	-	1
- Tetanus	-	-	-	7	24,27	18,25	13	7	-	-	7
- Pertussis	-	-	-	-	-	-	-	4,22	39	10	4
- Measles	-	-	44	-	7,30,42	12	18	17	-	-	7
- Polio	43	-	42	5	-	45	32,45	48	-	-	7
- BCG	-	-	1	-	-	-	-	-	-	28	2
- General (including Vaccine stability)	13,13	-	46,50	33,50,51	23	-	-	19,39	18,37	-	12
- Contraindications	-	-	-	-	-	-	5,9,22,40	3,26,44	31	17,35	10
<b>Total, by Year</b>	<b>14</b>	<b>13</b>	<b>17</b>	<b>28</b>	<b>37</b>	<b>35</b>	<b>32</b>	<b>25</b>	<b>26</b>	<b>34</b>	<b>261</b>



EPI

Expanded Programme on Immunization

VEHICLE REQUIREMENTS FOR THE EPI

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## INTRODUCTION

Vehicles are essential in the Expanded Programme on Immunization, both for the distribution of vaccines and supplies and for the transport of personnel. In view of the long delay in the delivery of new vehicles, the earliest possible advance notice of requirements should be given to the supplying organization.

The following notes are intended to be used as a guide when drawing up vehicle requirements for the EPI:

### 1. POINTS TO CONSIDER BEFORE SELECTING A VEHICLE

#### 1.1 What is the vehicle to be used for?

Consider the main purpose for which the vehicle is to be used: will it be used principally for transporting vaccines and supplies, or for people (medical teams, health workers etc.) or for a combination of both?

On the basis of this, determine the following requirements:

- carrying capacity in weight (kg) or volume (m<sup>3</sup>);
- the seating capacity.

#### 1.2 Where will the vehicle be used?

Examine the areas in which the vehicle must operate and determine:

- According to terrain/road conditions, if a normal 2-wheel drive or 4-wheel drive vehicle is necessary and if standard or special tyres (such as heavy duty, off-road and sand type) should be specified.
- According to availability of fuel, if engine should be gasoline or diesel operated.

#### 1.3 Who will maintain the vehicle?

Establish who will look after the vehicle: who will repair it and keep it running?

- Find out from the responsible authority (generally the ministry of health) if there is a standardization policy to be followed for a particular make/model of vehicle. If so, national workshops would be better able to service this make or model, and spare parts will probably be more readily available.
- In the absence of such a policy, suggest manufacturers/models which have local servicing facilities and for which spare parts are carried.

#### 1.4 Running Costs

The running costs of any vehicle can exceed its initial cost after 12 to 18 months of operation. The running costs of a vehicle should be calculated before the type and model of vehicle are decided. These running costs must include spare parts, fuel and oil costs. Also, during the life of a vehicle, the spare part costs alone can exceed the purchase cost. Consideration should be given to importing sufficient spare parts for a long period - perhaps several years - so that the ministry of health does not receive a vehicle that it cannot afford to run.

#### 2. CHOICE OF VEHICLE

Decide upon the type of vehicle. At least two thirds of all trips for the EPI are made on foot, by public transport, by bicycle or on motor cycle. Bicycles and motorcycles are therefore most important vehicles for a successful EPI. The main vehicle types fall into the following four categories:

##### 2.1 Bicycles

When selecting bicycles consider if they should be men's or women's type and whether they can be purchased locally. Local purchase will greatly reduce the spare parts supply problem. If the bicycles are to be imported, ensure that they are strong enough for use on un-surfaced roads and that the frequently needed spare parts (tyres and tubes, brake blocks, puncture repair kits, pumps and brake cables) are available locally. Before ordering imported bicycles check to see what tyre sizes are available locally and include this information with the specification. Luggage racks should always be fitted and a padlock and chain.

##### 2.2 Motor cycles and trail bikes

This form of transport is most suitable for supervisory visits to health stations, delivery of light goods, outreach immunization trips, etc. Motor cycles can, however, be very dangerous and great emphasis should be given to training the riders properly.

Motor cycles typically divide into two types:

- Those that will be used on surfaced roads - these can be 80-100 CC capacity fitted with road tyres.
- Those that will be used off-road - they should be the "trail bike" type design, with a capacity of at least 150 CC, off-road tyres and a high ground clearance.

Consider if the motor cycles should have one or two seats. In some countries, a second seat will double the cost of accident insurance. All bikes should be fitted with luggage racks. (This is usually an "extra" and must be specified when ordering).



The manufacturer of the motor cycles should be determined by the type of bikes already available locally. Before selecting a manufacturer, carefully investigate the availability of frequently used spare parts, such as tyres and tubes, sparking plugs, contact breakers, cables for the clutch, carburetor and brakes, drive chain and light bulbs.

Crash helmets must also be supplied and, again, some locking system for the machine, or a padlock and chain will be required.

### 2.3 Standard multi-purpose vehicles

Light utility vehicles with 2- or 4-wheel drive, such as station wagons, hard-tops and pick-ups, are available from several of the principal vehicle makers, e.g. Toyota, Land Rover, Nissan, Suzuki, Peugeot, etc. In standard form, station wagons and hard-tops can transport cold boxes, equipment and personnel. Pick-ups may be fitted with either a single or double cabin, depending on passenger carrying requirements, and may have the separate rear compartment fitted with a canvas hood to protect cold boxes and supplies from sun and rain. For prices and additional information see SUPDIR 93 (1).

### 2.4 Refrigerated vehicles

Refrigerated vehicles for the bulk transport of vaccines are available, but are usually justified only for very large programmes. If the country has fewer than 75 million people, it is probably more secure to send vaccine by cold boxes carried in a normal vehicle. Even some countries with populations of more than 75 million have found that cold boxes offer a simpler and more trouble-free system, and avoid many of the operational difficulties which are encountered with the use of refrigerated vehicles.

Refrigerated vehicles have a large carrying capacity and, consequently, the EPI becomes dependent on these vehicles for its vaccine supply. In the event of a breakdown or vehicle accident there must be an alternative method for supplying the vaccine.

A refrigerated vehicle usually has a truck driving cabin and chassis, fitted with a separate insulated box-type body; it may also have its own cooling unit. Typical vehicles of varying capacity are included in the EPI Product Information Sheets (2). The make of vehicle should be determined according to any standardization policy or local servicing capability. The ambient temperature of the region of use and the performance temperature at which the interior is to be maintained must be specified to ensure that an appropriate cooling unit is supplied.

Some cooling units have the ability to operate from mains electricity supply when the vehicle is stationary for long periods. In such cases, the mains voltage, number of cycles and the phase pole connections must be specified. There are three options for cooling units for refrigerated vehicles:



(a) A cooling unit fitted to the engine of the vehicle: this type has the disadvantage that there is no cooling for the vaccine when the vehicle engine is not running. In addition, the cooling unit can take considerable power from the vehicle engine, making the truck difficult to drive over rough or mountainous terrain.

(b) A separate cooling unit fitted to the truck body with its own separate motor, either gasoline or diesel: this type of vehicle permits a greater quantity of vaccines to be transported. Care should be taken with this second option to ensure that the fuel for the cooling unit is the same as that for the truck engine. Ensure also that the quality of the local fuel is of a sufficiently high standard for the type of motor being imported. Specialist engineers are needed to service these vehicles. Ensure that there are maintenance facilities for both the vehicle and for the cooling unit used. Indicative prices are shown in the EPI Product Information Sheets (2) but vary greatly and are subject to special quotation.

(c) A refrigerator mounted in the back of a standard vehicle: this option has little or no advantage over a normal cold box placed in the same vehicle. Unless the vehicle is fitted with a split charge facility and two batteries the refrigerator will run the battery flat in about eight hours. Furthermore, a vehicle with a refrigerator mounted inside becomes a special EPI vehicle which then cannot be used for other primary health care activities.

### 3. DELIVERY TIMES AND SHIPMENT

In view of the long delay in delivery of new vehicles, the earliest possible advance notice of requirements should be given to the supplier. For standard vehicles the factory production time is 2-3 months, with an expected arrival date (EAD) at the port of arrival of a minimum of 4 months after the manufacturer receives the order. For refrigerated vehicles an EAD of at least 6 months is necessary since these are highly specialised, individually manufactured products. Firm delivery times should be requested from the supplier when obtaining the initial quotation.

For all types of vehicle, an extra month should be added to the above EADs if special equipment or bidding procedures are needed.

● As vehicles take up considerable space in shipment, difficulty may be experienced in obtaining shipping space for more than 20-30 vehicles on one vessel. Therefore split shipments (with ensuing delays) may be necessary, and this factor should be taken into consideration whenever large quantities of vehicles are required.

● Factory delivered vehicles include all mandatory requirements for the country of use. Laminated windscreens, seat belts, fire extinguishers, and special programme fittings should be requested before the vehicle is delivered.



● Although deliveries direct from suppliers may take less time than deliveries from the factory, they should only be considered as a last resort for the following reasons:

- Vehicles supplied by suppliers are generally built to an inferior specification, and may not be sufficiently reinforced for heavy duty use. This may give rise to problems in operation.

- Engine and running gear may not be fully compatible with those normally imported into the country concerned. The manufacturer's warranty will generally not apply.

- Prices from suppliers are 20-25% higher than the prices for direct factory purchase.

- only limited quantities of standard vehicles are available from suppliers.

- the time taken in bidding and issuing orders to several stockists, often in different countries, and then coordinating such shipments adds to the logistics problem.

#### 4. SPARE PARTS

Spare parts should be ordered to cover vehicles on a fleet basis, rather than as one set per vehicle. This is important whenever maintenance is to be done centrally, or at the regional or district level. Since the cost will be spread over many vehicles, larger items, such as engines and gear boxes, can thus be included in the spare parts list. Batteries and tyres, if not available locally, should also be included.

It should be noted that spare parts cannot be shipped with the vehicles and will arrive usually at least one month after the vehicles themselves.

#### 5. VEHICLE SHARING

It is usually unreasonable and undesirable to have vehicles that can only be used for EPI activities. When vehicles are shared between programmes it is important to specify which programmes have access and for what activities. Some programmes write a job description on the door of the vehicle.

#### 6. TRAINING

##### 6.1 For drivers

The safety of drivers and passengers, as well as the life of the vehicle, are effected enormously by the way that the vehicle is used. Driver training modules are available from the International Labour Organization (3) and the ministry of health should consider implementing some form of certification for drivers. This certificate should include not only driving ability but also the ability to perform essential maintenance tasks, such as checking tyre pressures, level of oil, fuel and water.

Many programmes also train drivers in the principles of vaccine handling and care, to ensure that each driver have an awareness of his own important place in the EPI team.

#### 6.2 For staff at maintenance workshop

Whether the vehicles are to be maintained by private workshops or by ministry of health workshops, the mechanics must be adequately trained. Training modules are available from the International Labour Organization for most repair work on four wheel vehicles. (3)

#### 7. MAINTENANCE WORKSHOP

Many vehicle maintenance workshops are unable to operate effectively due to the lack of an adequate operating budget. This issue can probably only be addressed at rather high levels in the ministry of health but it is fundamental for the long term success of any transport policy. The budget must cover initial as well as recurrent costs.

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#### REFERENCE LIST

1. SUPDIR 93. Available from UNICEF offices.
2. EPI Product Information Sheets. Available from UNICEF offices. Document reference WHO/UNICEF/EPI.TS/86.1.
3. Modules of Employable Skills (MES), ILO Publications, International Labour Office, CH 1211 Geneva 2, Switzerland.

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THIRTY-NINTH WORLD HEALTH ASSEMBLY

Provisional agenda item 21

**INFANT AND YOUNG CHILD NUTRITION (PROGRESS AND EVALUATION REPORT;  
 AND STATUS OF IMPLEMENTATION OF THE INTERNATIONAL CODE  
 OF MARKETING OF BREAST-MILK SUBSTITUTES)**

Guidelines concerning the main health and socioeconomic circumstances  
 in which infants have to be fed on breast-milk substitutes

This document presents guidelines, which WHO has prepared in consultation with UNICEF, concerning the main health and socioeconomic circumstances in which infants have to be fed on breast-milk substitutes. This is in accordance with a request made during the Thirty-eighth World Health Assembly, and takes account, *inter alia*, of the conclusions and recommendations of a joint WHO/UNICEF consultation on the subject. The guidelines are being submitted to the Thirty-ninth World Health Assembly for information; Member States may wish to use them in determining for themselves on the basis of their particular health and socioeconomic circumstances, how to protect infants and mothers against inappropriate feeding practices, which infants have to be fed on breast-milk substitutes, and how best to ensure that these infants receive an appropriate substitute for as long as they need it.

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## INTRODUCTION

1. At the Thirty-eighth World Health Assembly, in May 1985, the delegates of a number of Member States addressed themselves to the International Code of Marketing of Breast-milk Substitutes and, specifically, to the phrase "infants who have to be fed on breast-milk substitutes" that appears in its Article 6, paragraph 6.<sup>1</sup> They requested that the Director-General provide clarification in this regard, *inter alia* by convening a working group to discuss the meaning of this phrase.
2. The Health Assembly was informed that the Director-General had earlier decided to convene a technical consultation, jointly with the United Nations Children's Fund (UNICEF), to advise him on the health and socioeconomic circumstances in which infants have to be fed on breast-milk substitutes, and the implications of these circumstances for health care systems and other infant and social welfare institutions and organizations.
3. Participants in the consultation, which was held in Geneva on 17-18 December 1985, included experts in paediatrics, nutrition, obstetrics and gynaecology, public health, and social welfare. As part of their report,<sup>2</sup> participants summarized in tabular form the main points covered and conclusions reached concerning the health and socioeconomic circumstances influencing whether or not infants have to be fed on breast-milk substitutes, and their implications for health and social programmes. For easy reference this summary is reproduced at the end of the present document.
4. The guidelines that follow have been prepared by WHO, in consultation with UNICEF, in the context of Article 6, paragraph 6, of the International Code of Marketing of Breast-milk Substitutes. They examine the main health and socioeconomic circumstances in which infants have to be fed on breast-milk substitutes, and have been prepared in the light, *inter alia*, of the conclusions and recommendations of the joint WHO/UNICEF consultation on the subject.
5. The guidelines are divided into three parts: the first establishes a number of general principles regarding the importance of appropriate nutrient intake in early infancy, and steps to be taken to protect and promote appropriate infant feeding practices; the second discusses the main health and socioeconomic circumstances influencing whether or not infants have to be fed on breast-milk substitutes; and the third considers the implications of these circumstances for health and related social welfare institutions and organizations that are responsible for infant care.
6. The text of the guidelines includes such phrases as "the competent authorities may wish to take steps ..." or "... may wish to consider ...". This does not imply that countries are not already taking action in accordance with the guidelines; rather, it suggests the need both for new initiatives and for the continuation of existing ones. The term "should" is also employed frequently, in respect of recommendations concerning appropriate infant feeding practices that are based on the best scientific evidence; it does not imply the imposition of action on any country.
7. The competent authorities<sup>3</sup> in Member States may wish to use these guidelines in determining for themselves, on the basis of their particular health and socioeconomic circumstances, how to protect infants and mothers against inappropriate feeding practices, which infants have to be fed on breast-milk substitutes, and how best to ensure that these infants receive an appropriate substitute for as long as they need it.

<sup>1</sup> Article 6, paragraph 6, of the International Code states that "donations or low-price sales to institutions or organizations of infant formula and other products" within its scope "... may be made". It further states, however, that "such supplies should only be used or distributed for infants who have to be fed on breast-milk substitutes" (emphasis added). See document WHA38/1985/REC/3, pp. 66-82, for a summary of the relevant discussion.

<sup>2</sup> Report of a Joint WHO/UNICEF consultation concerning "infants who have to be fed on breast-milk substitutes", document WHO/MCH/NUT/86.1 (English only).

<sup>3</sup> For the purposes of the guidelines, the term "competent authorities" means governments of Member States, or the persons, institutions or organizations that governments, in accordance with national practice, have designated as being responsible for the health, nutrition and related social welfare needs of infants.



#### THE IMPORTANCE OF APPROPRIATE NUTRIENT INTAKE IN EARLY INFANCY

8. Appropriate nutrient intake is more critical in early infancy than at any other time of life. This is so because of the infant's high nutritional requirements in relation to body weight and the influence that proper or faulty diet during the first months can have on future health and development. Moreover, the infant is more sensitive, and less adaptable, than in later life to different types, forms, proportions and quantities of food.

9. Breast-feeding is an unequalled way of providing complete food for the healthy growth and development of infants, and forms a unique biological and emotional basis for the health of both mother and child. In addition, the anti-infective properties of breast milk help to protect infants against diseases, and there is an important relationship between breast-feeding and child-spacing. The protection and encouragement of breast-feeding are, therefore, an important part of the health, nutrition and other social measures required to promote healthy growth and development of infants and young children, and the health and well-being of their mothers.

10. There are, however, a number of situations - fortunately relatively infrequent - where infants cannot, or should not, be breast-fed. The choice as to the best alternative to breast-feeding depends on the nature of the circumstances, and for this reason it is useful to distinguish between:

- (a) infants who cannot be fed at the breast, for example those with sucking difficulties, but for whom breast milk remains the food of choice;
- (b) infants who should not receive breast milk, or any other milk, including the usual breast-milk substitutes, for example those with rare metabolic disorders; and
- (c) infants for whom breast milk is not available, for whatever reason.

11. For the first group of infants, expressed breast milk provided by their own mothers would be best, followed by breast milk from a wet-nurse or a breast-milk bank. For the second, a tiny minority, special preparations are required to replace breast milk or the usual milk-based breast-milk substitutes. Finally, the appropriate use of commercially-produced infant formula represents for the third group of infants an important nutritional advance. Generally speaking, these products are a considerable improvement, particularly for the very young infant, over some traditional, nutritionally less adequate substitutes, including earlier infant formula.

12. A safe and adequate diet for infants depends, first and foremost, on the protection and promotion of breast-feeding; the proper use of breast-milk substitutes, when they are necessary; and the promotion and support of appropriate complementary feeding (weaning) practices, usually when infants reach four to six months of age, with the use of local food resources.

13. Those persons responsible for the organization and provision of health and social services may wish to take a number of steps in order to ensure appropriate infant feeding practices within families, health care systems, and other child and social welfare institutions and organizations. In so doing they will act on behalf of infants both inside and outside the institutional context, and will take measures to protect and promote breast-feeding such as:

- (a) providing objective and consistent information, education and training to mothers, families and others concerned with infant and young child nutrition;
- (b) developing social support measures, for example enacting effective maternity protection legislation and establishing day-care facilities at or near work sites so as to facilitate breast-feeding through frequent mother/infant contact; and



(c) organizing health care facilities, in particular maternity and paediatric wards and hospitals, and developing health care routines in ways that facilitate mother/infant contact.

14. Because all pregnant women, and mothers of infants and young children, whether breast-feeding or not, require support, the competent authorities may wish to consider how best to ensure safe and adequate nutrient intake for infants who are not breast-fed, for whatever reason. At the same time, however, the unnecessary or improper use of breast-milk substitutes constitutes a health hazard for infants. Thus, when deciding on measures to ensure the availability of breast-milk substitutes in circumstances in which infants have to be fed on them, the competent authorities will also wish to ensure that breast-milk substitutes are made accessible and used in ways that do not interfere with the protection and promotion of breast-feeding.

#### MAIN HEALTH AND SOCIOECONOMIC CIRCUMSTANCES INFLUENCING WHETHER OR NOT INFANTS HAVE TO BE FED ON BREAST-MILK SUBSTITUTES

15. In general, circumstances in which infants are not breast-fed are of two types - physiopathological and socioeconomic. They may be temporary or permanent, and related to the mother, the infant or both. Not all of these circumstances call for the use of a breast-milk substitute. In cases where a mother cannot breast-feed her infant, particularly when the circumstances are of a temporary or intermittent nature, breast milk may and should still be provided - whether expressed by the mother, given by a wet-nurse, or obtained from a breast-milk bank.

#### Infant and maternal health

16. A review of the various circumstances in which infants cannot, or should not, be breast-fed, including a consideration of the best possible alternative in each case, will facilitate the identification of infants who have to be fed on breast-milk substitutes for physiopathological reasons.<sup>1</sup> It will also be useful in this connection to refer to a number of situations that are frequently thought to be contraindications to breast-feeding, but in fact are not.

#### Conditions in which infants cannot be fed at the breast

17. Some infants are unable to suck, for example those suffering from severe cardiac, respiratory or nervous-system disorders, or those with very low birth weight (below 1500 g), most of whom are also born pre-term. Infants born with severe cleft lip and palate also have sucking difficulties. Gavage or other appropriate methods may be required to feed such infants, but the food of choice for them remains breast milk because of its nutritional and immunological advantages, which are all the more important in the case of infants who are ill. In addition, every effort should be made to help mothers maintain lactation so that they are able to breast-feed normally once the health of their infants has improved or the physical defect has been corrected.

#### Conditions in which breast milk may be unsuitable

18. Only under exceptional circumstances can a mother's milk per se be considered unsuitable for her infant. This is the case, for example, with a few hereditary metabolic disorders, which severely limit or render impossible the infant's use of certain milk components. Three conditions of particular interest in this connection are galactosaemia, phenylketonuria and maple syrup urine disease. If fed breast milk, or any milk-based preparation, affected infants will develop blindness, mental retardation or liver failure and eventually die. Highly specialized preparations are needed to feed infants with these conditions, which are fortunately very rare.

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<sup>1</sup> For a more detailed discussion of this theme, see: Behar, M. Factors influencing breast-feeding in relation to infant and maternal health (unpublished WHO document WHO/MCH/NUT/85.1 Rev.1); available in English and French.



19. Breast-feeding is often thought to represent a risk to the infant whose mother has an infectious disease; in fact, this is rarely the case. For example, where such viral diseases as cytomegalovirus, herpes simplex and hepatitis B are concerned, the infection will in any event have been transmitted to the infant either before or during birth, and there is no reason, therefore, not to breast-feed.

20. Active tuberculosis in the mother presents a special problem. If the mother has not been treated during pregnancy, she should begin chemotherapy as soon as diagnosis is made. The infant should be given chemoprophylaxis for as long as the mother remains infectious, but in any case for a minimum of six months, and then vaccinated with BCG. A brief separation of mother and infant, at the onset of chemotherapy, is advisable if possible. Meanwhile, if the mother's condition permits, expressed breast milk should be given to the infant, since infection spreads via direct contact with the mother and not through her milk. Breast-feeding is all the more important, since situations where tuberculosis in a mother is diagnosed only after delivery are most likely to occur among populations where environmental conditions are generally very poor and health risks to the infant are greatest.

21. Acquired immunodeficiency syndrome (AIDS) in mothers has not been sufficiently studied or documented to determine the extent of the risk of transmission of the LAV/HTLV-III virus from mother to infant through breast-feeding. The competent authorities should carefully monitor developments in this regard, assess the implications of new knowledge inter alia for breast-feeding, and advise health and related personnel, as well as the general public, promptly and accurately on the appropriate action to be taken.

22. Drugs and foreign chemical compounds in breast milk resulting from medication or environmental pollution require special attention. As a general rule, drug therapy should be avoided in lactating mothers wherever possible. When the use of drugs is indicated, preference should be given to those least likely to have negative repercussions on the infant. Where there is a strong indication for using a drug that is known, or thought to be, harmful to the infant, breast-feeding should be temporarily interrupted. Meanwhile, every effort should be made to feed the infant on breast milk provided by a wet-nurse or obtained from a breast-milk bank. At the same time lactation should be maintained, and the mother should resume breast-feeding as soon as possible after drug use has been discontinued.

23. A number of undesirable elements which may be found in breast milk as a result of environmental contamination - for example, dichlorodiphenol trichloroethane (DDT), polychlorinated biphenyls (PCBs) and radioisotopes - represent a potential hazard for the infant. Whereas the concentration of DDT in human milk has significantly decreased in recent years, the concentration of such contaminants as PCBs appears to be increasing. There is no scientific evidence of any undesirable consequences for infants from the ingestion of these pollutants via breast milk; however, not enough experience has been gained to exclude the possibility of long-term effects, particularly as a result of prolonged breast-feeding. Overall, the advantages of breast-feeding are still considered to outweigh the potential risks, particularly during the first months of life and in situations where the very use of breast-milk substitutes presents a number of risks.

24. Certain rare conditions, such as a type of jaundice associated with breast-feeding and a tendency to bleed observed in a very few newborns, particularly if they are also pre-term, do not justify interruption of breast-feeding. Simple, effective measures are available to deal with these conditions.

25. A large proportion of low-birth-weight infants (below 2500 g), particularly in developing countries, are born at term and behave as fully mature infants. Even though they are small as a result of their mothers' chronic malnutrition and small size, they can and should be breast-fed and do not present any particular problems in this regard. However, some infants with very low birth weight (below 1500 g), do present special feeding problems, both because of a very weak or non-existent sucking capability and their proportionately higher requirements for energy, protein, calcium, sodium and iron.



26. Over the years special preparations have been developed for feeding pre-term low-birth-weight infants because it had been assumed that the concentration of nutrients in human milk was lower than that required by such infants, while modified cow's milk or standard infant formula had been found to be inappropriate in terms of digestibility and the biological availability of casein, fats and iron. More recently, however, it has been found that the milk of mothers of both small-for-date and pre-term low-birth-weight infants is adapted to the infants' special needs and should be considered the food of choice even if their sucking ability is impaired.

27. There are a number of cultural taboos against a mother's breast-feeding when she is pregnant, based on assumptions regarding changes in the volume and composition of breast milk. These are generally unfounded, however. A mother's health is the first consideration in any decision about whether or not she should breast-feed in the event of a new pregnancy.

28. There is no reason to stop breast-feeding, even temporarily, an infant who has diarrhoea. On the contrary, it is particularly beneficial to continue.

#### Conditions relating to the mother that may interfere with breast-feeding

29. Breast-feeding is not recommended for women who are critically ill with, for example, severe heart, kidney, liver or lung conditions, or who are suffering from starvation. Nor would breast-feeding be advisable in the rare case of psychosis or severe postnatal depression where an infant's life may be in danger as a result. Under such circumstances, an alternate safe and adequate diet for the infant must be provided.

30. The vast majority of mothers living in socially and economically deprived circumstances, and who are considered to be suffering from chronic mild to moderate subclinical malnutrition, are quite able to breast-feed their infants successfully for long periods. Maternal malnutrition is not, therefore, by itself a contraindication to breast-feeding. In fact, under such circumstances the probability is that infants would be at greater risk if fed on a breast-milk substitute than if breast-fed by their malnourished mothers. Also, supplementary feeding of such infants is not a realistic alternative, the specialized foods needed for safe replacement of breast milk being beyond the reach of most of the women concerned. Improving a mother's diet is therefore an important step in protecting both her health and her children's health and nutritional status.

31. Frequent, on-demand breast-feeding helps to delay the return of ovulation; thus pregnancy usually does not occur before other foods have been introduced and the frequency and intensity of breast-feeding diminished. When it does occur, it is advisable to accelerate the weaning process; the mother's health and nutritional status should be monitored closely.

32. Since the timing of the return of ovulation in lactating women is not predictable, the use of appropriate family planning is highly recommended - for example, natural methods, barrier methods, or intrauterine devices. If hormonal methods are used, preference should be given to preparations containing only progestogen, since those containing oestrogen cause a significant drop in milk production. These should be started no earlier than six weeks postpartum.

33. Inadequate milk production is frequently given by mothers as a reason for not breast-feeding; and yet failure to secrete milk following delivery, or even to produce a sufficient amount of milk, for purely physiological reasons, is extremely rare in those societies where breast-feeding is highly valued. In societies where the phenomenon is frequently reported, it appears to be for the most part a direct result of psychosocial and economic circumstances, and appropriate measures to protect and promote breast-feeding should help to correct the situation (see paragraphs 40-44).

34. Where multiple births are concerned, the breast-feeding of twins should present no particular problem for a healthy, well-nourished mother. Although supplementary feeding of malnourished mothers and infants may be required, breast-feeding should be maintained.

35. Inverted nipples are a relatively rare physical malformation, and mild cases can be treated during the antenatal period. Simple exercises performed by the mother during the last trimester of pregnancy can help to prepare her nipples for successful breast-feeding. Surgery may be required for more serious cases; for the majority, however, breast-feeding is entirely possible.



36. A temporary separation of mother and infant may occasionally be necessary, for example when either requires hospitalization. Ideally, mothers should be permitted to remain with their fully breast-fed infants under these circumstances. Such an arrangement will not only allow breast-feeding to continue, which is of considerable value in the case of a child who is ill, but will present a number of other advantages, both practical and psychological, for mother and child.

37. When an infant is hospitalized and dual accommodation is not possible, mothers should be encouraged to visit often for the purpose of breast-feeding their infants or provide their expressed breast milk to be fed to them. Both actions will help to maintain lactation, in preparation for continued normal breast-feeding once the infants concerned have been discharged. Breast-milk banks may also be of help in such cases. Failing all of the above solutions, an appropriate breast-milk substitute should be used.

#### Socioeconomic circumstances<sup>1</sup>

38. It is obvious that in cases of permanent separation, for example death of a mother or abandonment of a child, an alternate safe and adequate diet for the infant must be provided. In such situations in traditional societies, wet-nursing, including through relactation, is the usual and recommended solution. When this is not possible, an appropriate breast-milk substitute should be used.

39. During periods of acute social disruption - for example, as a result of war, famine, earthquake and similar man-made or natural calamity - infants are often forcibly separated from their mothers, while some mothers are too weak or otherwise too indisposed to breast-feed. Under such circumstances breast-milk substitutes will be required to ensure a safe and adequate diet for the youngest members of the populations affected. These substitutes will be best provided as part of organized disaster relief, that includes appropriate safeguards to ensure that they are distributed only for infants who have to be fed on breast-milk substitutes and for as long as they have to be fed on them, and are prepared and administered correctly. A return to breast-feeding, if at all possible, should nevertheless remain a priority health objective.

#### Protection of working mothers

40. After giving birth, a woman requires time, physical closeness to her child, and a hospitable environment in order to initiate and maintain breast-feeding. Recognition of the "social function" of maternity is at the heart of the introduction over the years of a variety of policies and legislation on behalf of mothers and their children in a large number of countries, which serve to protect and promote breast-feeding.<sup>2</sup>

41. In addition to the well-known benefits of breast-feeding for both mother and child, recent research on biological and psychological mother-child interaction during both the intrauterine period and early infancy provides new information about how critical these stages are for subsequent child and adult development and well-being. From a health point of view, therefore, the return of a mother to employment outside the home should be postponed, ideally, until weaning is well under way, or, as a minimum, long enough to cover the critical period of early infancy. Day-care facilities located at or near the work place should be provided, together with the appropriate number and duration of paid breast-feeding breaks.

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<sup>1</sup> For a wide-ranging discussion of the various social, biological and economic forces affecting infant feeding, as they relate to the physical and psychosocial changes occurring during the "weaning process" (the period between birth and the child's accession to the normal family diet), see Review of factors determining infant feeding and rearing practices. Geneva, World Health Organization (in press). See also Piwoz, E.G. & Viteri, F.E. "Studying health and nutrition behaviour by examining household decision-making, intra-household resource distribution, and the role of women in these processes" in Food and Nutrition Bulletin, Vol. 7, No. 4, December 1985.

<sup>2</sup> See "Protection of working mothers: an ILO global survey". In: Women at Work, No. 2, 1984. Geneva, International Labour Office. Includes an introduction prepared by WHO concerning the health rationale for maternity support (English and French editions).



Ensuring informed decision-making on matters relating to infant feeding

42. Some infants will not receive breast milk because of a decision taken by their mothers not to breast-feed. What is important in this regard is to ensure that, when a mother decides not to breast-feed, she does so on the basis of objective and consistent information, she is conscious of all of the health risks for her infant and the economic implications for her family, and she is aware of social support measures for breast-feeding mothers that may be available in the community.

43. The competent authorities are therefore responsible for ensuring that all mothers, particularly during pregnancy, are systematically provided with appropriate information and guidance concerning preparation for breast-feeding. They may wish to enlist the full cooperation of women's organizations, in particular breast-feeding women's groups, in this effort, and support them through the health care and social welfare systems. Concerned health workers in turn will wish to provide mothers not only with information about the importance of breast-feeding but also with practical advice on how to prepare for, and initiate and maintain, it.

44. Regardless of the circumstances, however, infants of mothers who do not breast-feed, or who only do so partially, require a safe and adequate alternate source of nutrients. Accordingly, nutritionally appropriate breast-milk substitutes, and suitable ingredients from which to prepare them, should be made accessible to those who need them through commercial and non-commercial distribution systems. Great care should nevertheless be taken to ensure that these products are made available in ways that do not interfere with the protection and promotion of breast-feeding.

IMPLICATIONS FOR HEALTH AND RELATED SOCIAL WELFARE INSTITUTIONS AND ORGANIZATIONS RESPONSIBLE FOR INFANT CARE

45. Those persons working in health and related social welfare institutions and organizations responsible for infant care may wish to take carefully into account the various circumstances discussed above when planning their services and undertaking relevant health- and nutrition-related activities, as a contribution to the provision of safe and adequate nutrition for infants, by the protection and promotion of breast-feeding, and by ensuring the proper use of breast-milk substitutes, when they are necessary.

46. For example, health workers in maternity wards and hospitals may wish to make every effort to protect and promote breast-feeding by facilitating its early initiation and feeding on demand through rooming-in, and by discouraging bottle-feeding. Breast-milk substitutes will be required only in small quantities in those institutions where infants are routinely put to the breast as soon as possible after birth, where they are not given any other food or liquid so as to ensure complete non-interference with their sucking and the maternal let-down reflex and milk secretion, and where health service staff provide sustained support for breast-feeding.

47. Since the large majority of infants born in maternity wards and hospitals are full term, they require no nourishment other than colostrum during their first 24-48 hours of life - the amount of time often spent by a mother and her infant in such an institutional setting. Only small quantities of breast-milk substitutes are ordinarily required to meet the needs of a minority of infants in these facilities, and they should only be available in ways that do not interfere with the protection and promotion of breast-feeding for the majority.

48. When infants who are being breast-fed are admitted for treatment to paediatric wards or hospitals, every effort should be made to continue providing them with breast milk. The feeding problems raised by hospitalization are generally transitory in nature; it would therefore be both unnecessary and particularly inappropriate on a number of grounds to cease breast-feeding at the very moment when the risk to an infant's health has been increased through illness. Mothers should be encouraged to continue breast-feeding their hospitalized infants and should be provided facilities for this purpose. Where this is not possible, they should be encouraged to maintain lactation, in preparation for resuming normal breast-feeding once the infants concerned have been discharged.



49. Special attention should be given to infants who may be ill as a result of inappropriate feeding or feeding practices. In particular, efforts should be made to prevent the recurrence of any such illnesses by encouraging and supporting the initiation of breast-feeding or, where appropriate in the case of young infants, relactation; or, failing this, by providing instructions for the appropriate preparation and use of breast-milk substitutes.

50. There will, of course, always be a small number of infants in these services who will need to be fed on breast-milk substitutes. Suitable substitutes, procured and distributed as part of the regular inventory of foods and medicines of any such health care facility, should be provided for these infants.

51. Health and welfare programmes, in contrast to paediatric wards and hospitals, include the care of both healthy and unwell children on an ambulatory basis through, for example, maternal and child health services; day-care centres that are responsible for the infants of working or otherwise temporarily absent mothers; and supplementary feeding schemes on behalf of mothers and children. A main objective of these and similar programmes where infant feeding is concerned should be to protect and promote breast-feeding in every possible way.

52. Finally, those persons in charge of orphanages and disaster relief operations need to make appropriate provision for sufficient quantities of safe and adequate breast-milk substitutes to meet the nutritional requirements of those infants in their charge who have to be fed on them. The institutional setting, or careful follow-up by responsible officers in the case of outside distribution, should provide the means for ensuring that all those infants who need to be fed on breast-milk substitutes are systematically identified and receive them for as long as necessary.

53. Infants who are not breast-fed, for whatever reason, should receive special attention from the health and social welfare systems, since they constitute a risk group. Their mothers, or other family members, as appropriate, should receive adequate instructions for appropriate preparation of breast-milk substitutes, and a warning against the health hazards of inappropriate preparation.

54. In particular, the competent authorities may wish to identify, for example through epidemiological studies or other suitable means, that minority of infants who have to be fed on breast-milk substitutes, but whose mothers or families, for economic reasons, are unable to procure it in adequate amounts. They may wish to ensure that a suitable breast-milk substitute is provided for as long as the infants concerned need it.

55. Meanwhile, the competent authorities will also wish to strengthen health and nutrition education activities on behalf of these mothers, and other family members, as appropriate, in order to foster preparation for, and initiation and maintenance of, breast-feeding on behalf of any future infants born to them. Education relative to appropriate infant nutrition should begin in early childhood for boys and girls in families and continue through schools before and during adolescence, in preparation for parenthood.

56. Health workers should receive training on how to motivate and help mothers prepare for and maintain breast-feeding. This training should include the identification of those relatively rare cases of infants who have to be fed on breast-milk substitutes for physiopathological reasons. Mothers, too, should be taught to deal with the feeding of their infants under such circumstances and be supported for this purpose by health workers and other elements of the health and social welfare systems.

#### CONCLUSION

57. In conclusion, the vast majority of mothers can and should breast-feed, just as the vast majority of infants can and should be breast-fed. Only under exceptional circumstances can a mother's milk be considered unsuitable for her infant. For those few health situations where infants cannot, or should not, be breast-fed, the best alternative - whether expressed breast milk from the infant's own mother, breast milk from a wet-nurse or a breast-milk bank, or a breast-milk substitute - depends on the particular circumstances.



58. For implementing health and social measures to protect breast-feeding, the competent authorities have at their disposal a variety of means of ensuring that the most appropriate choice in regard to infant feeding is made within families, and in health care systems and other infant and social welfare institutions and organizations. They will wish to protect the health and nutritional status of the mother, for her own sake and as a first step in protecting the health and nutritional status of her children. This implies ensuring that mothers are adequately informed on matters relating to infant feeding, that they receive appropriate family and community support to facilitate and encourage breast-feeding, and that they are protected from factors that inhibit it. Adequate maternity leave, convenient day-care facilities and paid breast-feeding breaks, for example, should be available for all working women.

59. The competent authorities in Member States may wish to use the above guidelines in determining for themselves, on the basis of their particular health and socioeconomic circumstances, how to protect infants and mothers against inappropriate feeding practices, which infants have to be fed on breast-milk substitutes, and how best to ensure that these infants receive an appropriate substitute for as long as they need it.

SUMMARY OF THE MAIN HEALTH AND SOCIOECONOMIC CIRCUMSTANCES INFLUENCING  
WHETHER OR NOT INFANTS HAVE TO BE FED ON BREAST-MILK SUBSTITUTES,  
AND THEIR IMPLICATIONS FOR HEALTH AND SOCIAL PROGRAMMES

SITUATION	FREQUENCY	IMPLICATIONS FOR INFANT FEEDING PRACTICES	IMPLICATIONS FOR HEALTH & SOCIAL PROGRAMMES	COMMENTS
RELATED TO INFANT HEALTH				
Metabolic disorders	<1:20 000 LBs	Both BM and BMS usually unsuitable or usable only in restricted amounts	Facilities required for clinical and laboratory screening and monitoring (advanced technology)	Special formula is required
Pre-term delivery: 32-36 weeks	5-8%	BF possible BM best	Prevent LBW. Modify health care practices and provide social support for BF	
<32 weeks (These infants are usually very LBW)	<1%	BM best gavage if necessary maintain lactation by expressing BM	Use alternative methods for feeding BM. Continue involvement of mother in care and feeding	Mother's BM by gavage, banked BM and possible supplementation. Special formula if no alternative, but still may require supplement
Small for gestational age (Also referred to as intrauterine growth retardation)	5-20%	BF possible BM best	Improve maternal nutrition through health and social policies and services	
Cleft palate	<0.1%	BF often possible BM best gavage if necessary	Train mother in feeding. Early surgical repair	BF often easier than bottle-feeding. Lactation should be maintained
Hospitalization of infant	Variable	BF possible BM best	Provide boarding facilities for mother to allow care and BF	
Diarrhoeal disease	Variable but very common	BF possible BM best	Train health workers and provide community and family education	Bottle-feeding often results in diarrhoeal disease

SITUATION	FREQUENCY	IMPLICATIONS FOR INFANT FEEDING PRACTICES	IMPLICATIONS FOR HEALTH & SOCIAL PROGRAMMES	COMMENTS
RELATED TO INFANT HEALTH				
Multiple births	1:80 - 1:100	BF possible BM best, may require supplementation	Social and family support	
BF jaundice	Very rare. No reliable data, but probably <1:5 000 LBs	If bilirubin blood level too high, may require BMS. To confirm diagnosis, observe level when stopping and restarting BF	Clinical and diagnostic skills and facilities for monitoring jaundice and facilities for heliotherapy if necessary	Common causes such as haemolytic disease and infection to be ruled out first
Haemorrhagic disease of the newborn	Rare, mostly in pre-term LBW infants	BF should continue	Provision of 1 mg of vitamin k or analogue desirable prophylactically, especially in pre-term LBW infants*	
RELATED TO MATERNAL HEALTH				
Mastitis		Results in part from inappropriate BF. BF still possible and desirable	Train health workers. Treat, encourage and support mothers	
Tuberculosis (only if active during or after pregnancy)	Variable, common to rare	Expressed BM fed by alternate means (BM is not infectious, but the mother may infect the infant directly)	Early diagnosis and prompt treatment for mother. Provide chemoprophylaxis for at least 6 months for infant, then give BCG vaccination. Expressed BM fed to infant	Only brief separation necessary until therapy started
Viral infections transmitted transplacentally, i.e. before birth (e.g. cytomegalovirus)**	Uncommon	Already infected in utero, not a contra- indication for BF		
Intrapartum or post-partum infection (e.g. sepsis)		(See section on other serious maternal illnesses)		



SITUATION	FREQUENCY	IMPLICATIONS FOR INFANT FEEDING PRACTICES	IMPLICATIONS FOR HEALTH & SOCIAL PROGRAMMES	COMMENTS
RELATED TO MATERNAL HEALTH				
Drug therapy (should be distinguished according to neonatal vs. post neonatal BM exposure)	Variable	Depends on drug - may require only temporary halt of BF; if long-term use required, cessation of BF may be necessary	Need for health workers to know which drugs contraindicated for BF infants and when to halt BF temporarily	Wet-nurses and BM bank
Oral combined hormonal contraceptives	Common	Sharp decrease in BM results in unnecessary and earlier supplements	Provide alternative contraceptives, health education	IUD, progestogen-only contraceptives, and barrier methods are the preferred alternatives
Environmental contaminants concentrated in milk DDT and derivatives PCBs and other organo-chloride compounds heavy metals and isotopes	Widespread but variable	No current evidence of contraindication for BF. DDT declining. PCBs show sharp decrease with duration BF and parity	Environmental monitoring, public education and reassurance and support for BF women	Concentrations of other water-soluble contaminants (e.g. lead) may be higher in BMS
Lactation failure:				
(1) Unable to secrete milk	Very rare	Unable to BF		If no BM bank or wet-nurse, requires BMS
(2) Unable to secrete sufficient BM to provide for adequate growth	Unknown	Still may BF, but may require supplementation and identification and treatment of primary cause	Health workers need to be trained in providing support and encouragement for BF	Depending on age, give supplement of locally available weaning food
(3) Perceived inability to provide adequate BM	Variable. Psychosocial and environmental influences	Still may BF	Knowledge/training of health workers. Encourage and support mothers in BF techniques	Usually occurs after a few months of BF. Depending on age, give supplement of locally available weaning food

SITUATION	FREQUENCY	IMPLICATIONS FOR INFANT FEEDING PRACTICES	IMPLICATIONS FOR HEALTH & SOCIAL PROGRAMMES	COMMENTS
RELATED TO MATERNAL HEALTH				
Serious maternal illness requiring hospitalization or prolonged care:				
(1) organic illness	Variable during the puerperal period, but otherwise uncommon	If only for short period, use of wet-nurse, BM bank or BMS, while mother's milk is expressed in hospital. Otherwise requires BMS	Social and health service support for infant care if prolonged hospitalization	
(2) mental disorders	Rare	Wet-nurse or BM bank, otherwise requires BMS	Often mother unlikely to care for her infant. Provide social support for infant care	
Pregnancy	Rare to uncommon	Not contraindication to BF, but if BF continues it becomes a major energy demand on the mother		Frequent demand feeding throughout the day increases the contraceptive effects of BF
Maternal malnutrition:				
(1) mild to moderate	Common	Not a contraindication for BF, but need for maternal care and food supplements during 2nd and 3rd trimester of pregnancy	Organization of maternal health services, including screening, referral and treating the malnutrition or its underlying cause	
(2) severe, including famine and other disaster situations	Variable	Often inadequate BM. Both mother and infant require supplementation	Organized relief measures, including major mobilization of social and health resources	
(3) Specific nutrient deficiencies in BM	Unknown, but thought to be very rare	Not a contraindication for BF, but need for supplementation of mother and/or infant	Awareness of the problem and availability of diagnostic skills and facilities	



SITUATION	FREQUENCY	IMPLICATIONS FOR INFANT FEEDING PRACTICES	IMPLICATIONS FOR HEALTH & SOCIAL PROGRAMMES	COMMENTS
SOCIOECONOMIC CIRCUMSTANCES				
Death of mother	2 to 1000: 100 000 LBs	Requires BMS if wet-nurse not available	Organization of health and social services if family support not available	
Abandonment of infant	Rare to uncommon	If neither wet-nurse nor BM bank available, requires BMS	Organization of health and social services if family support not available	
Disaster, including famine, refugee conditions, etc.	Variable	Stress, malnutrition and magnitude of situation may overwhelm capacity for adequate BF	Supplementation for both mother and infant, organization of supportive health and social services essential	BMS may be indicated
Working mothers	Common	May be unable to BF during working hours due to time and conditions of travel, work site conditions and facilities, and/or lack of policy and social support	National policy and legislation for maternity protection and promotion and support of BF at work, and for extended maternity leave and benefits	BF can and should be maintained in a variety of circumstances for working women. Need for commitment by the woman, and appropriate support services
Other mothers who decide not to BF, for whatever reason	Variable to frequent	Ensure availability and correct use of BMS in ways not interfering with BF in general	Support these mothers; feeding with BMS demonstrated by health workers to these mothers only; strengthen education of mothers to encourage BF of future infants	Identify infants who have to be fed BMS but whose families are unable to afford it; provide BMS as long as needed

BF = Breast-feeding  
 BM = Breast milk  
 BMS = Breast-milk substitute

LBW = Low birth weight  
 LB = Live birth

\* Although routine prophylaxis is given to all infants, in some settings the necessity for this practice has not been fully established.

\*\* AIDS: Although the recent medical literature on AIDS indicates that the LAV/HTLV-III virus has been found in breast milk, there is as of yet insufficient information available to determine the clinical or public health significance of these findings.

*File: Health  
Services  
Research*

# PRIOOR



**ANNOUNCEMENT  
Funds Available  
for  
Operations Research  
in Primary Health Care**

**Printed February 1982**



# PRICOR

Preliminary research proposals are now being solicited by the Primary Health Care Operations Research project (PRICOR)\* The purpose of the project is to help developing countries find better ways to deliver primary health care (PHC) services.

For 5 years—1982-1987—PRICOR will: 1) fund 30 or more operations research projects; 2) sponsor four workshops and two international conferences; 3) commission a small number of background and methodological studies; and 4) develop a repository of data on PHC operations research.

Approximately U.S. \$700,000 is available in 1982 for support of operations research projects. Although no limit has been set for any given study, applications will be classified as small (U.S. \$10-50,000), medium (\$50-100,000), and large (over \$100,000). Generally, research projects should be completed in no more than 2 years. Preference will be given to small- and medium-sized studies and to projects of shorter duration.

## Background

Statistics indicate that the most serious health problems in developing countries are infant, child, and maternal mortality and morbidity. These problems are gravest in rural and marginally urban areas where health services are the most limited.

Various health interventions exist which could have a dramatic impact on these problems if only ways could be found to get them to the target populations. Among the most efficacious of these interventions are:

- immunizations (DPT, polio, measles),
- treatment for infant respiratory infections,
- oral rehydration therapy,
- malaria prophylaxis and treatment,
- tetanus immunization for pregnant women,
- nutrition monitoring, and
- family planning.

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Primary Health Care Operations Research (PRICOR) is a project of the Center for Human Services, and is funded by the United States Agency for International Development under a cooperative agreement (AID/DSPE-5920-A-00-1048-00). The Center for Human Services is a nonprofit, development services organization specializing in the design and management of programs which address the basic needs of people in developing countries and the United States.

There is an urgent need to expand coverage of high-risk populations in rural and marginally urban areas with these key PHC services. But a number of operational issues need to be resolved before this can happen. The WHO/UNICEF report prepared for the Alma-Ata Conference noted that:

Enough is already known about primary health care for it to be put into practice immediately. However, much still needs to be learned about its application under local conditions; and during its operation, control and evaluation questions will arise which will require research. These may be related to such questions as the organization of primary health care within communities; . . . the mobilization of community support and participation; the best ways of applying (existing) technology; . . . the planning for training of community health workers, their supervision, their remuneration and their career structure; and methods of financing primary health care.

PRICOR's objective is to fund research that will help PHC administrators and program managers find answers to these questions. Operations research on PHC should identify alternative approaches, analyze the advantages and disadvantages of these alternatives, and then help decisionmakers select and implement the most effective (or most cost-effective) approach(es) appropriate to their local settings. Ultimately, operations research should help decisionmakers find better ways to provide essential PHC services to high-risk populations in rural and marginally urban communities.

## **Research Priorities**

PHC is more than just a set of health interventions. It is viewed as an integral part of a development process in which the community and the health system are partners. There is consensus that if PHC is to work, the community must be actively involved in all stages (planning, development, delivery, supervision, support) and that there must be an operational way to link the community to the public and private health systems. In its first year, PRICOR will support research into ways to bring about effective community participation in the expansion of these essential PHC services. Preliminary proposals are solicited in three priority areas:

- 1) Community financing of PHC services; 2) The role of the community health worker; and 3) Community organization of PHC services.



## **1. Community Financing of Primary Health Care Services**

The rapid proliferation of community-based PHC services over the last 10 years has been based on the assumption that PHC is the most cost-effective way to use scarce resources to meet priority needs. Because resources for health care in developing countries are unlikely to increase, and because donors will be unable to finance initial and recurring costs indefinitely, there is now a great need to find alternative ways to finance essential services. A potential source of significant support is the community itself.

The community is a viable source of support because most individuals and communities already pay for some health care (particularly for some drugs and curative services) through various payment schemes (e.g., fee-for-service, in-kind contributions, community insurance). But the extent to which these sources of revenue can be efficiently and equitably tapped to pay for PHC interventions is not known. PRICOR invites research on alternative schemes for local financing of PHC. Two areas of particular interest are: 1) Ways communities can help finance the efficacious PHC interventions which are needed, and 2) Schemes for joint community-health system financing (public or private) of these interventions (e.g., fees for immunizations plus public subsidies of nutrition monitoring).

Research on financing is encouraged to: 1) account for the ability and willingness of local communities to pay for particular services; 2) address both the efficiency (e.g., administrative costs compared to total revenues generated) and equity (e.g., who pays and who benefits from the services) of the financial schemes; 3) account for cultural, political, and administrative factors that affect the design and operation of the schemes; and 4) show how community financing schemes fit into a larger national or regional health financing context.

## **2. The Role of the Community Health Worker.**

For many developing countries, the most realistic solution for attaining total population coverage with essential health care is to employ community health workers who can be trained in a short time to perform specific tasks. (Alma-Ata, 1978)

Because health personnel and resources are limited, the minimally educated lay person (Community Health

Worker [CHW], or Village Health Worker, Rural Health Visitor, etc.) has taken on an important role in the provision of PHC services. But a number of questions remain as to how best to select, prepare, use, support, supervise, and compensate these workers. PRICOR invites research into cost-effective ways to: 1) deliver PHC services through lay workers (e.g., door-to-door, from depots, in caravans); 2) train lay health workers (e.g., through informal training, continuing education); 3) supervise these workers (e.g., to find out which types of supervisory contacts should occur, how often they should occur); 4) provide logistical support to the workers (e.g., through regional depots, mobile vans); 5) assign tasks (e.g., what is the best mix of educational, medical, administrative and other duties for workers); and 6) compensate them (e.g., through enhancing status, providing bonuses, charging fees for service).

Research regarding the role of the health worker is encouraged to address: 1) the cultural, political and administrative factors (both short- and long-term) that affect the CHW's proposed and actual roles; 2) the efficiency of the approaches and their effectiveness in expanding PHC service coverage; and 3) the interaction of the health worker with the larger public and private health systems.

### ***3. Community Organization of PHC Services***

Experience suggests that communities must be involved in planning, providing, and monitoring PHC if it is to be effective. Organizational mechanisms which can bring about this involvement must be developed in communities, and these mechanisms must be compatible with cultural and political norms and effectively linked with the larger public and/or private health-care system. Communities and health authorities have several options open to them. For example, they can extend the public health system into the community (by setting up a health outpost staffed by a health auxiliary); they can add PHC functions to those of an existing community health organization which already has ties to the health system (through community mothers' clubs); they can add health functions to existing nonhealth organizations (an agricultural cooperative); or they can set up a new PHC community organization (a PHC committee).

PRICOR invites research which looks at alternative mechanisms for decentralizing PHC so that



communities can participate effectively in planning, providing, and monitoring PHC. Two areas of particular interest are: 1) use of existing, nonhealth organizational mechanisms (e.g., agricultural cooperatives, primary schools, church organizations, village councils); and 2) development of new health organizational schemes (e.g., health cooperatives, joint community-health system boards).

Research on organization is encouraged to: 1) address the political, administrative, and cultural factors that affect the design and operation of the organizational mechanisms; 2) assess the efficiency of the mechanisms and their effectiveness in contributing to the expansion of PHC coverage; and 3) show how the community organizational mechanisms fit into the larger public and private health systems.

### **Research Approaches**

Any appropriate research methodology can be proposed. PRICOR is particularly interested in encouraging approaches that are decision-oriented and quantitative, include an assessment of the effectiveness of the approaches in extending coverage, and include an analysis of the cost-effectiveness of the alternative approaches. Where possible, research should be added to an ongoing PHC program, rather than set up as a separate project, and it should explore realistic—not theoretical—alternatives.

### **Eligibility**

Research proposals may be submitted by one or more individuals, organizations, institutions, or consortia which have a relationship with a primary health care delivery system in a developing country. Preference will be given to research projects which will be developed and conducted by host-country researchers and which actively involve local decisionmakers in all stages of the research. Collaborative studies involving experts from outside the host country are also encouraged.

### **How to Apply**

A preliminary proposal is required as a first step. It must be typewritten, double-spaced, and no longer than 20 pages. For administrative reasons, PRICOR prefers papers written in English. Proposals written in French and Spanish are acceptable, but they should be accompanied by an English synopsis, if possible.

## Format

1. The name, address, telephone number, and cable address of the proposer should be clearly visible on a cover page.
2. Describe the research priority that will be addressed: 1) community financing of PHC services; 2) the role of community health workers; or 3) community organization of PHC services.
3. Identify and describe the specific research problem and its significance. Identify the specific policy or program alternative(s) that will be studied, the decision(s) that the research will address, and the decisionmaker(s) who have requested the information to be produced by the research.
4. Provide a brief review of what is known about the issue and describe how the proposed research will contribute to new knowledge.
5. Briefly describe the study design. If an experimental design is to be used, describe the experimental and control groups. If a nonexperimental approach is proposed, describe how decision alternatives will be specified and assessed. If samples are to be drawn, describe the sampling procedures.
6. Identify the key variable(s) that will be investigated or the hypothes(es) to be tested. Describe the measures that will be used to assess effectiveness and cost-effectiveness.
7. Give a brief description of the data to be collected and the data collection procedures and types of instruments to be used. If secondary data are to be used, give a brief assessment of their reliability and validity.
8. Describe the analytic procedures and/or techniques that will be used.
9. Describe the reports that will be produced and the procedures for reporting the information to the decisionmaker(s).
10. Give a brief description of the schedule for the research project.
11. Identify all of the research staff, their qualifications and experience, and the amount of time each person will spend on the research project.

*(continued on back panel)*

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**Format** (continued)

12. Briefly describe the institution(s) with which the researchers are affiliated. If more than one institution is involved, describe the institutional relationships.
13. Provide an estimated budget that lists: personnel costs, fringe benefits (if any), consultant costs, travel and per diem, other direct costs (e.g., telephone, supplies, data processing, etc.), and any other costs for which support is requested (e.g., general and administrative costs, overhead charges).

**Review Process**

Preliminary proposals will be reviewed and evaluated twice each year by PRICOR staff and independent experts in international health research. Those judged to best meet PRICOR's objectives will be selected, and proposers will be invited to prepare full proposals.

PRICOR will provide guidance and suggestions for strengthening the full proposals where appropriate. Proposals will then be reviewed by an independent committee and awards will be made—subject to AID approval—to conduct those with the highest ratings. The submission of a proposal in no way guarantees funding by PRICOR. However, subject to the availability of funds, PRICOR expects to fund as many of those proposals judged acceptable as possible.

**Review Schedule for 1982**

	First Cycle	Second Cycle
Deadline for submission of preliminary proposals	May 15	August 31
Review of preliminary proposals completed	June 12	September 30
Invitation to prepare proposals	June 18	October 5
Deadline for submission of proposals	August 14	December 1
Review of proposals completed	August 28	December 15
Notification of award	September 3	December 21

**Further Information**

To submit preliminary proposals, or for further information or assistance, please contact PRICOR at the address given below, or the Mission Director of any United States Agency for International Development (USAID).

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THIRTY-NINTH WORLD HEALTH ASSEMBLY

Provisional agenda item 22.2

PREVENTION OF DEAFNESS AND HEARING IMPAIRMENT

Report by the Director-General

In response to resolution WHA38.19, the Director-General submits to the Thirty-ninth World Health Assembly this report assessing the extent, causes and consequences of hearing impairment and making proposals for strengthening measures for prevention and treatment.

Although hearing impairment is common, little effort has been made in developing countries to prevent this condition. It is estimated that perhaps as much as 50% of the current hearing impairment in these countries could be totally avoided, or its consequences significantly reduced, by the application of appropriate measures for the primary and secondary prevention. Such prevention should - whenever feasible and appropriate - be introduced as an integral part of the health services to be implemented in the context of the strategy of health for all.

This report begins with proposals for the definition of various grades of impairment, based on performance testing and not, as in the past, on audiometer screening. Five grades of impairment are proposed and defined.

All the prevalence estimates in this report relate to persons over the age of three years and are based on hearing performance surveys. The number of people with profound and severe bilateral hearing impairment is estimated at some 12 million and those with moderate impairment at about 30 million, the total estimate being 42 million. Due to increases in the world population and also changes in its age structure, the overall prevalence can be expected to be about 57 million by the year 2000. These figures are approximate, as the data basis is insufficient.

Proposals are made for a future approach on how to strengthen efforts to diagnose hearing impairment in developing countries.

A comprehensive list has been drawn up of all the common causes of hearing impairment, followed by a detailed review as to what can be done to reduce their incidence by primary and secondary prevention. In this review curative treatment of otitis media emerges as a priority. Congenital deafness, the most serious of all hearing impairments, could be reduced by rubella immunization and iodization in areas of endemic goitre. Genetic counselling could prevent congenital deafness, but may be difficult to implement. A reduction of the noise levels in industry and traffic would help to decrease acquired hearing impairment, and provision of hearing aids could compensate for the hearing loss in a large number of people with severe and moderate hearing difficulties.





A short review of the availability of services leads to the conclusion that in developing countries there is a serious lack of services at all levels to implement a hearing impairment prevention programme.

Finally, specific plans of action are proposed for the remaining period of the Seventh General Programme of Work (1986-1989) together with an estimate of the budget requirements for their implementation.

Report by the Director-General

## I. INTRODUCTION

1. Deafness and hearing impairment are common throughout the world. There are now about 42 million persons (over the age of three years) with profound, severe or moderate hearing impairment, and this number will increase to some 57 million by the year 2000. The victims face many devastating and - to a large extent - unrecognized health and social problems. It seems probable that deaf infants and children have higher mortality rates than other children.<sup>1</sup> Even a period of temporary hearing impairment - for example, for six months - during early childhood will often lead to delayed development. Deaf and seriously hearing-impaired children rarely receive any schooling in developing countries. It has been estimated that in India only 1.5% of deaf children receive education.<sup>2</sup> Some countries have an even lower proportion of deaf children attending school, or may have no facilities at all.
2. Even people with only moderately impaired hearing have difficulties in finding employment, and the economic situation of such persons and their families is extremely poor. Their social contacts are also very limited, as people with normal hearing seldom make an effort to try any means of communication with them. Thus, people with impaired hearing are a seriously underprivileged group. Action to provide rehabilitation - a subject not covered by this report - should be given higher priority, especially in developing countries.
3. Prevention of hearing impairment consists - as will be further discussed below - of a number of interventions. Although most developed countries and some developing countries have taken action in the direction of better prevention, more such action is needed.

## II. DEFINITIONS

4. After a review of the present set of definitions,<sup>3</sup> it is proposed that instead of keeping a terminology based on audiometric measurements, it would be better - especially in countries which do not yet have general access to audiometric technology - to base the definitions on bilateral hearing performance tests. There are several options for such tests. Based on proposals from several experts, a new set of definitions is suggested (see Table 1) with five different grades of impairment, four of which relate to bilateral hearing impairment and one to unilateral hearing impairment. These grades have been translated into comparable audiometric values, as shown in the Table.
5. It is proposed that for grade 5, both the terms "profound hearing impairment" and "deafness"<sup>4</sup> be used. The two other groups of concern consist of those with severe (grade 4) and moderate (grade 3) hearing impairment. It should also be explained that grades 1 and 2 do not always present a continuum. In some situations a person with grade 1 impairment hears less well than a person with grade 2 hearing loss.

<sup>1</sup> In some circumstances, these children are neglected by their parents. They become malnourished and have a tendency to acquire infectious diseases, such as gastroenteritis. Such infection is associated with high mortality.

<sup>2</sup> Prevention of deafness among children: report on an intercountry workshop held in New Delhi, 29 March - 2 April 1982. New Delhi, World Health Organization, 1982 (WHO document SEA/NCD/13).

<sup>3</sup> International classification of impairments, disabilities, and handicaps: a manual of classification relating to the consequences of disease. Geneva, World Health Organization, 1980.

<sup>4</sup> The term "deafness" should be used only for persons with grade 5 hearing impairment, and it is proposed that the terms "deaf and dumb" and "deaf mute" should be dropped, as they are based on mistaken assumptions regarding the character of deafness.



TABLE 1. GRADES OF HEARING IMPAIRMENT<sup>1</sup>  
(testing without the use of a hearing aid)

Performance	Impairment grade	Corresponding audiometric ISO value*
Unable to hear any spoken words in either ear	5 Profound bilateral hearing impairment (deafness)	81 dB or more
Able to hear some words if shouted in the better ear	4 Severe bilateral hearing impairment	61-80 dB
Able to hear words shouted at a distance of three metres	3 Moderate bilateral hearing impairment	41-60 dB
Some difficulty hearing, but can usually hear words spoken in a normal voice	2 Slight bilateral hearing impairment	26-40 dB
Hearing problems with one ear only	1 Unilateral hearing impairment	Better ear normal value (25 dB or better)
No hearing problem	0 No impairment	Both ears normal (25 dB or better)

\* Average hearing threshold for the better ear at 500, 1000 and 2000 Hz tested without a hearing aid (unamplified hearing).

6. It may be useful to also consider what is meant by the term "disabling hearing impairment". The grade of disability does not always correspond to the grade of impairment. First of all, an impairment may be partly offset by the use of a hearing aid, which certainly decreases the disabling effect. Furthermore, environmental and social factors play an important role. For example, a child with a grade 2 impairment, who goes to school in a class of 60 pupils, in surroundings with a high degree of background noise, may almost be totally unable to hear the teacher. On the other hand, an elderly person with the same grade of impairment, who lives in a small and quiet household may have no problems in coping with daily life and in communicating. Regardless of such factors, grade 4 and grade 5 impairment are inevitably associated with a high degree of disability.

7. Hearing impairment may also be combined with other impairments, such as vision and locomotion difficulties; the resulting total disability can be very substantial, even if the grade of hearing impairment is low.

<sup>1</sup> A different grading system was proposed by the International Organization for Standardization in 1970: ISO R389. That system is not compatible with the one proposed above. The ISO system is based on audiometry testing; as this technique is currently not feasible in developing countries, a system based on hearing performance is suggested. ISO recommends five different levels of bilateral impairment; above, four such levels are proposed. The prevalence figures in the text that follows are based on performance testing, not on audiometry.



III. PREVALENCE OF HEARING IMPAIRMENT

Developed countries

8. On the basis of the above set of definitions and of the data provided by the most thorough survey of hearing impairment, based on performance tests, undertaken in a developed country,<sup>1</sup> the prevalence of hearing impairment in those countries among the population over three years of age can be calculated with relative accuracy.

TABLE 2(a). ESTIMATED PREVALENCE OF HEARING IMPAIRMENT IN DEVELOPED COUNTRIES<sup>2</sup>  
(population over three years of age)

Age	Total population (millions) 1985    2000		Population with impairment					
			Percentage <sup>1</sup>		1985 (millions)		2000 (millions)	
			grade 5 + 4	grade 3	grade 5 + 4	grade 3	grade 5 + 4	grade 3
3-14	206	207	0.073	0.188	0.150	0.387	0.151	0.389
15-44	522	541	0.075	0.219	0.392	1.143	0.406	1.185
45-64	257	295	0.323	1.008	0.830	2.591	0.953	2.974
65+	130	166	2.455	5.416	3.192	7.041	4.075	8.991
	1 115	1 209			4.564	11.162	5.585	13.539
						15.726		19.126

9. The prevalence in the United States of America projected for the 1985 population (1115 million) of the developed countries gives an estimated total of about 15.7 million people with hearing impairment grades 3, 4 and 5 (Table 2(a)). Of these, about 4.5 million would have a profound or severe bilateral hearing impairment. The numbers may be expected to rise in the future: of the 1200 million people in developed countries in the year 2000, 5.6 million are expected to have profound or severe hearing impairment, and 13.5 moderate hearing impairment.

Developing countries

10. There are no similar data for developing countries. The above-mentioned prevalences for various grades of hearing impairment, adjusted for differences in population age-structure between developed and developing countries, give the estimates shown in Table 2(b).

<sup>1</sup> Persons with impaired hearing: United States - 1971, Vital and Health Statistics, data from the National Health Survey, Series 10, No. 101, U.S. Department of Health, Education and Welfare.

<sup>2</sup> Population data source: Demographic indicators of countries: estimates and projections as assessed in 1980. New York, United Nations, 1982.

TABLE 2(b). ESTIMATED PREVALENCE OF HEARING IMPAIRMENT IN DEVELOPING COUNTRIES  
(population over three years of age)

Age	Total population (millions) 1985 2000		Population with impairment <sup>1</sup>					
			Percentage		1985 (millions)		2000 (millions)	
			grade 5 + 4	grade 3	grade 5 + 4	grade 3	grade 5 + 4	grade 3
3-14	1 035	1 230	0.073	0.188	0.771	1.985	0.920	2.369
15-44	1 675	2 306	0.075	0.219	1.256	3.668	1.729	5.050
45-64	468	693	0.323	1.008	1.512	4.717	2.238	6.985
65+	152	237	2.455	5.416	3.732	8.232	5.794	12.782
	3 330	4 466			7.271	18.602	10.681	27.186
						25.873		37.867

11. The prevalence in the United States of America projected for the 1985 population of the developing countries gives an estimated total of 25.9 million people with hearing impairment grades 3, 4 and 5 (Table 2(b)). Of these, 7.2 million would have a severe or profound hearing impairment and 18.6 million a moderate one. By the year 2000 these prevalences are expected to rise to some 10.7 million and 27.2 million respectively.

All countries

12. On the assumption that the above are moderate estimates of the prevalence of hearing impairment, the total prevalence in all countries (both developing and developed) can be estimated as shown in Table 2(c).

TABLE 2(c). ESTIMATED PREVALENCE OF HEARING IMPAIRMENT - ALL COUNTRIES  
(population over three years of age)

Hearing impairment - grade	Population with impairment	
	1985 (millions)	2000 (millions)
5 + 4	11.835	16.266
3	29.764	40.725
	41.599	56.991

<sup>1</sup> As in the previous table for the developed countries, the data of the United States study are here projected for the total population of developing countries. The much greater increase foreseen for 2000 is due to differences and trends in population size and age distribution.



13. It thus appears that, in 1985, there are about 41.6 million people with impaired hearing, in 11.8 million of whom it is severe or profound, and in 29.8 million moderate. By the year 2000 these prevalences will have risen to about 16.3 million and 40.7 million, respectively, or a total of about 57 million. On this basis, it is suggested that until more reliable evidence has been produced, the above estimates could be used to indicate the size of the global population at present (1985) having hearing impairment.<sup>1</sup>

14. The figures above are a moderate estimate; the incidence of hearing impairment is most probably higher in developing than in developed countries, a main factor being the much higher incidence of otitis in these countries. On the other hand, the prevalence rates may be reduced by the fact that many hearing impaired children die from diarrhoea, pneumonia/bronchiolitis and other diseases combined with malnutrition. Thus the numbers are likely to be revised when the results of accurate sample surveys become available.

15. It is of fundamental importance that such sample surveys should be carried out in as many countries as possible to find out the extent of the problem and also to highlight the urgency of preventive action. Furthermore, such research will also make it possible to plan for rehabilitation of persons with hearing impairment, an action badly needed in many developing countries. The studies should include research on the mortality rate of infants and children with hearing impairment of grades 4 and 5.

#### IV. DIAGNOSIS OF HEARING IMPAIRMENT

16. In the industrialized countries, a number of simple screening tests are widely used (e.g., for testing of infants and children, in schools, at examinations of recruits for the armed forces, etc.). If screening tests give any indication of a hearing impairment, an ear examination and then an audiometric test normally follow. If these examinations confirm a suspicion of a chronic impairment, the person would be referred to appropriate specialists. It should be pointed out that screening tests for children under three years of age are not very accurate. It is therefore urgent in developed, as well as underdeveloped countries to undertake efforts to increase their validity.

17. A similar approach could be set up within the health services of all developing countries. It should be understood that what is proposed is an ideal example for a long-term solution; meanwhile countries will adjust the diagnostic services to what is feasible in their environment. Also it must be recognized that to diagnose is only meaningful if there is a possibility for subsequent corrective action of a curative or rehabilitative nature.

18. Developing countries are now in the process of setting up primary health care delivery systems and the appropriate referral level services. The technology for diagnosing hearing impairment should - at an appropriate phase - be included in existing health services using a non-specialized "horizontal" approach, recognizing the fact that the specialized services may still take many years to develop. The following proposals are made.

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<sup>1</sup> A review of some international estimates has been undertaken by McCavitt, M. E. International survey of deafness and services to deaf people. Proceedings of the World Federation of the Deaf, Washington, D.C., 1975.

A survey giving, inter alia, percentages of people aged 60 and above who report hearing problems has been published by the World Health Organization (Heikkinen, E., Waters, W. E. & Brzezinski, Z. J., ed. The elderly in eleven countries: a sociomedical survey. Copenhagen, World Health Organization, 1983).



Level 1: Community (village block, etc.)  
Population about 500-5000

At this level people will normally receive essential services from a primary health care worker, based in the community. This worker should be taught how to apply simple screening tests to detect hearing impairment in children and adults. It is recommended that all children undergo the first routine test before the age of two years and the second just before they reach school age. Further tests could be given on a regular basis to older children and adolescents and should, in any case, be administered to all who complain about their hearing, or ear discharge, pain, persistent headache, vertigo or tinnitus, as well as to infants and children belonging to high-risk groups (low birth weight and certain other conditions at birth).

There are several useful descriptions of how simple screening tests can be carried out.<sup>1</sup> The first diagnosis of a hearing impairment in an infant is often made by the mother. Public information campaigns might contribute to early identification of hearing impairment. The screening of a child under three years of age is - as already indicated - more difficult than screening at later ages. The health worker needs more experience when screening infants of this age than when screening older children.

When a health worker identifies any person with possible hearing impairment, a referral should be made to the next level.

Level 2: Health centre  
Population about 5000-10 000

At this level there may or may not be a physician in attendance. If there is no physician, the referrals from the health worker for diagnosis of hearing impairment may be sent to a medical assistant, a nurse, or a rehabilitation assistant, for example.

Also at this level hearing ability could be tested with a tuning fork (and possibly, later on, with a low-cost audiometer - see paragraph 21(2)). Ear examinations to exclude wax and foreign bodies should, if possible, be made with a simple otoscope.

Level 3: The first-line hospital  
Population about 10 000-50 000

This has one or more, mainly non-specialized, physicians. Here audiometric examinations could be carried out, when a low-cost audiometer can be provided. A simplified audiometer is now undergoing testing in several countries. Whenever a hearing impairment is diagnosed, the physician should be able to ascertain most of the causes of such impairment. However, when necessary, referrals to level 4 should be considered.

Level 4: The specialized services  
Population over 50 000 (usually much more)

Here there would ideally be a physician trained in ear, nose and throat diseases and a professional staff member with some experience in audiology (e.g., an audiological assistant). At this level it should be possible to further diagnose the cause of the hearing impairment, and make an assessment of excessive noise in the environment.

19. The above outline is only one model and many alternatives are possible, e.g., mobile consultants or test vans from level 4 could visit first-line hospitals and other hospitals which do not have access to a specialist. Also, simple, low-cost audiometry could be used at level 2 and not only at levels 3 and 4.

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<sup>1</sup> Helander, E., Mendis, P. & Nelson, G. Training disabled people in the community. Geneva, World Health Organization, 1983, pp. 33-37; Nolan, M. N. & Tucker, I. G. The hearing impaired child and the family. London, Souvenir Press (E. & A.) Ltd., 1981, pp. 35-70.



20. It should be noted that better screening and diagnosis is of importance also in identifying reasons for speech difficulties other than those due to hearing impairment; e.g., those caused by mental retardation, autism, multiple handicaps, etc.

21. The following studies and research could provide useful information on how to proceed while developing diagnostic services aimed at detecting hearing impairment.

(1) The reliability of screening programmes could be assessed. The present procedures are based on questions to informants (e.g., heads of households) and their answers. Simple performance tests would be preferable and could be given to everybody, and not only to household members whom the informant has identified as having a hearing impairment. The cost-effectiveness of such improved screening could be studied.

(2) A model of a simple, low-cost audiometer exists already. This and others could be field-tested. Then the most useful field audiometer (or audiometers) could be manufactured. It is estimated that a suitable audiometer, including rechargeable battery, could be mass-produced at about US\$ 30. A manual (English, French, Spanish, Arabic) should be developed, describing screening procedures and the use of the simple audiometer. A booklet is needed to describe its technical maintenance and repair.

(3) A manual on the use of an otoscope for diagnostic and therapeutic procedures could be produced. It should then be field-tested and made available in English, French, Spanish and Arabic.

#### V. CAUSES OF HEARING IMPAIRMENT

22. There is a large body of information regarding the causes of hearing impairment in developed countries. In most developing countries such information is scarce.

23. Below is a list of the common causes of hearing impairment (in random order):

##### Common causes of hearing impairment

- (1) Genetic factors, symptoms may be present already at birth or appear later in life, e.g., in the case of otosclerosis.
- (2) Malformations, e.g., absence of outer ear, of ear canal, of ossicles.
- (3) Certain diseases of the mother during pregnancy, e.g., rubella, cytomegalovirus.
- (4) Perinatal factors, anoxia, traumatic brain damage, jaundice, rhesus incompatibility, prematurity.
- (5) Otitis media (middle ear infection).
- (6) Other infectious diseases, e.g., meningitis, measles, viral encephalitis, mumps, varicella/zoster, Lassa fever, malaria, and herpes type 2 virus and cytomegalovirus infections.
- (7) Excessive noise, especially if it occurs over an extended period of time.
- (8) Trauma, e.g., brain concussion, haemorrhage, laceration.
- (9) Menière's disease.
- (10) Tumours that compress the auditory nerve, e.g., acoustic neurinoma, neurofibromatosis.
- (11) Cerebrovascular disease (stroke).
- (12) Aging (presbycusis).
- (13) Ototoxic drugs, e.g., antibiotics (streptomycin, gentamicin, amikacin, tobramycin, neomycin, etc.), analgesics (salicylates), antipyretics, diuretics, quinine.



(14) Nutritional factors, e.g., goitre, kwashiorkor, cassava eating (causing chronic cyanide poisoning).

(15) Other diseases or conditions that an otologist can diagnose, e.g., tinnitus.

24. Epidemiological research should be undertaken to improve the data basis. As local conditions vary greatly, such research should be set up in several countries of each geographical region.

#### VI. PREVENTION OF HEARING IMPAIRMENT

25. In considering a possible approach to the prevention of hearing impairment, the definitions of disability prevention used in the WHO programme and policy for disability prevention and rehabilitation apply.<sup>1</sup>

Primary prevention includes the action aimed at preventing the impairment from occurring (e.g., immunization against rubella and other preventable diseases, genetic counselling, accident prevention, hearing conservation programme in the workplace, etc.).

Secondary prevention includes action to be taken once the impairment is present, either to cure a disease (e.g., otitis media) or to stop its progress (e.g., streptomycin-induced hearing impairment) or to reverse the damage to the hearing (e.g., by ear surgery) or to compensate for a hearing impairment (e.g., by a hearing aid or sound amplification in rooms, etc.).

Tertiary prevention includes rehabilitation, such as special education in communication, provision of an interpreter, provision of a job, improved social integration to diminish the handicapping social, economic and psychological consequences of the hearing impairment.

26. Table 3 summarizes the most important risk factors and their estimated importance, and gives examples of some primary and secondary prevention. (Tertiary prevention is not dealt with in this report.) It lists 15 causes of hearing impairment. An attempt has been made to quantify the importance of each by ranging it in one of three classes. The most important (\*\*\*) are genetic factors, otitis media and aging (presbycusis). Moderate contributors (\*\*) include diseases in pregnancy, such as rubella, perinatal factors, other infections (such as meningitis and Menière's disease). Other causes are estimated to contribute on a small scale only.

27. In the interpretation of this table the priorities associated with the impact of a hearing impairment on an individual have to be taken into account. For instance, rubella-caused deafness in an infant is a lifelong and very serious disabling condition. It therefore is more urgent to direct preventive action to this cause of hearing impairment than to prevent conditions which cause moderate hearing impairment only, and do so later in life.

28. The following comments are offered regarding preventive measures in the order in which the causes appear in Table 3.

(1) Genetic factors. Genetic factors are most likely to cause hearing impairment in populations with a high rate of consanguinous marriage.<sup>2</sup> It is estimated that above half of all deafness (grade 5 impairment) among children is of genetic origin. Although much epidemiological information is available from developed countries,<sup>3</sup> there is not enough about the situation in developing countries. Therefore, support for such research should be considered. But it must be remembered, in this connection, that a number of attempts have been made in the past to explore other genetic conditions causing serious disability, such as blindness and it has proved difficult to implement programmes aimed at prevention of

<sup>1</sup> WHO document A29/INF.DOC./1, 1976.

<sup>2</sup> Kapur, G. P. Deafness. In Wilson, J., ed., Disability prevention: The global challenge, Oxford University Press, 1983.

<sup>3</sup> Fraser, G. R. Profound childhood deafness, J. Med. Genet., 1964, pp. 1-118.



TABLE 3. CAUSES OF HEARING IMPAIRMENT, THEIR RELATIVE IMPORTANCE AND SOME POSSIBLE HEALTH SYSTEM, OR OTHER, FIRST- AND SECOND-LEVEL PREVENTION

Cause	Importance <sup>1</sup>	Examples of prevention		Health care delivery system
		(1) primary	(2) secondary	
1. Genetic factors	***	(1) Genetic counselling; public education		Primary health care; referral health services; schools, information services
2. Malformations	*	(2) Surgery		Referral health services
3. Certain diseases of the mother during pregnancy	**	(1) Improved care of pregnant women; rubella immunization		Primary health care; school health services
4. Perinatal factors	**	(1) Improved care during pregnancy and at birth		Primary health care; referral health services
5. Otitis media	***	(1) Identification of risk children; (2) Antibiotic treatment		Primary health care
6. Other infections	**	(1) Immunization against meningitis, measles, mumps		Primary health care
7. Noise	**	(1) Reduction of noise levels in industry and transport; use of protection against noise		Legislation; hearing conservation programme; inspection of machines, vehicles and aircraft
8. Trauma	*	(1) Accident prevention; public education (2) Surgery		Information channels Referral health services
9. Menière's disease	*	(2) Surgery		Referral health services
10. Tumours	*	(2) Surgery		Referral health services
11. Cerebrovascular disease	*	(1) Stroke prevention in risk groups; public information		Primary health care; information channels
12. Aging (presbycusis)	***	-		-
13. Drugs	*	(1) Avoidance of such drugs; (2) Close supervision patients treated with causative drugs		Primary health care; referral health services
14. Nutrition	*	(1) Iodization; nutritional programmes, public education		Public health legislation; information channels
15. Other	*	-		-

<sup>1</sup> This estimate of importance relates to the quantified data:  
 \*\*\* denotes the cause of a high proportion of hearing impairment;  
 \*\*, a moderate proportion; and  
 \*, a low proportion.



genetically caused disabilities. In the present situation great caution is needed where genetic counselling is concerned. There are many examples of persons having non-genetic hearing impairment being prevented from marrying, or counselled to have no children, or sterilized. Genetic relationships, especially in recessive cases, are seldom simple and unjustified intervention has caused a lot of psychological trauma.

(2) Malformations. These are rare and may sometimes be corrected by surgery.

(3) and (4) Certain diseases of the mother during pregnancy and perinatal factors. The risk of hearing impairment should be taken into consideration in all maternal and child health programmes.

Rubella infection in pregnant women is known to cause grade 4 or grade 5 hearing impairment in a proportion of the infants. There are at present three main approaches in rubella immunization. The first aims at individual protection of women throughout their childbearing period and is based on immunization of girls aged 10-14 years with one dose of monovalent rubella vaccine. This strategy is not believed to diminish the circulation of the wild virus. The second approach is intended to interrupt transmission of the rubella virus in young children, thus reducing the possibility of exposure of susceptible pregnant women and requires immunization of all children at 15 months of age with combined measles-mumps-rubella vaccine (MMR). The third scheme is a compromise programme, which is based on immunization of all children with two doses of MMR, one at 18 months and another at 12 years of age.

WHO has not so far formulated a recommendation on which strategy to follow. Industrialized countries in general have adopted a number of rubella immunization programmes and this has led to a considerable reduction of hearing impairment at birth. However, in the case of the developing countries, very little action has been taken. The Expanded Programme on Immunization is primarily targeted at children under one year of age and does not include rubella.

Further epidemiological studies will have to be carried out in several developing countries before a strategy for rubella immunization can be decided upon. Immunological research is also needed to find out the age at which most children and/or adolescents have the disease, the duration of immunity that results from primary infection, etc. Further, should such studies confirm that rubella is a factor causing hearing impairment to the same degree in developing countries as in developed ones, it is recommended that governments and primary health care services should seriously consider a programme of rubella immunization.

With regard to perinatal factors, it should be borne in mind that hearing impairment may be prevented by safe delivery, prevention and management of neonatal jaundice and management of acute respiratory infection. Early detection - which would help to prevent some of the consequences of hearing impairment during infancy and childhood - should be included in the routine screening programmes of children under five years of age.

(5) Otitis media. Acute otitis media is one of the most common infections in infancy and childhood in all countries. Most children over one year of age have probably had at least one episode of otitis media and many children will have had three or more infections. Recurrent and chronic otitis media in infancy and early childhood may have long-term effects on development of speech, language and cognitive functions. It is the most important cause of conductive hearing impairment in young people in developing countries.

Primary prevention could be made possible if more were known about high-risk children. Among factors to consider are: quality of housing (over-crowded homes cause more cross-infections among children), lack of hygiene, malnutrition, and limited access to health care services. An inverse relationship between socioeconomic status and the risk of developing otitis media has been reported in many studies giving support to the commonly quoted expression that "the running ear is the heritage of the poor".

Epidemiological studies of otitis media in developed countries have shown that bacteria are present in middle ear exudates in about two-thirds of children having this disease, and this proportion is likely to be higher in developing countries. The most prevalent agents are Streptococcus pneumoniae and Haemophilus influenzae.



The present consensus is that secondary prevention of hearing impairment caused by otitis media includes antibiotic treatment. Although oral penicillin is given as a standard treatment in some countries, this treatment does not provide the concentration needed to eliminate H. influenzae from middle ear fluid. The drugs currently preferred are either ampicillin (amoxycillin) or cotrimoxazole.

The primary health care services of developing countries should provide the facilities for the diagnosis and antibiotic treatment of otitis media in infants and children, in whom this infection is easy to diagnose if the eardrum is perforated and there is ear discharge. In unperforated otitis, otoscopic examination is necessary. In older children clinical recognition is facilitated when the child can say that the ear is painful. The use of the otoscope cannot be taught to community health workers and health staff with less than three years' formal training; thus, the otoscope is not an appropriate technology for the most peripheral services of primary health care in developing countries. There is a clear need for research and development of appropriate technology for easy application by non-doctors to identify the presence of unperforated acute otitis media in infants and young children at the community level of primary health care.

In children with chronic ear discharge the use of antibiotics is controversial; a useful treatment is aural toilet four times a day with absorbent clean paper or cloth rolled into a wick, repeated for several days until the drainage stops. Antihistamines and vasoconstrictors are ineffective in both acute and chronic media.

In some patients with chronic otitis media, surgical intervention is needed. In some countries this has been done through what are known as "ear-camps". They consist of ad hoc surgery services set up for a few days or weeks in an urban or rural area, where there is no specialist in ear, nose and throat diseases. Usually a number of highly complex operations are carried out: eardrum and other reconstructive surgery, cholesteatoma removal, drainage, etc.

Opinions regarding ear-camps differ; some specialists advocate their use on an extended basis, others are more critical and indicate that the ear camp approach does not sufficiently take into consideration the need for follow-up of patients to ensure the success of the intervention. Highly sophisticated technology (e.g., for microsurgery) needs to be used, and there is almost no possibility of delegating any of the interventions to less specialized staff. In these and other aspects, ear-camps differ from eye-camps.

In the absence of a consensus, ear-camps cannot at the present time be recommended as a technology to provide specialized ear surgery. Only after further studies would it be possible to evaluate their effectiveness. For the time being, there is agreement to recommend use of the traditional referral system approach, and strengthen it with decentralization to the first-line hospital of some of the more common and less complex ear surgery. Further studies of innovative efforts to improve provision of ear surgery, on a decentralized basis, should be given high priority.

(6) Meningitis. Immunizations should be carried out in geographical areas where meningitis is endemic. There is now a low-cost vaccine against meningitis A and C, and a new vaccine against meningitis B is expected in the near future. Epidemiological studies should be undertaken involving the age groups at highest risk. Furthermore, to avoid hearing impairment resulting from meningococcal and pneumococcal infections, early treatment should always be instituted.

(7) Excessive noise. Occupational exposure to intensive noise is encountered in a wide variety of industrial and mining processes, e.g., in the textile industry, particularly spinning and weaving, machine operations; in stone crushing plants; in use of powered machinery, such as trucks and tractors, and the use of drills in construction, tunnelling and mining.

Hearing loss due to noise is considered one of the most common work-related diseases. It is irreversible involving auditory nerve deafness and damage to the organ of Corti in the inner ear. It occurs after prolonged exposure to intensive noise (above 85 dB). It is not uncommon to find 25% or more of workers exposed to noise having a moderate or severe occupational hearing impairment. However, at present there is no standard occupational disease reporting system, those figures are based on epidemiological surveys by occupational health institutions. More work is needed to develop a full understanding of the incidence of this cause of hearing impairment and its consequences.



Regarding prevention it might be mentioned that the occupational exposure limit adopted by a number of countries for noise is 85 dB.

Preventive measures include mainly the following:

- (1) control at the source of noise, for example, by: padding or suspension of noisy machinery and use of mufflers for exhaust gases under pressure;
- (2) environmental control, primarily by enclosure of the source and utilization of noise-absorbing material on the walls;
- (3) periodic audiometry of the workers exposed to noise for the early detection of hearing impairment before a level of complete deafness is reached. In pre-employment medical examinations, workers susceptible to noise, such as those with a history of diabetes, arterial hypertension, otitis media infection and meningitis, should be excluded or very carefully observed in exposure to intensive noise at work.

(8), (9), (10), and (11) Trauma, Menière's disease, tumours and cerebrovascular disease. These are rare causes of hearing impairment and should be dealt with by the preventive measures appropriate to the disease or condition.

(12) Aging. Not much is known about the natural failure of hearing with advancing age (presbycusis) in developing countries. It is known for instance, that, in the case of age-related eye disease such as cataract, the disease appears among much younger people in developing countries than in industrialized countries. Whether this is related to premature aging or to other environmental factors is debatable.

Presbycusis - a major cause of hearing impairment - can sometimes be ameliorated by the use of hearing aids. Such aids are, however, very expensive. It is technically feasible to manufacture hearing aids costing us US\$ 10 or less. Once these are available, and there is appropriate technical staff to handle adjustments and repairs, and supply batteries, etc., a high proportion of the elderly in developing countries could benefit. Hearing aids are now worn by 2-5% of the population in developed countries and there is reason to believe that such aids are needed by a similar proportion of people in developing countries.

It should be pointed out that the use of hearing aids is not restricted to cases of presbycusis, even if this is the most common reason. Most people with hearing impairment (except some of those who have sensorineural deafness) can be helped by such aids. Thus the manufacture of a low-cost aid is of utmost importance.

(13) Drugs. Drugs which frequently cause hearing impairment should be used with caution.<sup>1</sup> Some of these drugs are included in the recommended WHO Model List of Essential Drugs, and it would be desirable to substitute others for them. If there is no alternative, the greatest care should be taken to monitor side-effects.

The best known example of a drug with toxic effects on hearing is streptomycin. It is used either daily, during the first two months of treatment, or twice a week, for a year, in what is known as the "intermittent" therapy for tuberculosis. The risk of hearing impairment is greatly diminished when low (although effective) doses are prescribed. The usual therapeutic dosage in adults is 15 mg/kg body weight in both daily and intermittent treatment. However, a total dose of 1 g per day in adults under 60 years of age, and of 0.75 g in older persons should never be exceeded. In children the dosage could be up to 20 mg/kg. Streptomycin should not be given to persons with insufficient renal function. WHO manuals on tuberculosis stress the necessity of keeping the dosage within these levels to avoid hearing impairment.

(14) Nutrition. In the geographical areas where goitre is endemic, hearing impairment is common, often in association with cretinism and mental retardation. Preventive action has been taken in many such areas - mainly by iodization of commercially distributed salt. In the future these efforts need to be strengthened.

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<sup>1</sup> A survey of ototoxic drugs appears in Paparella, M. M. & Shumrick, D. A., ed. Otolaryngology, 2nd ed., Philadelphia, W. B. Saunders, 1980, pp. 1804-1827.



(15) Other causes. There are a number of other causes for hearing impairment, such as smoking and exposure to toxic agents. In tinnitus-associated hearing impairment a variety of factors may be involved; most specialists doubt that effective intervention is possible in the majority of such cases.

29. In short, some hearing impairment is preventable - especially the severe forms (grades 4 and 5) appearing at birth or during childhood. Other hearing impairment is reversible or may be compensated for. It seems theoretically possible that perhaps as much as 50% of the incidence of hearing impairment in developing countries could be totally avoided or its consequences significantly reduced by prevention. In practice, however, to prevent, reverse or compensate for hearing impairment requires a multifaceted approach including the setting up of many programmes in several sectors, which is likely to take a long time. The level of reduction theoretically possible will not be obtained by any short-term action; it requires a long period of well-planned and methodical work.

30. One of the reasons why action has not been undertaken in some developing countries is the lack of public awareness of this widespread disability and its grave consequences. Information campaigns, public education and strengthening of organizations of hearing-impaired people may contribute to increased awareness.

31. Another reason is the lack of appropriate and reliable information regarding many of the epidemiological aspects, the effectiveness and feasibility of various preventive measures, and insufficient development of technology. It is urgent that steps be taken to rectify these shortcomings, especially to assess the potential effect of some prevention.

#### VII. AVAILABILITY OF SERVICES

32. Better prevention and treatment of the various conditions leading to hearing impairment depends to some extent on the availability of specialists and specialized services. Specialists are needed to train staff at peripheral levels, to supervise services, and to act as mobile consultants (whether in ear-camps or as regular visitors to level 3 health facilities).

33. Specialists in ear, nose and throat diseases are today not available in sufficient numbers. A recent study of the six countries of the Association of South-East Asian Nations (Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore and Thailand) showed that these countries had one such specialist to 520 000 population.<sup>1</sup>

34. Table 4 shows the proportion of hospital beds for ear, nose and throat diseases in selected countries. It reveals the large differences in availability of ENT services between countries. It should be noted that there are a large number of developing countries for which statistics are not available; in some cases this absence of data can be interpreted as meaning that ENT hospital beds are quantitatively negligible.

35. If the above facts serve to emphasize that services at health care level 4 are insufficient, the same point can be made as regards availability of services at levels 1, 2 and 3: health staff in general - who are responsible for treatment of ear conditions - are too few to provide the care needed for an effective programme of prevention of hearing impairment.

36. Means of strengthening the manpower training should be developed, though it may be justified in some countries first to carry out the research and studies proposed above. This research will serve to clarify the requisite policies and practical action for primary and secondary prevention, and especially what can be done by auxiliary personnel.

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<sup>1</sup> Prasanuk, S. (paper presented at the XVII International Congress of Audiology, Santa Barbara, USA, 1984).

TABLE 4. EAR, NOSE AND THROAT (ENT) HOSPITAL BEDS  
IN SELECTED COUNTRIES (1979-1981)<sup>1</sup>

Country	ENT beds (per million inhabitants)
Czechoslovakia	290
Sweden	164
Qatar	130
Algeria	47
Greece	38
Singapore	31
Jordan	16
Pakistan	10
Sudan	2.3
Viet Nam	2.3
Oman	1.7
Malaysia	0.6
Peru	0.4

37. Rehabilitation programmes for children with severe or profound hearing impairment are insufficient in developing countries. Adults with acquired hearing problems are also underserved. It may be estimated that in developing countries only a very small percentage of those in need receive adequate care. This considerably aggravates the condition and exacerbates the social and economic consequences for the individual, the family and the community.

38. WHO has developed a simple effective rehabilitation technology, which is now being applied in about 30 countries. Using this technology health workers at level 1 can implement a programme for the rehabilitation of people with a hearing impairment. This community-based programme needs to be strengthened and included in primary health care services everywhere.

#### VIII. COUNTRY INFORMATION

39. By the end of February 1986 about 30 countries had provided WHO with information regarding their ongoing programmes related to the prevention of deafness and hearing impairment. A number of countries have given examples of prevalence figures showing the extent of hearing impairment, and its causes in their countries. Descriptions have also been received of the type of preventive activities that are already undertaken or planned.

40. It is very difficult to draw any conclusions from this incomplete information. It seems desirable to give more attention to formulating and analysing the problem country by country. The situation is so diverse that great care has to be taken to individualize future programmes of national action.

41. Also it is obviously not possible to develop any set of comprehensive and specific suggestions for national action, in most areas, such as how to treat otitis media, genetic counselling, protection against high levels of noise, provision of hearing aids - as either there is insufficient scientific background, or the cost implications are unknown, or the country policies and priorities differ.

<sup>1</sup> Based on official statistics published in the World Health Statistics Annual, Geneva, World Health Organization, 1983. Separate statistics on ENT beds are available for 45 countries.



42. The conclusion of the country information is thus that many countries have already embarked on valid and effective programmes; these programmes should continue and be strengthened so that all populations can eventually be protected against hearing impairment. The second conclusion is that countries should cooperate in order to develop better and more appropriate approaches in areas where a consensus on technology and/or type of delivery system is lacking.

IX. INFORMATION FROM NONGOVERNMENTAL ORGANIZATIONS

43. About ten such organizations have provided WHO with information on their present activities and suggested activities for the future. Few of these organizations seem to have any activities in developing countries, but many have mentioned plans to set up research, manpower training programmes, work on technology, and possibly participate in efforts to provide prevention, such as rubella vaccination, etc.

X. PROPOSALS FOR STRENGTHENING MEASURES OF PREVENTION AND TREATMENT OF DEAFNESS AND HEARING IMPAIRMENT

44. Programme objective

To decrease the incidence and consequences of hearing impairment, especially in the profound and severe forms.

45. General approach

To develop and include in the health and other public services in all countries effective technologies aimed at the prevention of deafness and hearing impairment. Emphasis should be given to the services provided at the primary health care level.

46. Specific action needed

(1) Governments to:

- (i) support and strengthen studies and research in order to secure reliable data regarding the frequency and causes of hearing impairment and an assessment of the probable effectiveness of preventive, therapeutic and rehabilitative action;
- (ii) undertake information and public education campaigns to raise people's awareness of hearing impairment and its health and social consequences;
- (iii) initiate and maintain action aimed at reducing the incidence and consequences of hearing impairment, eventually providing full population coverage, especially regarding treatment of curable hearing impairment, immunization against diseases causing such impairment, genetic counselling, reduction of noise levels in the industry and transport sectors and supportive legislation;
- (iv) cooperate with WHO and nongovernmental organizations in order to develop better prevention of hearing impairment;
- (v) encourage the involvement of organizations of the hearing-impaired in prevention and rehabilitation;

(2) WHO to:

- (i) provide standards regarding terminology;
- (ii) conduct technical working groups, which could formulate guidelines regarding policies, strategies and plans for preventive action, general approaches and specific technology service delivery systems and evaluation;
- (iii) initiate, support and coordinate research and studies outlined above;

- (iv) contribute to better information and encourage action to reduce the incidence and consequences of deafness and hearing impairment by the widest possible publication of the facts and the urgency of actions;
  - (v) cooperate with governments requesting programmes aimed for the prevention of deafness and hearing impairment;
  - (vi) cooperate with intergovernmental organizations of the United Nations system and nongovernmental organizations wishing to further programmes for the prevention of deafness and hearing impairment.
- (3) Nongovernmental organizations of the hearing-impaired to:
- (i) strengthen their efforts to organize people with hearing impairments at the community and national levels;
  - (ii) seek a more active role in advising governments and authorities on the desirable actions and priorities for prevention, treatment and rehabilitation of hearing impairment and on interventions to decrease associated environmental factors;
  - (iii) increase the information - and the awareness - of the public on the causes and consequences of hearing impairment for the individual and society;
  - (iv) cooperate with governments, WHO and other organizations of the United Nations system and with other nongovernmental organizations, in order to initiate, develop, strengthen and maintain all the action required to achieve a reduction of the impact of hearing impairment;
- (4) Other nongovernmental organizations to:
- (i) undertake and support studies and research for the development of improved programmes for the prevention of deafness and hearing impairment, along the lines suggested.
  - (ii) undertake and support action to implement country programmes including the training of manpower at all levels;
  - (iii) inform the public on the various aspects of hearing impairment and its prevention;
  - (iv) cooperate with governments and other organizations, including WHO, in the action required to implement an effective programme for the prevention of deafness and hearing impairment.

47. Specific proposals for the period 1986-1989

Pending the provision of funds, the Organization might take the following action:

(1) Global and interregional activities:

- (i) Establishment of a new panel of experts for the prevention of deafness and hearing impairment;
- (ii) Convening of a scientific group to recommend policies, strategies, approaches, research projects on technology and delivery systems and evaluation criteria;
- (iii) Development of a medium-term programme and detailed action plans for the remaining part of the Seventh General Programme of Work and for the period of the Eighth;
- (iv) Establishment, in conjunction with the regional offices, of a network of collaborating centres which could design, implement and evaluate educational programmes for various levels of health personnel involved;



participation in or conduct of research programmes; clearing house activities for information; development testing and evaluation of audiometers, otoscopes and hearing aids, etc.;

(v) Convening of a meeting with nongovernmental organizations and donor agencies to encourage such organizations to set up, increase and provide funding for the prevention of deafness and hearing impairment in developing countries;

(vi) Continued encouragement and coordination of the various regional and country activities.

(2) Regional activities:

(i) Stimulation and coordination of activities within countries of the region;

(ii) Allocation of funds for research;

(iii) Holding of regional seminars to raise the awareness of the importance of prevention, to discuss guidelines for country-level activities and to translate such guidelines into practical action in the countries of each region in the context of health for all.

(3) Country-level activities:

(i) Through WHO programme coordinators who would discuss the matter with ministries of health, the survey of ongoing activities using a standard questionnaire (to be prepared on a global basis), reporting back to regional offices and WHO headquarters;

(ii) Encouragement of efforts to include delivery of the relevant care through health services, as part of primary health care, and through programmes in other sectors;

(iii) Channelling of reports for research projects to regional offices and to donors.

## XI. TRENDS FOR THE EIGHTH GENERAL PROGRAMME OF WORK

48. Research on the prevention of deafness and hearing impairment is at least 10 years behind similar research in the area of prevention of blindness. Efforts should therefore be made to retrieve lost time as a matter of urgency. It may be possible to propose more appropriate and effective technologies by about 1992, and to start implementing larger-scale service delivery in the context of health for all by about 1993. Priority would be given to those services which are likely to have the greatest impact on the largest number of people.

49. Tentative targets for the year 2000 may include, for example, reduction of the incidence of congenital deafness by 20%, reduction of hearing impairment caused by otitis media by 30%; and the provision of hearing aids to 30% of those needing such aids in developing countries. It is too early, however, to say whether such targets are realistic.

50. The achievement of these or similar targets will call for concentrated research efforts during the period of the Eighth General Programme of Work, and the establishment of a management system to monitor the development of the programme and evaluate whether or not targets are met.

## XII. COST IMPLICATIONS

51. There is no regular budget provision for a programme on the prevention of deafness and hearing impairment and so, in order to make such a programme operational, extrabudgetary funding is required. Needs at global level have been estimated at a minimum of US\$ 205 000 for each of the two financial periods up to the end of the Seventh General Programme of Work (1986-1987 and 1988-1989) in order to give the programme a better possibility of developing the full-scale efforts needed.





THIRTY-NINTH WORLD HEALTH ASSEMBLY

Provisional agenda item 28

WHO ACTIVITIES FOR THE PREVENTION AND CONTROL OF ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS)

Report by the Director-General

Acquired immunodeficiency syndrome (AIDS) has become a matter of increasing concern in a number of countries, particularly in Europe and North America. This report, updated from a report by the Director-General to the seventy-seventh session of the Executive Board in January 1986 (document EB77/42), assesses the current situation, describes the activities being undertaken by WHO, and indicates the course of future action to understand and control AIDS, including assurance of safe blood and blood products.

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Table with 2 columns: Topic and Page. Topics include Introduction (1), WHO network of collaborating centres (3), WHO programme on AIDS (3), Exchange of information (3), Preparation and distribution of guidelines (4), Assessment of commercially available LAV/HTLV-III antibody test kits (4), Cooperation with Member States (6), Advice to Member States on the provision of safe blood and blood products (6), Coordination of research (7), Programme structure (9).

Introduction

1. Since the first recognition of the acquired immunodeficiency syndrome (AIDS) in 1981, over 22 069 cases have been reported, mainly from the industrialized countries. Approximately half of these cases were reported in 1985 and over 75% were reported during the 1984-1985 biennium. More than 80% of cases recorded to date have been reported from the USA.





2. The number of cases reported to WHO up to 25 March 1986 is as follows:

<u>Continent</u>	<u>Number of cases</u>	<u>Number of reporting countries</u>
Africa	31	5
Americas	19 756	43
Asia	46	10
Europe	2 053	23
Oceania	183	2
<b>TOTAL</b>	<b>22 069</b>	<b>83</b>

There have been relatively few cases from countries in Asia and Oceania (except Australia). Recent information indicates that AIDS may be a serious public health problem in tropical Africa; estimated incidence rates in some central African cities are comparable to those in New York or San Francisco, and cases have been identified in residents or migrants from over a dozen African countries.

3. In North America, Europe and Australia, homosexual men account for at least 70% of the total detected AIDS cases. The disease has also been noted in intravenous drug abusers; haemophiliacs receiving blood products; recipients of blood transfusion; heterosexual partners of patients or members of groups at increased risk of infection; and infants born to infected mothers.

4. Cases of AIDS will still occur among the already infected haemophiliacs and those who have received contaminated blood transfusions; further infections through blood or blood products can now be greatly reduced by screening blood donations for antibody to the LAV/HTLV-III virus. Studies undertaken in the Caribbean and central Africa and among emigrants from these countries show that the disease is occurring mainly in the heterosexual population. Heterosexual contact in these populations is a major risk factor for transmission of infection.

5. The etiological agent of AIDS is a retrovirus described in the scientific literature as LAV (lymphadenopathy-associated virus), HTLV type III (human T leukaemia virus or human T-lymphotropic virus, type III), or ARV (AIDS-related virus). The definitive name will be a matter for approval by the International Committee on Taxonomy of Viruses in accordance with the rules governing the nomenclature of viruses. In this report the virus will be referred to as LAV/HTLV-III, which combines the two most widely used names.

6. The virus has a specific tropism for the OK T4+ subset of T lymphocytes and perhaps to an, as yet, undefined fraction of this subset. The virus has also been shown to be present in brain tissue of some patients, but it is not yet clear which types of central nervous system cells are infected. The basis of the viral tropism for certain lymphocyte populations lies in part in the binding of the viral glycoprotein to the T4 molecule at the surface of the lymphocyte. The virus replicates in actively dividing T4 lymphocytes and can also be grown in cell lines derived from T or B lymphocytes. Like other retroviruses, the virus can remain in lymphoid cells in a latent, unexpressed state, and can be activated by such chemical agents as halogenated pyrimidines.

7. LAV/HTLV-III has been isolated from blood and semen and, at much lower titre and only from a small proportion of infected persons, from saliva, tears, breast milk and urine. The virus is also likely to be isolated from some other body fluids, secretions and excretions. Epidemiological evidence has implicated only blood and semen in transmission. Modes of transmission include sexual contact, parenteral exposure to blood and blood products, and directly from an infected mother to child before, during or shortly after birth. In the industrialized countries, intravenous drug abuse, and its accompanying problems associated with the sharing of contaminated needles, represent a major mode of transmission for LAV/HTLV-III infection. In the developing world, however, this represents a minor risk



factor, if any. On the other hand, the use of unsterilized syringes and needles within and outside the health programme and the use of unsterilized instruments for tattooing and for scarification (for both ritual and medical purposes) poses a definite risk of transmission. There is no evidence that the virus is spread through casual contact with an infected individual, including contacts in a family setting, schools or other groups living or working together. Large prospective studies on health care workers in contact with the blood of infected patients through needle-stick injuries or mucosal exposure have documented only a single case of infection; two other cases are being investigated. There is no evidence of transmission by blood-sucking insects, food or water, or airborne or fecal/oral routes.

8. Studies of recipients of blood transfusions who developed AIDS show a long interval between exposure to the infection and onset of the disease. Mean intervals of 12 months in children and 29 months in adults have been noted. Estimates based on mathematical models suggest even longer incubation periods. The clinical outcome of known infection with LAV/HTLV-III within a period of 2-5 years of observation is as follows: approximately two-thirds will have no evidence of ill health; the remaining one-third will develop illness varying in severity from mild to extremely serious.

#### WHO network of collaborating centres

9. A meeting on AIDS was organized by WHO on 18-19 April 1985, immediately following the International Conference on Acquired Immunodeficiency Syndrome, Atlanta, GA, USA. The participants in the WHO meeting reviewed the information presented at the Conference and assessed its international health implications.<sup>1</sup> A key recommendation they made called on WHO to "establish a network of collaborating centres with special expertise in the field".

10. WHO acted on this recommendation by initially establishing a network of collaborating centres. The directors of these collaborating centres met in Geneva on 25-26 September 1985 to assess the up-to-date worldwide impact of AIDS and to advise the Organization on the development of a programme on AIDS in which they would take an active part. The directors of the WHO collaborating centres again met on 16-18 December 1985 to consider issues related to the implementation of this programme and to outline areas in which they would be most effective in supporting the WHO programme.

#### WHO programme on AIDS

11. The programme has the following components:

- (1) Exchange of information;
- (2) Preparation and distribution of guidelines, manuals, educational materials for the public, etc.;
- (3) Assessment of commercially available LAV/HTLV-III antibody test kits; development of a simple, inexpensive test for field application; and establishment of WHO reference reagents;
- (4) Cooperation with Member States in the development of national programmes/actions for the containment of LAV/HTLV-III infection;
- (5) Advice to Member States on the provision of safe blood and blood products;
- (6) Coordination of research, in particular on: (a) the development of therapeutic agents and vaccines; and (b) simian retroviruses.

#### Exchange of information

12. An important component of the programme is the participation of Member States and WHO collaborating centres on AIDS in the collection of data on the incidence of AIDS and the transmission of this information to WHO headquarters on a regular basis. Wherever possible, information on the gender, age, recognized risk factor (if any) and major clinical features

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<sup>1</sup> See Bulletin of the World Health Organization, 63(4): 667-672 (1985).



should also be provided. For the systematic collection and collation of these data a standard form has been provided by WHO. At present there is a three-tier system of reporting: some countries have a weekly report, usually within an already established weekly epidemiological report; countries with a sizeable AIDS problem report monthly; and others report every quarter or even less frequently or irregularly.

13. WHO collaborating centres on AIDS provide data on the epidemiology and sero-epidemiology of LAV/HTLV-III infection in their regions to the regional offices and to WHO headquarters.

14. The WHO regional offices provide regular updates on: (a) the status of testing for LAV/HTLV-III infection in individual countries in their region; (b) legislation and policies introduced by Member countries to control the spread of the infection. All pertinent information is published in summary form on a monthly basis.

15. Meanwhile, because of the rapid changes in the world picture of AIDS and the need to involve the media for fast dissemination of information, updates and pertinent information published in the Organization's Weekly epidemiological record are provided, whenever necessary, to the WHO regional offices and the media by infonet, by facsimile or by telex. At the same time they are summarized on the automatic telex reply service. Ministries of health are provided with up-to-date information on an ad hoc basis in the form of a WHO Media Service "In point of fact".

16. Following WHO or other international meetings, special WHO reports are widely disseminated in extenso, and press releases are prepared for the public (and the media).

#### Preparation and distribution of guidelines

17. Although drugs to prevent and ameliorate disease manifestations of LAV/HTLV-III infections or a vaccine to protect those at highest risk of acquiring infection are the immediate goals of research in many countries, they are unlikely to be available for wide public health application within the immediate future. Meanwhile, prevention of AIDS will depend totally on risk reduction programmes based on information/education. Credibility of these programmes depends heavily on laboratory-based diagnosis of the disease and the understanding of the natural history of the virus in specific countries and among specific populations. Prevention programmes can be undertaken immediately, based on current knowledge and best public health judgement. Guidelines on AIDS are being used effectively and are available from countries in North America, Australia and Europe. WHO has collated a large number of available guidelines which have been prepared in a booklet and made available worldwide. It is understood that these guidelines will require periodic up-dating: the Weekly epidemiological record will be used for this purpose. Two types of guidelines are of high priority, namely:

(1) Guidelines for the diagnosis, surveillance, prevention and control of infection with LAV/HTLV-III;

(2) Guidelines and manuals for health care personnel and other individuals who through their profession may be exposed to infection with LAV/HTLV-III.

18. Prototype educational materials for high-risk groups and the general population, including adolescents, explaining mechanisms of transmission and possible preventive measures, are at present being explored; to be effective materials will have to be carefully tailored to meet specific needs. A meeting on educational strategies for the prevention and control of AIDS will be convened by WHO in June 1986. Participants at this meeting will review potential media and public educational approaches and recommend communication strategies to Member States in their efforts to control this problem.

#### Assessment of commercially available LAV/HTLV-III antibody test kits

19. Infection with LAV/HTLV-III may be entirely silent for many years or may cause initially only an acute disease of limited duration. The laboratory diagnosis of an infection with LAV/HTLV-III therefore becomes of utmost importance. Such an infection may be identified by



detection of antibodies to LAV/HTLV-III antigens (anti-LAV/HTLV-III), isolation of LAV/HTLV-III from blood tissues or body fluids, or identification of viral components by immunological or molecular techniques.

20. For routine large-scale testing, only the first approach, i.e. measurement of antibody to LAV/HTLV-III, is practical. The other techniques are used primarily for research purposes. Enzyme-linked immunosorbent assay (ELISA) for antibody detection is the method most frequently used for routine testing for LAV/HTLV-III infections. LAV/HTLV-III antibodies usually develop within weeks (rarely months) after infection and remain demonstrable possibly for life. LAV/HTLV-III antibodies and virus are often found simultaneously in the same individual, and a person with such antibodies must be considered to be a potential virus carrier.

21. ELISA test systems are highly sensitive (> 98%); however, not all reactive sera are indicative of LAV/HTLV-III infections because of non-specific reactions.

22. All sera reactive in an ELISA test should be tested in another system. Immunoblots (Western blots) have been most frequently used for this purpose, but other tests are also under evaluation. Non-specific reactions may also occur in the immunoblot assays, and careful evaluation by experienced laboratory personnel is needed.

23. In general, the percentage of "false positives" increases together with the sensitivity of the test systems. The acceptance of a relatively high percentage of "false positives" at this time appears prudent in order to detect all truly positive specimens among blood donors. A more specific, but also less sensitive assay system may be more appropriate for some epidemiological studies when confirmatory tests are not readily available.

24. Some laboratories also use immunofluorescence tests with LAV/HTLV-III infected and non-infected cells. Although this test appears somewhat less sensitive than immunoblot techniques, it is nevertheless a valuable additional test system which should be evaluated further.

25. To accelerate progress in the field of laboratory testing, WHO is undertaking the following:

(a) The establishment of international reference sera, available in a large number of aliquots, with antibodies to LAV/HTLV-III, for use in evaluating the sensitivity of immunoassays in respect to individual viral antigens and calibrated in antibody units. In addition, an international proficiency panel needs to be established;

(b) The distribution of LAV/HTLV-III virus for control purposes and for development of more simple and less expensive antibody tests, primarily for use in laboratories with limited technical facilities;

(c) Collection and characterization of additional isolates of LAV/HTLV-III and their free exchange through the WHO collaborating centres on AIDS;

(d) Development and characterization of panels of monoclonal antibodies to specific epitopes of LAV/HTLV-III and cDNA clones of reference for diagnostic and research work on AIDS.

26. The availability of screening tests for antibody to the LAV/HTLV-III virus, coupled with the finding that in some countries the large majority of those with the disease are either male homosexuals or intravenous drug abusers, raises the possibility of misuse of the test. Current test kit configurations have aimed at a very high sensitivity at the expense of some specificity in order to ensure the exclusion of blood which has any possibility of carrying the LAV/HTLV-III virus. Used in this way, the antibody test serves a clinically useful purpose, and the public health benefits in terms of a safe blood supply are generally perceived to outweigh the difficulties associated with false-positive reactions. It is therefore important for public health officials to be alert to the appropriate uses and the potential for misuse of the LAV/HTLV-III antibody test. In addition to screening blood, the antibody screening test has played an important role in research on the epidemiology of the disease. It can also be helpful as an adjunct in the diagnosis of persons with early signs



and symptoms associated with AIDS, since the predictive value of positive test results increases substantially when it is used in persons with an increased risk for AIDS such as persons with symptoms. Meanwhile, WHO will organize collaborative studies for the comparative evaluation of candidate reference sera.

27. Information on the performance characteristics of commercially available antibody test kits under field conditions is provided by the network of WHO collaborating centres. The results of these studies, carried out under WHO auspices, will be made available to Member States. Furthermore, WHO may enter into negotiations with a limited number of commercial producers to obtain kits at a price lower than the market price in the industrialized countries. These kits could then be made available to Member States.<sup>1</sup> As indicated at the Meeting of Manufacturers of AIDS Test Kits, held in Geneva on 31 January 1986, new generations of screening tests will have to be simple, inexpensive, and capable of being performed and read with minimal laboratory equipment. The kits should also be stable and capable of use under a wide range of conditions in the field. Manufacturers of commercial test kits should also provide, in the test specification, information on the origin and characteristics of the strain of LAV/HTLV-III virus employed in the test and the cell line used for its production. The degree of purity of the antigen may also be a relevant factor. WHO, on the other hand, should consider the development of an internationally acceptable strain nomenclature system for LAV/HTLV-III viruses. The nomenclature system should include, for example, place of origin of isolate, serial number of the strain and its year of isolation. The clinical state of the persons from whom the isolate is made may also be a relevant factor in strain nomenclature.

#### Cooperation with Member States

28. WHO will undertake, on request, technical cooperative programmes with Member States. These could include, among other activities, the following:

- (a) Organizing national and intercountry symposia/workshops on the containment and prevention of AIDS. Workshops of this type have been held in Africa, the Americas, South-East Asia, Europe and the Eastern Mediterranean Region within the last five months;
- (b) Providing specific technical consultancies;
- (c) Promoting the development of national and regional laboratories for screening for LAV/HTLV-III infection and confirmation of results, providing training and follow-up in developing national/regional capabilities. Workshops of this type have been held or are being planned in the immediate future in the African, European and Eastern Mediterranean Regions;
- (d) Establishing a mechanism to assist countries in obtaining the necessary material and equipment to establish laboratory diagnosis and epidemiological surveillance of AIDS.

#### Advice to Member States on the provision of safe blood and blood products

29. Several specific recommendations were made by the WHO group which met in November 1983, at which point the etiologic agent of AIDS had not yet been discovered.<sup>2</sup> Those recommendations remain valid even though additional measures to increase the safety of blood and blood products are now possible:

- educate the public and donors about AIDS;
- exclude donors who belong to high-risk groups;
- avoid non-essential use of blood and blood products.

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<sup>1</sup> The mechanism has still to be established.

<sup>2</sup> Bulletin of the World Health Organization, 62(3): 419-432 (1984).



30. In addition, the 1983 WHO meeting stated that, based on the information available at that time, albumin and immunoglobulin products are considered safe, as are hepatitis B vaccines which meet the WHO Requirements. Since then over 190 cases of blood-related AIDS have occurred in the USA and Europe. The identification of the LAV/HTLV-III virus in 1983/1984 led to the rapid development of screening tests for antibody to the virus, and the use of such tests has enabled blood collecting facilities to eliminate units of blood with antibody and which carry a risk of transmitting the LAV/HTLV-III virus. Initial results of screening in the USA showed that about 0.25% are positive in the screening test, but that when additional testing is done (such as the Western blot test), only about a quarter can be confirmed to have antibody to the virus.

31. Screening does, therefore, raise important issues relating to the use of "confirmatory tests" and the quality of data that should be available before donors are notified about test results.

32. In addition to screening donors for antibody to the AIDS virus, the introduction of appropriate heat treatment in the production of factors VIII and IX has apparently eliminated the risk of transmitting AIDS through those products, and the WHO consultants who met in April 1985 recommended the use of such products as a means of controlling the spread of AIDS in haemophilia patients.

33. That group also recommended that:

- where feasible, donors should be screened for antibody;
- antibody-positive units should not be used;
- donors should be informed about the screening in advance of donating;
- donor education and exclusion of high-risk groups should be continued.

34. WHO is convening a meeting in Geneva from 14 to 16 April 1986 to review data on donor screening and product safety. In addition, there will be discussions on issues related to donor screening such as confirmatory tests and donor notification. A summary of the proceedings of the meeting will be submitted to the Health Assembly in May 1986.

35. Following the conference, a smaller group of experts will meet to develop an updated set of WHO recommendations. Their report will be made available to the Assembly.

36. Although AIDS has become an increasingly important problem, it should not obscure the fact that other infectious agents which can be transmitted by blood are also of significance. Most important among those are the human T-cell leukaemia agent, HTLV-I, and non-A, non-B hepatitis virus.

37. It is especially important, in view of the potential for transmitting infectious agents through blood, that re-use of unsterile needles be strongly discouraged. Limited epidemiological studies and extensive experience with the use of jet-injection guns for mass inoculation in many millions of individuals over more than 20 years indicate that the transmission of parasitic, mycotic, bacterial and viral diseases, including hepatitis B and hepatitis non-A, non-B, from human to human by this means has not been confirmed. However, limited laboratory studies evaluating the risk of transmission from different types of jet injectors are at present under way. It is anticipated that WHO will support more extensive research studies in this area.

#### Coordination of research

##### Antiviral agents

38. Major research efforts are under way to identify potentially useful antiviral agents through a programme of in vitro screening. Drugs with in vitro antiviral activity undergo small-animal testing to determine toxicity and appropriate dosage and are scheduled for a Phase I clinical trial. It is desirable to seek agents which can be administered orally and which can pass the blood/brain barrier. Suramin, ribavirin, foscarnet, HPA 23, rifamycins,



interferons, and azidothymidine (3-azido-3-deoxythymidine, AZT, BW A509U) are currently being evaluated clinically. Extensive studies have been performed with suramin and antiviral effects have been observed. However, considerable toxicity has been observed with suramin, particularly in patients with immune deficiency and liver abnormalities. This emphasizes the need for caution in the testing of potent drugs in immuno-compromised patients. Suramin derivatives of lower toxicity are being tested.

39. Studies are continuing in Europe and have been initiated in the USA with HPA 23, including longer-term treatment (three months) and virus isolation studies. Inhibition of viral replication has been observed in these studies. Phase I clinical studies to evaluate toxicity with azidothymidine and ribavirin have been concluded. These drugs appear relatively safe at the dosage tested, and Phase II studies to evaluate efficacy will begin shortly. Studies with foscarnet and ansamycin are being initiated in the USA. Small studies in Europe with foscarnet have also been initiated. Studies on interferon alfa are continuing in order to determine its role as an antiviral agent. Interferon gamma as well as interleukin-2, thymic hormones and other immuno-modulators are under investigation; future studies of combined treatment with antiviral agents and immuno-modulators are anticipated. Further approaches to combined therapy may involve:

- (a) antivirals acting on different steps of viral replications; as well as
- (b) antibodies directed to:
  - cell receptors, or
  - viral proteins responsible for the cytopathic effects of the virus.

40. Candidate drugs require careful study within the framework of classical drug evaluation and under the guidelines of national control authorities. Once a candidate agent is identified and preclinical studies indicate safety, studies to determine the pharmacology, toxicity and tolerated dosages must precede studies to determine benefit. Anecdotal studies claiming benefit for drugs without evidence of statistically proven efficacy do considerable harm to the patients by creating false hope and to therapeutic trials in general.

41. If at all possible, placebo-controlled studies in ARC patients should be encouraged. Such studies will yield an answer on the efficacy of a drug more quickly and in fewer patients than the use of historic controls.

42. WHO, through its network of collaborating centres, can play an important role in keeping close watch on developments in the area of antivirals and act as coordinator of collaborative action and/or clearing-house for information.

#### Vaccine development

43. The vaccine development efforts are described in more detail in an earlier report.<sup>1</sup> Vaccine candidates produced by extraction from the whole virus, chemical synthesis, DNA recombinant technology and insertion of gene products into virus vectors have been inoculated into animals. Currently efforts are concentrated on attempts to increase the immunogenicity of the products and on identifying the constant and conserved genetic portions of various isolates. The neutralizing capabilities of the antibody produced are being determined by appropriate in vitro assays.

44. One important issue involves the matter of viral heterogeneity. Considering the diversity of membrane antigen configurations in various viral isolates, it will be necessary to determine if immunization with a given preparation is capable of evoking antibodies protective against all virus variants. Work on cellular receptors is in its initial stages but may be promising.

45. As research on vaccine development is being pursued, efforts are being made to improve the methods available for vaccine evaluation. These include developing better assays for virus neutralization and developing the most appropriate animal models. Work in all of these areas is proceeding rapidly and data should be available for presentation and discussion in the coming months.

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<sup>1</sup> See Bulletin of the World Health Organization, 63(6): 1003-1007 (1985).

46. As with antivirals, WHO can play a major role in coordinating collaborative action on vaccines as well as serving as a clearing-house for information.

T-lymphotropic retroviruses of simians

47. T-lymphotropic retroviruses of simians have been described which show some antigenic relationships with LAV/HTLV-III viruses of human origin.<sup>1</sup> These agents provide potentially valuable models for the study of control and treatment of AIDS.

Epidemiology

48. Because of its potential as a worldwide public health problem, there is a need to study the epidemiology of this disease in a variety of settings, especially in countries where there is a different mix of background endemic diseases which may influence the clinical expression and outcome of AIDS and LAV/HTLV-III infections. In addition, the absence of this information particularly impedes the development of targeted intervention strategies, especially those related to public information/education.

Behavioural aspects

49. Sharing of needles among intravenous drug abusers is becoming a high risk factor in a number of large cities in Europe. Attempts will be made to evaluate the use of oral drugs in support of changing drug addiction patterns.

Programme structure

50. Several divisions in WHO headquarters, Geneva, and corresponding structures in the regional offices take an active part in the programme; the overall coordination is provided by the Division of Communicable Diseases at headquarters. The Secretariat will be strengthened to cope with the increasing requirements of the WHO programme on AIDS in 1986-1987.

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<sup>1</sup> Weekly epidemiological record, 35: 269-270 (1985).



THIRTY-NINTH WORLD HEALTH ASSEMBLYProvisional agenda item 39.5

COLLABORATION WITHIN THE UNITED NATIONS SYSTEM:  
EMERGENCY HEALTH, MEDICAL AND SOCIAL ASSISTANCE TO DROUGHT--  
FAMINE - AND OTHER DISASTER-AFFECTED COUNTRIES IN AFRICA

Report by the Director-General

This report provides information on the critical situation in Africa in response to resolution WHA38.29 adopted in 1985. Details of the problems of the affected countries and the action taken by WHO were provided to the seventy-seventh session of the Executive Board (January 1986) in document EB77/35 Add.1, which is transmitted to the Health Assembly as the annex to this document. More recent information on the situation in the affected countries, as well as on the initiatives which have been taken is presented below. While the situation has improved for many of the countries originally affected, the emergency - with particular reference to unmet needs for health care, drinking-water and sanitation - is far from over.

1. Latest reports from the United Nations Office for Emergency Operations in Africa (OEOA), indicate that the general situation has improved for many of the 20 African countries originally designated as most seriously affected. Five countries, however, remain in the "seriously affected" category and require substantial food aid as well as health care and other relief assistance. These are Angola, Botswana, Ethiopia, Mozambique and Sudan. OEOA estimates that more than 17 million people will need relief aid into 1986, including some three million destitute and displaced. It is likely that these countries will receive the main focus of attention by the OEOA and the international community in the coming months.
2. An analysis of the information from OEOA however, shows that other countries have not been able to improve their situation as satisfactorily as the above statement would suggest, particularly with regard to health needs. Seven countries of the original 20 have not met even half of their emergency health needs, and three of them - Angola, Rwanda and Senegal - have covered less than 25% of their health needs. Another index, the coverage achieved for drinking-water and sanitation, reveals that other countries in the group have fallen far short of meeting their needs. Seven countries again were able to satisfy less than half of their needs in this vital area, and five of these covered only 25% or less of their drinking-water and sanitation requirements - Mozambique, Rwanda, Senegal, Cape Verde and Lesotho (see table in paragraph 7 below).
3. It is clear that there are significant pockets where food shortages still lead to hunger and undernutrition, and food aid and other emergency assistance will have to be continued in 1986. Surveillance of the health and nutritional situation will have to be maintained in the majority of the States originally affected, and appropriate responses must be planned and carried out. Special attention will be required for displaced people. The diversion of national recurrent budgetary provisions towards emergency relief has severely affected the normal operations of the national health services. In March 1986 the drought-affected countries were invited to formulate plans for rehabilitation of the national health services as an interim phase in the development of these services within the framework of health for all. The support measures extended by WHO will have to be reinforced in order to turn the tide in those communities which have not yet found full relief from their serious circumstances.





4. In recognition of the continuing gravity of the situation, the United Nations General Assembly will meet in special session in New York on 27-31 May 1986 to consider the critical economic situation in Africa. In preparation for this special session, special meetings of the Organization of African Unity and of the United Nations Economic Commission for Africa were held in early 1986 in Addis Ababa. A health policy statement by WHO was made available, to reflect the position of the Organization on health issues in emergency situations as well as on development initiatives which must follow to support the Member States in measures to avert a continuation of the critical situation. Reference to the crucial health conditions will also form part of the report of the Secretary-General of the United Nations to the forthcoming special session of the General Assembly.

5. Following its discussion on the economic dimension of the Global Strategy for Health for All, and in particular on the critical situation in Africa, the Executive Board at its seventy-seventh session in January 1986 adopted resolution EB77.R17 on health and development in Africa<sup>1</sup>. The Board further recommended that the text of that resolution be transmitted to the Organization of African Unity and the Secretary-General of the United Nations. A report on the outcome of the special session of the United Nations General Assembly will be submitted to the Executive Board at its seventy-ninth session in January 1987. The formulation of the rehabilitation plans mentioned above are an integral part of WHO's support to the countries in this process.

6. WHO is continuing a number of specific efforts in the African and Eastern Mediterranean Regions, particularly in coordinating the support in the health sector to Ethiopia and Sudan, and it is following up the request made by the governing bodies to intensify the Organization's role in setting in motion better emergency preparedness and management. A regional emergency preparedness and management programme has been prepared for the Eastern Mediterranean and will be introduced to the regional staff and country representatives in July 1986. The emphasis is on support to the Member States in strengthening their capacities for emergency preparedness and management. For this purpose, a training programme was launched in Sudan in March 1986 and will be expanded within a national programme to be formulated with the support of WHO. The emergency preparedness and management programme for the African Region, established in August 1985 and introduced to the regional staff and country representatives in November 1985, is also being implemented. A regional training course for high-ranking national officers of French-speaking countries of Africa took place in Brazzaville in March 1986, a similar training programme for English-speaking countries was held in April in Addis Ababa. The activities that follow these courses will be supported by WHO. In April 1986, WHO convened an inter-agency meeting of experts in Geneva to discuss "epidemiological assessment of disasters and their health consequences", with a strong focus on the situation in Africa.

7. The following table gives an overview of the position of the most affected countries as reported by OEOA for January 1986.

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<sup>1</sup> Document EB77/1986/REC/1, page 19.



DROUGHT AND FAMINE IN AFRICA: AFFECTED COUNTRIES  
AS AT JANUARY 1986<sup>1</sup>

Most seriously affected countries	Countries with <25% of the emergency health needs covered	Countries with 25%-49% of the emergency health needs covered	Countries with <25% of the water and sanitation needs covered	Countries with 25-49% of the water and sanitation needs covered
Angola Ethiopia Botswana Mozambique Sudan	Angola     Rwanda Senegal	Ethiopia  Mozambique   Burkina Faso Mauritania	Mozambique  Rwanda Senegal   Cape Verde Lesotho	Angola       Burkina Faso

<sup>1</sup> Reported by OEOA in January 1986.



EXECUTIVE BOARD

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Provisional agenda item 26.1

COLLABORATION WITHIN THE UNITED NATIONS SYSTEM:  
EMERGENCY HEALTH ASSISTANCE TO DROUGHT- AND FAMINE-AFFECTED  
COUNTRIES IN AFRICA

Report by the Director-General

This report updates information provided to the thirty-eighth World Health Assembly in May 1985 on the critical situation in Africa (document A38/16). In view of the continuing need for support, the report is being submitted to the Executive Board in advance of further detailed reporting to the Thirty-ninth World Health Assembly in response to the Health Assembly's request in May 1985 (resolution WHA38.29).

While drought conditions have improved in most of the 20 African countries designated as most seriously affected, severe malnutrition and other debilitating factors have left much of the populations in a precarious state of health - a condition which is likely to persist long after the rains have fallen. The emergency response has been generous but not always timely; moreover, the affected countries' capacity to effectively absorb the high levels of external assistance required remains limited, again signalling the importance of long-term development of health systems, logistics, and general management capability if a recurring cycle of crisis situations is to be averted. As reports of encouraging rainfall become more common, it is likely that interest on the part of international public opinion will wane. This illustrates the importance for the countries directly affected to refine their priorities and to adapt their national health services infrastructure, in order to make the most effective use of scarce domestic and external resources.

In this report emphasis is placed on support to a comparatively small number of African countries, not only in view of the magnitude of the crisis in these countries and the large numbers of people affected but also because some of the actions taken may be applicable in other vulnerable countries.

A candid statement of problems and unresolved issues is also included in order to inform the Board on matters which still need to be solved.



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I. CURRENT DIMENSIONS OF THE SITUATION AND GLOBAL RESPONSES

Current situation

1. Of the 20 most seriously affected countries mentioned in the Director-General's report to the Thirty-eighth World Health Assembly in May 1985 (document A38/16), the United Nations Office for Emergency Operations in Africa (OEOA) reports that the emergency situation remains serious in at least 12 of them: Angola, Botswana, Burkina Faso, Cape Verde, Chad, Ethiopia, Lesotho, Mali, Mauritania, Mozambique, Niger, and Sudan.<sup>1</sup> OEOA information indicates that, as of 1 October 1985, between 25 and 30 million of the people living in these countries are still affected by the current drought-induced crisis, of whom 4.5 million are displaced persons. While rains have begun to fall in many places, harvest yields are by no means satisfactory throughout the continent. Depleted manpower and inadequate seed stocks may adversely affect food production even in those areas where rainfall is back to normal, and normal harvests in some localities do not ensure that adequate food supplies are available elsewhere. Transport constraints remain a major problem, with the long awaited rainfall making many roads impassable and thereby rendering overland distribution of food surpluses and relief supplies even more difficult.

2. WHO's Regional Offices for Africa and the Eastern Mediterranean report that the substantial efforts being made by the affected countries to promote primary health care have, with the assistance of WHO and UNICEF, helped to bring outbreaks of contagious diseases under control. However, even with the gradual replenishment of food stocks, the cumulative health effects of chronic and acute malnutrition can be expected to persist. The most prevalent diseases amongst the affected populations continue to be those of the gastrointestinal tract (diarrhoeal diseases being very common amongst children), upper respiratory tract, and eyes. National nutrition status reports indicate that at least half of the children among the drought-affected populations suffer from protein-energy malnutrition. The infant mortality rate varies between 100 and 200 per thousand, and infant deaths constitute between 40% and 60% of total deaths.

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<sup>1</sup> The remaining eight countries included in the original OEOA list of 20 most seriously affected are Burundi, Kenya, Rwanda, Senegal, Somalia, United Republic of Tanzania, Zambia, and Zimbabwe.



3. During 1986, attention will have to be focused on three major relief endeavours: supplementary feeding programmes for vulnerable groups, special health care and protection within high-density population centres, and special provision for drinking-water supplies and sanitation. Water supplies are becoming increasingly critical throughout Africa, and emergency assistance will continue to be needed for increasing drinking-water sources, improving water quality, and improving basic sanitary conditions.

4. Drought is now recognized as a quasi-permanent feature of the African continent and intensified efforts will be needed - not only for relief, but also for health rehabilitation and development - if widespread famine and disease are not to become recurrent features.

#### Objectives for action

5. In accordance with the Global Strategy for Health for All, WHO is placing particular emphasis on strengthening national emergency health response capacities, including preparedness. It has done so through the organization of missions of experts to review emergency health needs; the assignment of experienced health staff to support national coordination, programme design and implementation, and other aspects of emergency health management; and the provision of emergency supplies and equipment.

6. This, in turn, has entailed a need for WHO to strengthen its own emergency response mechanisms at regional and global level. These include the formulation of regional emergency preparedness and management programmes, the issue of guidelines for WHO representatives/programme coordinators and their training, and the improvement in the flow of information between all levels of the Organization. Much remains still to be accomplished in this regard. In May 1985, the Health Assembly provided valuable guidance in this respect by recognizing "the need to intensify WHO's technical cooperation at the country level to enable the Member States to enhance their disaster preparedness, including measures to prevent and manage malnutrition, anaemia and outbreak of epidemics".<sup>1</sup>

#### Global response mechanisms and the role of WHO

7. The international community is according increased importance to the linkages between emergency relief, recovery, rehabilitation of existing services and long-term infrastructure development. It is generally agreed that emergency relief, albeit of immense importance in immediate life-saving, is only a short-term palliative, and that national management capabilities have to be strengthened if countries are to avoid the recurrence of new crisis situations. Disaster preparedness is an essential component of medium- and long-term planning, and helps to illustrate the relationship between relief and development.

8. WHO continues to work alongside UNDP, UNDRO, UNICEF, UNHCR, FAO, WFP, and other emergency-related entities of the United Nations system, under the overall coordination of multilateral and bilateral assistance by OEOA. WHO participates, through its New York offices for liaison with the United Nations and UNICEF, in the weekly meetings of the African Emergency Task Force (AETF) and in the periodic meetings of the United Nations Informal Working Group on Linkages between Emergency Relief and Development.

9. WHO headquarters' efforts continue to promote closer, more effective working arrangements with other organizations, including UNDRO, UNHCR, the International Committee of the Red Cross, and the League of Red Cross and Red Crescent Societies, as the result of which joint training efforts and greater WHO input into the health aspects of these agencies' operations are being facilitated. Communication between these agencies has been strengthened, by encouraging regular contacts at working level. Greater effectiveness is also attained through the assignment of WHO staff to operational relief agencies, as in the case of UNHCR.

10. With the aim of producing better health assessments at country level, the Director-General of WHO and the Executive Director of UNICEF have sent joint instructions to WHO and UNICEF field staff. These recognized that problems had arisen through conflicting

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<sup>1</sup> Resolution WHA38.29 (document WHA38/1985/REC/1, p. 22).



estimates, and stressed the importance of providing greater support to governments in preparing assessments of total emergency health, drinking-water, nutrition, and supplementary food needs. Country representatives were requested always to consult with each other, as well as with governments and United Nations resident coordinators, in making emergency situation and needs assessments.

## II. STRENGTHENING OF NATIONAL AND WHO CAPACITY TO MEET EMERGENCY HEALTH NEEDS

### Country level

11. Ethiopia: WHO support for national relief efforts began with a mission to assess emergency needs in December 1984. This provided important information for the subsequent OEOA Conference on the Emergency Situation in Africa (March 1985) as well as for bilateral aid agencies and nongovernmental organizations already active within the country. This was followed by the assignment of a full-time health adviser to the staff of the United Nations Secretary-General's Special Representative in Addis Ababa. This adviser is responsible for supporting the Government's vital health coordination role vis-à-vis the various United Nations agencies, bilateral donors and nongovernmental organizations. The adviser also assists the Government in its efforts to continuously monitor the health situation, to define external needs in more standardized, uniform fashion, and to develop project proposals for possible support by the donor community as a whole. This type of WHO support will be phased out gradually, in the course of 1986, once the Government's own emergency management and preparedness capacity has been fully developed. WHO's Regional Office for Africa is already exploring with the Government ways in which the Ethiopian experience can be analysed and shared with other countries confronted with similar problems, and ways in which its national emergency health infrastructure may be able to contribute to training and support activities elsewhere in the Region.

12. Ethiopia has officially adopted an essential drugs policy, and a national workshop resulted in promulgation of essential drugs lists for different areas of health care, including those related to relief operations. Plans for local production are at an advanced stage, and plans are also under way for the training of production and quality control personnel at a suitable manufacturing facility within the Region (in Kenya). Eventual self-sufficiency in production of 10 basic essential drugs, intravenous fluids and oral rehydration salts is the objective of this programme, and has been the subject of five country visits in 1985 by staff of WHO's Action Programme for Essential Drugs and Vaccines.

13. As a result of these kinds of intervention in support of national institutions, priority health needs and appropriate remedies are being identified more readily, and the coordination of external support is being put on a stronger footing.

14. While WHO's involvement has helped to improve health aspects of emergency management and longer-term planning, the scarcity of basic data makes it difficult to determine further benefits with any degree of precision. The adverse effects of the drought, including serious food shortages and continuing malnutrition for a large part of the rural population, are likely to continue and can only hope to be resolved within the context of a broad approach to national health development. The gradual transition from relief to rehabilitation and longer-term development will also require a high degree of involvement on the part of the several government ministries concerned with intersectoral action for health.

15. Sudan: In response to the seriously deteriorating health situation early in 1985, supplies and equipment were initially provided through WHO's Regional Office for the Eastern Mediterranean. This was followed by a mission to assess the situation and to assist the Government in identifying further external assistance requirements. Two experienced health advisers were assigned to the Government by the Regional Office to perform this activity on a continuing basis. They also assist the United Nations Secretary-General's Special Representative in Khartoum and the Government in emergency health management, preparedness, and coordination of the health activities of other organizations of the United Nations system and of nongovernmental organizations.

16. A team of Ministry of Health staff has been actively involved with their WHO colleagues and, as in the case of Ethiopia, these efforts should result in the phased withdrawal of WHO emergency personnel by the end of 1986, when the Government's emergency management and preparedness capacity will have been more fully developed. Plans have been made to share the experiences and lessons learned in Sudan and in other countries of the Region, and this will be part of the regional emergency preparedness programme.



17. The Director-General, accompanied by the Regional Director for the Eastern Mediterranean, visited Sudan in September 1985 in order to review with the Government the emergency health situation and relief programme and to support the Government in improving the collaboration between the various United Nations agencies, the nongovernmental organizations, WHO and the national authorities concerned. The recent establishment of a diarrhoeal disease control programme by the Government was another urgent issue discussed.
18. A WHO mission was recently carried out to assess the current drug supply situation. Initial observations indicate that the most pressing problems lie in logistics and distribution, the task of processing a large supply of drugs already donated constituting a major challenge.
19. Severe problems of malnutrition and inadequate drinking-water supplies persist, and the government health infrastructure will continue to require massive external support in order to address the basic needs of the entire population. Much also remains to be done by way of improving the flow of information between the country, regional and global levels of the Organization.
20. Somalia: Initial WHO emergency action took the form of emergency supplies and technical advice to support timely government action in combating outbreaks of cholera.
21. A number of consultancy missions were carried out by WHO and UNICEF to assist the Government in the preparation of a national drugs programme. Main elements of the programme are identification and quantification of essential needs, procurement of the most urgently needed items, strengthening of storage, transport and distribution, preparation of a therapeutic guide, and training of health workers.
22. Reflecting experience derived from the drought crises of the 1970s, the organization of government infrastructure, in which responsibility for refugee health lies clearly with the Ministry of Health, contributes to more effective action and supporting assistance. Other emergency health measures, which are also under the responsibility of this Ministry, are fully integrated at ministerial level and are taken into account in the allocation of available resources.
23. Botswana: Botswana is an example of WHO's support for a government's action for emergency preparedness. There has been less need for WHO intervention in support of emergency relief measures. Instead, the Organization's collaboration has been directed to strengthening the health infrastructure through training in emergency preparedness, in response to government initiatives. In September 1985 the Medical and Dental Association of Botswana, in collaboration with the Ministry of Health, devoted its Ninth Annual Congress to emergency preparedness and management, one of the first of its kind in the African Region. A good example of combined WHO support was provided in the form of experts from the African Region and the Region of the Americas as well as headquarters. This congress and subsequent support to the Government have resulted in strengthened national capacity. Together they provide an example of advance planning for other countries within the Region to consider and will serve as an example for regional training efforts. It is encouraging to note that, following the success of the congress, the Government is setting in motion a multisectoral preparedness planning process, to be started early in 1986, in which health will play an important role. WHO, through the Regional Office, will be providing support.
24. East Africa: In Mozambique, WHO collaborated with the Government and UNICEF staff in March 1985 in efforts to resolve an acute drug supply problem. On the basis of findings and recommendations, emergency drug supply programmes were prepared and are now being implemented by the Government and coordinated by WHO in collaboration with UNICEF. Distribution difficulties attributable to unstable political conditions are being addressed with the support of the International Committee of the Red Cross and other health and relief agencies.
25. Essential drugs programmes are in an advanced stage of implementation in Kenya and the United Republic of Tanzania, and a similar programme has been launched in Uganda. All countries receive continuing support from the Action Programme on Essential Drugs and Vaccines.
26. West Africa: WHO support in the form of emergency medical supplies has been provided as a contribution to government relief efforts and, on an ad hoc basis, in response to more critical epidemic situations (cholera, yellow fever and meningitis). UNICEF, the International Committee of the Red Cross, and a number of nongovernmental organizations have been providing very extensive support in relation to the affected populations.



27. WHO despatched an expert mission to Burkina Faso, Chad, Mali and Niger to assess the prevailing health situation in the light of the drought and famine, and to assist the governments in identifying priority health problems and in designing appropriate projects and plans for consideration by external donors. After this mission the governments prepared their requests for external assistance for a forthcoming donor conference on funding emergency and rehabilitation programmes in Africa.

28. WHO has assisted the Government of Burkina Faso in preparing a national essential drugs programme, with emphasis on improving distribution to the rural areas. Apart from identification of needs and procurement, attention was given to special packaging to ensure safe delivery and proper usage at the primary levels of health care, to strengthening the national drug logistic system through better storage and distribution procedures, and to training health workers in clinical management and treatment.

#### Regional level

29. A major limiting factor throughout crisis-affected Africa is the lack of timely and reliable information, particularly information that can only be provided from within the countries themselves. Other United Nations organizations have also tried to come to grips with this problem, which touches all aspects of the international effort. However, the situation has improved through the identification of country-level contacts and more explicit emergency and preparedness guidance from regional offices to WHO programme coordinators and representatives.

30. An additional and equally important limiting factor has been the limitations in WHO's manpower, at global, regional and national level, for the organization of timely assessment missions and the placing of full-time expert staff at the service of governments in efforts to coordinate health relief work and strengthen the information and management capacity so badly needed at country level. These limitations are recognized and are being addressed by the regional offices and by headquarters.

31. In July 1985 the Regional Director for Africa approved a draft plan of action which provides for regional emergency preparedness and management programming (including the establishment of an Emergency Relief Operations unit within the Regional Office and at the subregional level). This is an important landmark, since it relates to a Region so regularly confronted with crises of this nature. Next to the Regional Office for the Americas, Africa's is now the second regional office to have established an emergency operations unit. It will provide a full-time focal point in the Region to support country preparedness and emergency operations, in cooperation with a regional training centre now at the planning stage.

32. In accordance with the new regional structure in Africa, three subregional health development centres are being established; among their responsibilities will be those for supporting emergency preparedness in health matters. Each centre will include a trained WHO staff member, who will serve as emergency focal point and whose main duty will be to respond promptly to the emergency and related requirements of Member States within the subregion. In October 1985 the first staff assignment was made to subregion III, centred in Zimbabwe.

33. During the first consultative meeting between the WHO and UNICEF Regional Directors for Africa in September 1985, agreement was reached on modalities for future emergency activities in the field, including assessment missions, prevention and control of epidemics, logistics, and an early warning system.

34. The Regional Office hosted a preliminary seminar in disaster preparedness for all WHO programme coordinators/representatives in mid-November 1985, drawing on the experience gained throughout the Organization in recent years. As in the case of the Botswana meeting, WHO inputs were provided from a variety of sources, including the Regional Offices for the Americas and Europe, two collaborating centres, and headquarters. The participants, together with their national counterparts, will attend more intensive workshops in 1986. Multisectoral planning will feature in this unprecedentedly widely attended training endeavour, drawing upon the contributions of UNDP, UNICEF, UNDRO, the International Committee of the Red Cross, the United States Agency for International Development (USAID), and other donors. It will enable all participating governments within the Region to determine appropriate action regarding preparedness and emergency health management within their respective countries.



35. The Regional Office for the Eastern Mediterranean organized a regional seminar on disaster preparedness, in collaboration with headquarters, in Baghdad in February 1985. The agenda placed strong emphasis on drought, nutrition, drinking-water, and sanitation. The experience derived from joint support to three countries of the Region (Pakistan, Somalia and Sudan) will figure in another workshop on emergency preparedness and management, scheduled to be held in Khartoum early in 1986.

#### Global level

36. At headquarters a number of mechanisms have been created or adapted to reflect the greater need for information and appropriate action. In order to strengthen the Organization's capacity to respond to emergency situations, its activities for emergency relief operations were structurally integrated into the Programme for External Coordination in early 1985. This was also in response to suggestions made in this connection by members of the Executive Board in January 1985 when discussing WHO's role in emergencies. This change permits the unit concerned to benefit from the direct support of the Programme in the area of health resources mobilization.

37. Another initiative was the creation, early in 1985, of an Africa Support Group, which brings technical units together periodically to review the health situation and to discuss ways in which WHO intervention can be more effective. The technical programmes most deeply involved in the emergency health programmes include Food Aid Programmes, Action Programme on Essential Drugs and Vaccines, Diarrhoeal Diseases Control, and Nutrition. These and other programmes such as the Division of Communicable Diseases and the Malaria Action Programme also support emergency health action through their regular programme activities in the affected countries. The emergency relief officer at headquarters collaborates closely with the regional offices in the formulation of the regional emergency preparedness and management programmes and in encouraging inter-regional exchange of experience and support to Africa.

38. Pursuant to resolution WHA38.29, draft guidelines have been prepared for regional offices which describe the responsibilities WHO programme coordinators are expected to assume with regard to preparedness and emergency relief management, and provide guidance for the regional offices in these matters and on the need for a two-way flow of timely information between all organizational levels of WHO. They will be supplemented by training seminars for WHO regional staff, country representatives and national counterparts in disaster preparedness. It is foreseen that several WHO Regional Offices - notably those for Africa, the Americas and Europe - will participate in order to share their preparedness experience and methodology in a series of inter-regional workshops and seminars. The Region of the Americas has a number of qualified disaster management and preparedness staff who, from time to time, can be made available to other regions. The Regional Office for Europe, in collaboration with headquarters, is in the process of training a number of external emergency health assessors, who can also be called upon for service in other regions.

39. Drawing on these staff resources and the expertise available from two collaborating centres in Europe (the London School of Hygiene and Tropical Medicine, United Kingdom, and the University of Louvain, Belgium), headquarters is in the process of organizing training programmes and health assessment missions for service in disaster-prone countries of Africa and other regions.

40. Advice is being requested by USAID in connection with its plans to establish an Africa-specific emergency health early warning system. Another type of health early warning system is being developed by the University of Louvain, which is also receiving WHO advice as well as financial support. It is important to note that the two proposed systems are not duplications, but are intended to complement one another. While the USAID plan envisages country-level acquisition of data, the Louvain system would provide continuing analysis of health data available also from the headquarters of various nongovernmental organizations, United Nations agencies, and bilateral donors. WHO is concerned to ensure that the governments of the affected countries will make the utmost use of both systems of information gathering, and that useful elements of the projects will be studied and adapted to a more permanent and continuing solution by the governments themselves.



## III. CONCLUSIONS

41. The magnitude and diversity of emergency assistance required by the drought-affected countries again demonstrate the need for greater coordination of effort and cooperation within the donor community, including the numerous entities of the United Nations system, as well as the need for a more explicit and systematic dialogue between external donors and the countries which they seek to support. The very substantial efforts of OEOA have helped considerably to improve the situation, and the country-level coordination activities of the Secretary-General's Special Representatives in Ethiopia and Sudan have given strong expression to these efforts.

42. Another lesson learned is that WHO has to be better organized to cope with extended emergency health situations, in order to be able to respond promptly and adequately. At all levels of its operations, it needs to be fully prepared to step more forcefully into its constitutional role of playing a leading, active and coordinating part vis-à-vis other agencies and in offering new forms of support to the governments as they try to cope with emergency health situations. The Organization is in the process of adjusting to this role. And yet a balance has to be struck between WHO's primary concern under the Strategy for Health for All to promote health infrastructure development - a long-term process - and its role as the health authority within the United Nations system, with respect to emergencies as well as to recovery and long-term development.

43. As one of the consequences of the discussions on the drought crisis in Africa in the Executive Board and Health Assembly, an additional sum of US\$ 250 000 has been made available from the regular budget for emergency relief preparedness for 1986-1987.<sup>1</sup> The Organization's emergency relief operations programme will have to be strengthened not only in its support to countries in their preparedness for emergencies but also to achieve better exchange and analysis of information. This is necessary at different operational levels of the Organization as well as in optimum sharing of information between WHO and the other organizations of the United Nations system and the donor community. It is also necessary for WHO, through its global and regional office preparedness programmes, to maintain adequate direct contact with emergency situations by means of field visits.

44. The evolving experience, as for example in Ethiopia and Botswana, illustrates that WHO can play a productive role and that government health operations can be considerably reinforced through it. Training and joint assessment efforts have undoubtedly enhanced national managerial and preparedness capacity. Functional responsibilities within ministries have been clarified; clearer guidance has improved motivation; and vital channels of communication have been established. These efforts have also improved health coordination within the external donor community, including relations with nongovernmental organizations. Greater WHO involvement and visibility have been welcomed by both the governments and the United Nations system as a whole. This can be translated, in health terms, into direct benefits to the affected populations in the form of clearer perception of emergency health needs and of more appropriate action. Much remains to be done, but these are promising examples on which to build.

45. The health infrastructure of developing countries, particularly those described as the least developed, is often fragile and lacks the capacity to respond to widespread emergency conditions. The Organization's means to support and strengthen national health emergency preparedness and disaster management also have their limits. In the allocation of scarce WHO resources, the optimum balance is sought between emergency relief and preparedness on the one hand and longer-term infrastructure development on the other.

46. As noted above, lack of timely, relevant and reliable information continues to be a major handicap. Communication within WHO itself is still not adequate. Efforts should be made to establish a more systematic type of analytical reporting system to make maximum use of the profusion of reports available - a process in which WHO should also be able to play its part.

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<sup>1</sup> See document EB77/4.



47. Unless national institution-building - both governmental and nongovernmental, public and private - forms a strong element of current development support, it is likely that the lessons learned and experience gained from the present crisis will be forgotten in much the same way as happened after the previous African drought crisis of the 1970s. The response to the current crisis differed little, except possibly in magnitude, from what was undertaken in the Sahel, Ethiopia and Somalia in 1973-1974. After the rains resumed, international coordination and preparedness mechanisms tended to be neglected if not altogether forgotten, and were only reconstituted in more recent times through the repetition of a costly, laborious process of trial and error. At national level, public and private health infrastructure has continued to occupy a relatively low priority in conflicting demands for scarce resources. With a few exceptions, most governments were in no better position to confront the drought crisis of 1984 than they had been in 1973.

48. One notable improvement is that WHO and its Member States are now committed to a strategy which is more relevant to the needs and capacities of disaster-prone countries, and which provides clear directions for members to follow. Furthermore, in resolution WHA38.29 the Health Assembly recognized the place of disaster preparedness and management "as an integral part of the regional and global strategies for health for all".

49. Preparedness is not, however, the full answer to the problem; at best it can reduce the magnitude of an emergency situation by identifying and eliminating some of the contributing factors and reducing it to more manageable proportions through advance creation of relief stockpiles and adoption of agreed working methods. National responsiveness and credibility can thereby be improved and essential life-saving measures can be undertaken more rapidly and to greater effect. But this does not, however, entirely address the issue confronting the African states, situated as they are within an environment which is deteriorating through both man-made and natural causes. The Sahel drought crisis of the 1970s demonstrated the dangers of overgrazing, over-use of surface and underground water resources, and neglect of environmental factors. That many lessons have yet to be learned is shown in the accelerating process of desertification, which is fast transforming hitherto fertile areas into southward reaches of the Sahara. Overpopulation is another phenomenon which has to be resolved outside the disaster preparedness context. Mid-term evaluation of the International Drinking Water Supply and Sanitation Decade shows that achievements are not keeping pace with population growth. Domestic and international resources for drinking-water supply and sanitation are finite and, unless the process of unrestrained urban growth, the abandonment of agricultural areas, and high rates of population growth are reversed, it is inevitable that drought-induced crises will recur with perhaps increasing frequency and magnitude.

50. Acute forms of natural disasters which have occurred elsewhere in the world during the past year are beyond the geographic scope of the present report, although many of the drought-stricken countries of Africa are also prone to earthquakes, typhoons, and flooding. Nor does the report deal with man-made disasters, which may also occur at any time. Nevertheless, proper consideration has to be given to all forms of natural and man-made disaster contingencies when developing a comprehensive national disaster preparedness and management programme. Furthermore, the regional programming experience currently under way in Africa may also be applicable elsewhere in the world and merits consideration by those WHO regional offices that have yet to adopt regional preparedness and management programmes.

51. The crisis which Africa continues to face is not purely one of recurrent drought and famine; it is a development crisis affecting all fields of endeavour, including food and other rural production incentives, social planning, and gradual alleviation of the unfavourable socioeconomic conditions which prevail throughout most of Africa. WHO will continue to support affected states and join efforts with the community of nations to continue their support to African countries' efforts to attain health for all by the year 2000 as an integral part of their national development objectives, in the conviction that these goals can be attained within a reasonable period of time through a renewed sense of commitment and more effective deployment of the resources at hand.





WORLD HEALTH ORGANIZATION

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**EXECUTIVE BOARD**  
**SEVENTY-SEVENTH SESSION**

GENEVA, 8-17 JANUARY 1986

**RESOLUTIONS AND DECISIONS**  
**ANNEXES**

GENEVA  
1986

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WORLD HEALTH ORGANIZATION

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# **EXECUTIVE BOARD**

## **SEVENTY-SEVENTH SESSION**

**GENEVA, 8-17 JANUARY 1986**

**RESOLUTIONS AND DECISIONS  
ANNEXES**

GENEVA

1986

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## ABBREVIATIONS

The following abbreviations are used in WHO documentation:

ACABQ	- Advisory Committee on Administrative and Budgetary Questions	OAU	- Organization of African Unity
ACC	- Administrative Committee on Coordination	OECD	- Organisation for Economic Co-operation and Development
ACMR	- Advisory Committee on Medical Research	PAHO	- Pan American Health Organization
AGFUND	- Arab Gulf Programme for United Nations Development Organizations	PASB	- Pan American Sanitary Bureau
ASEAN	- Association of South-East Asian Nations	SIDA	- Swedish International Development Authority
CIDA	- Canadian International Development Agency	UNCTAD	- United Nations Conference on Trade and Development
CIOMS	- Council for International Organizations of Medical Sciences	UNDP	- United Nations Development Programme
DANIDA	- Danish International Development Agency	UNDRO	- Office of the United Nations Disaster Relief Coordinator
ECA	- Economic Commission for Africa	UNEP	- United Nations Environment Programme
ECE	- Economic Commission for Europe	UNESCO	- United Nations Educational, Scientific and Cultural Organization
ECLAC	- Economic Commission for Latin America and the Caribbean	UNFDAC	- United Nations Fund for Drug Abuse Control
ESCAP	- Economic and Social Commission for Asia and the Pacific	UNFPA	- United Nations Fund for Population Activities
ESCWA	- Economic and Social Commission for Western Asia	UNHCR	- Office of the United Nations High Commissioner for Refugees
FAO	- Food and Agriculture Organization of the United Nations	UNICEF	- United Nations Children's Fund
IAEA	- International Atomic Energy Agency	UNIDO	- United Nations Industrial Development Organization
IARC	- International Agency for Research on Cancer	UNITAR	- United Nations Institute for Training and Research
IBRD	- International Bank for Reconstruction and Development (World Bank)	UNRWA	- United Nations Relief and Works Agency for Palestine Refugees in the Near East
ICAO	- International Civil Aviation Organization	UNSCEAR	- United Nations Scientific Committee on the Effects of Atomic Radiation
IFAD	- International Fund for Agricultural Development	USAID	- United States Agency for International Development
ILO	- International Labour Organisation (Office)	WFP	- World Food Programme
IMO	- International Maritime Organization	WHO	- World Health Organization
ITU	- International Telecommunication Union	WIPO	- World Intellectual Property Organization
NORAD	- Norwegian Agency for International Development	WMO	- World Meteorological Organization

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The designations employed and the presentation of the material in this volume do not imply the expression of any opinion whatsoever on the part of the Secretariat of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Where the designation "country or area" appears in the headings of tables, it covers countries, territories, cities or areas.

## PREFACE

The seventy-seventh session of the Executive Board was held at WHO headquarters, Geneva, from 8 to 17 January 1986. The proceedings are published in two volumes. The present volume contains the resolutions and decisions,<sup>1</sup> and relevant annexes. The summary records of the Board's discussions, list of participants and officers elected, and details regarding membership of committees and working groups, are published in document EB77/1986/REC/2.

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<sup>1</sup> The resolutions, which are reproduced in the order in which they were adopted, have been cross-referenced to the relevant sections of the WHO Handbook of Resolutions and Decisions, and are grouped in the table of contents under the appropriate subject headings. This is to ensure continuity with the Handbook, Volumes I and II of which contain most of the resolutions adopted by the Health Assembly and Executive Board between 1948 and 1984. A list of the dates of sessions, indicating resolution symbols and the volumes in which the resolutions and decisions were first published, is given in Volume II of the Handbook (pages XIII-XIV).



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## AGENDA<sup>1</sup>

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1. Opening of the session
2. Adoption of the agenda
3. Report on appointments to expert advisory panels and committees
4. Report on meetings of expert committees
5. [deleted]
6. [deleted]
7. Changes in the programme budget for the financial period 1986-1987 (report by the Programme Committee)
8. Reports of the Regional Directors on significant regional developments, including regional committee matters
9. Evaluation of the African experience of using nationals as programme coordinators
10. Appointment of the Regional Director for South-East Asia
11. Global Strategy for Health for All by the Year 2000
  - 11.1 Review of first evaluation report (Seventh Report on the World Health Situation)
  - 11.2 Economic dimension
  - 11.3 Additional support to national strategies for health for all in the least developed among developing countries
  - 11.4 Technical cooperation among developing countries in support of the goal of health for all
  - 11.5 Political dimension
12. Preparation of the Eighth General Programme of Work
13. Review of preparation of regional programme budget policies
14. Research promotion and development
  - 14.1 WHO Advisory Committees on Medical Research (progress reports)
  - 14.2 Recent developments in tropical diseases research
15. Tobacco or health (report by the Programme Committee)

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<sup>1</sup> As adopted by the Board at its first meeting (8 January 1986).



EXECUTIVE BOARD, SEVENTY-SEVENTH SESSION

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16. Protection and promotion of mental health
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18. Expanded Programme on Immunization (progress and evaluation report)
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28. Composition of the United Nations Joint Staff Pension Board
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  - 29.1 Darling Foundation Prize (report of the Darling Foundation Committee)
  - 29.2 Léon Bernard Foundation Prize (report of the Léon Bernard Foundation Committee)

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Item No.

- 29.3 Dr A. T. Shousha Foundation Prize and Fellowship (report of the Dr A. T. Shousha Foundation Committee)
- 29.4 Jacques Parisot Foundation Fellowship (report of the Jacques Parisot Foundation Committee)
- 29.5 Sasakawa Health Prize (report of the Sasakawa Health Prize Committee)
- 30. Appointment of the Committee of the Executive Board to consider certain financial matters prior to the Health Assembly
- 31. Provisional agenda for and duration of the Thirty-ninth World Health Assembly
- 32. Date and place of the seventy-eighth session of the Executive Board
- 33. Closure of the session



## RESOLUTIONS

### EB77.R1 Appointment of the Regional Director for South-East Asia

The Executive Board,

Considering the provisions of Article 52 of the WHO Constitution and Staff Regulation 4.5;

Considering the nomination and recommendation made by the Regional Committee for South-East Asia at its thirty-eighth session;

1. REAPPOINTS Dr U Ko Ko as Regional Director for South-East Asia as from 1 March 1986;
2. AUTHORIZES the Director-General to extend the appointment of Dr U Ko Ko as Regional Director for South-East Asia for a further period of five years from 1 March 1986, subject to the provisions of the Staff Regulations and Staff Rules.

Hbk Res., Vol. II (1985), 4.2.3

(Sixth meeting, 10 January 1986)

### EB77.R2 Additional support to national strategies for health for all in the least developed among developing countries

The Executive Board,

Having considered the report of the Director-General on additional support to national strategies for health for all in the least developed among developing countries;<sup>1</sup>

RECOMMENDS to the Thirty-ninth World Health Assembly the adoption of the following resolution:

The Thirty-ninth World Health Assembly,

Recalling resolution WHA38.16;

Having considered the report of the Director-General on additional support to national strategies for health for all in the least developed among developing countries, and the Executive Board's recommendation thereon;

Noting with satisfaction the efforts of the Director-General to mobilize additional resources for priority programmes of technical cooperation with and support to developing countries, especially the least developed among them;

Noting further with appreciation the growth in extrabudgetary resources available to the Organization and to developing countries for activities in the health field;

Reiterating its deep concern over the deteriorating health situation in the least developed among developing countries;

1. EXPRESSES its appreciation for the support given by governments and other donors through their contributions of additional resources for the Organization's work;

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<sup>1</sup> See Annex 1.

2. THANKS the Director-General for his report, and requests him to continue his efforts to mobilize additional contributions from external sources for support to priority health activities in the least developed among developing countries, using all existing mechanisms for the mobilization and application of those financial resources;

3. URGES Member States to cooperate with the Director-General in his efforts and to provide additional resources to meet the pressing and priority needs of the least developed among developing countries in support of their strategies for health for all.

Hbk Res., Vol. II (1985), 1.1; 1.2.2.2

(Sixth meeting, 10 January 1986)

EB77.R3 Prevention of mental, neurological and psychosocial disorders

The Executive Board,

Having considered the report of the Director-General on the prevention of mental, neurological and psychosocial disorders;<sup>1</sup>

RECOMMENDS to the Thirty-ninth World Health Assembly the adoption of the following resolution:

The Thirty-ninth World Health Assembly,

Aware of the severity, magnitude and major public health importance of mental, neurological and psychosocial problems;

Noting the existence of measures which can prevent the occurrence of a significant proportion of these problems, and thus reduce their negative social impact and human suffering;

Convinced that health for all can only be achieved if action to reduce such problems and promote mental health is given high priority and undertaken urgently;

Recalling resolutions WHA28.84 and EB61.R28 on the promotion of mental health, resolution WHA29.21 on psychosocial factors and health, resolutions WHA32.40, WHA33.27 and EB69.R9 on drug- and alcohol-related problems, and resolution WHA30.38 on mental retardation;

1. CALLS on Member States to apply the preventive measures identified in the report of the Director-General on the prevention of mental, neurological and psychosocial disorders, and to include these activities in their strategies to achieve health for all by the year 2000;

2. REQUESTS the Director-General to take appropriate action to enhance the Organization's collaboration with Member States in the conduct of activities to prevent these disorders, including:

(1) the development and dissemination of materials and technical guidance on the application of measures to prevent mental and neurological disorders and psychosocial problems;

(2) the organization of training programmes that will help to ensure that available knowledge and experience reaches all those concerned, both professional and non-professional health workers;

(3) the stimulation, coordination and conduct of research to develop further methods of prevention and explore ways in which these can be most effectively used;

3. FURTHER REQUESTS the Director-General to report on the progress made to the Forty-second World Health Assembly.

Hbk Res., Vol. II (1985), 1.13.5

(Tenth meeting, 14 January 1986)

<sup>1</sup> Document EB77/23.



EB77.R4 Tropical disease research

The Executive Board,

Having considered the progress report<sup>1</sup> submitted by the Director-General on the UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases;

Recognizing that the Programme has achieved substantial progress in the development of vaccines, drugs, diagnostic methods and vector control agents to combat tropical parasitic diseases;

Noting that the Programme has made valuable contributions to the strengthening of the capability of tropical countries where the target diseases are endemic to conduct research on them;

Noting further that, despite the generosity of many Member States, international agencies and nongovernmental organizations, financial contributions have fallen short of requirements to implement the approved level of research and research-strengthening activities;

1. EXPRESSES its appreciation for the scientific and technical results already achieved by the Special Programme;
2. CONSIDERS that one of its most significant achievements has been to mobilize the knowledge and skills of scientists and scientific institutions in countries where the diseases are endemic and in other countries into a cohesive network for the development of new and improved methods to control tropical parasitic diseases;
3. WELCOMES the close collaboration between the Special Programme and other WHO programmes, especially those on parasitic diseases, malaria, vector biology and control and leprosy, for the control of tropical diseases, and between the Special Programme and the pharmaceutical industry in research on new technology against tropical diseases and the development and application of the results of such research;
4. URGES the Director-General to continue to give high priority to the Programme, in view of the need for new or improved means of controlling tropical parasitic diseases within the context of primary health care and strategies for health for all;
5. EMPHASIZES the importance of ensuring the rapid and widespread application of the results of research financed by the Programme in the national health strategies and programmes of countries;
6. EXPRESSES its appreciation to Member States for their collaboration in and financial contributions to the Programme; and to the other sponsoring agencies, the United Nations Development Programme and the World Bank, for their continued support and assistance in the advancement, management and funding of the Programme;
7. URGES Member States, in particular in tropical areas where the diseases are endemic, to improve career structures for scientists and other personnel engaged in research on tropical diseases, especially for those engaged in field research;
8. URGES Member States to contribute or to increase their financial contributions to the Programme in order to accelerate the achievement of its objectives.

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<sup>1</sup> See Annex 2.

EB77.R5 Tobacco or health

The Executive Board,

Having considered the report of the Director-General on tobacco or health;<sup>1</sup>

Believing that the Organization must reiterate its clear and firm policy on tobacco versus health;

RECOMMENDS that the Thirty-ninth World Health Assembly adopt the following resolution:

The Thirty-ninth World Health Assembly,

Recalling resolutions WHA31.56 and WHA33.35 on the health hazards of tobacco smoking and the WHO action programme on smoking and health;

Deeply concerned by the current pandemic of smoking and other forms of tobacco use, which results in the loss of the lives of at least one million human beings every year and in illness and suffering for many more;

Believing that the battle between health and tobacco must and can be won for the sake of human health;

Encouraged by the existence of total bans, restrictions or limitations on tobacco advertising in several countries;

1. AFFIRMS:

(1) that tobacco smoking and the use of tobacco in all its forms is incompatible with the attainment of health for all by the year 2000;

(2) that the presence of carcinogens and other toxic substances in tobacco smoke and other tobacco products is a known fact; and that the causal link between tobacco and a range of fatal and disabling diseases has been scientifically proven;

(3) that passive, enforced or involuntary smoking violates the right to health of non-smokers, who must be protected against this noxious form of environmental pollution;

2. CALLS for a global public health approach and action now to combat the tobacco pandemic;

3. DEPLORES all direct and indirect practices the aim of which is to promote the use of tobacco, as this product is addictive and dangerous even when used as promoted;

4. URGES those Member States which have not yet done so to implement smoking control strategies; these, as a minimum, should contain the following:

(1) measures to ensure that non-smokers receive effective protection, to which they are entitled, from involuntary exposure to tobacco smoke, in enclosed public places, restaurants, transport, and places of work and entertainment;

(2) measures to promote abstention from the use of tobacco so as to protect children and young people from becoming addicted;

(3) measures to ensure that a good example is set in all health-related premises and by all health personnel;

(4) measures leading to the progressive elimination of those socioeconomic, behavioural, and other incentives which maintain and promote the use of tobacco;

(5) prominent health warnings, which might include the statement that tobacco is addictive, on cigarette packets and containers of all types of tobacco products;

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<sup>1</sup> See Annex 3, part 1.



(6) the establishment of programmes of education and public information on tobacco and health issues, including smoking cessation programmes, with active involvement of the health professions and the media;

(7) monitoring of trends in smoking and other forms of tobacco use, tobacco-related diseases, and effectiveness of national smoking control action;

(8) the promotion of viable economic alternatives to tobacco production, trade and taxation;

(9) the establishment of a national focal point to stimulate, support, and coordinate all the above activities;

5. APPEALS to other organizations of the United Nations system:

(1) to support WHO in all ways possible within their fields of competence;

(2) to show solidarity with WHO's efforts to stem the spread of tobacco-induced diseases by protecting the health of non-smokers on their premises, as this action would have a major exemplar role;

(3) to help Member States in identifying and implementing economic alternatives to tobacco cultivation, production and trade;

6. REQUESTS the Director-General:

(1) to strengthen the present programme on smoking and health without waiting for its official introduction in the Eighth General Programme of Work, as a visible and resolute attitude on the part of WHO would provide Member States with encouragement and support, which are necessary prerequisites to abating the smoking pandemic before the year 2000;

(2) to mobilize support for the present programme on smoking and health in terms of funds and manpower which would ensure adequate programme continuity on a long-term basis;

(3) to coordinate activities in support of WHO's action on smoking and health with other organizations of the United Nations system at the highest executive level;

(4) to continue and strengthen collaboration with nongovernmental organizations as appropriate;

(5) to ensure that WHO plays an effective global advocacy role in tobacco and health issues and that, in common with other health institutions, it plays an exemplar role in non-smoking practices;

(6) to provide support to national smoking control efforts;

(7) to report on progress to the Executive Board at its eighty-first session and to the Forty-first World Health Assembly.

Hbk Res., Vol. II (1985), 1.16.19

(Twelfth meeting, 15 January 1986)

EB77.R6 Evaluation of the Strategy for Health for All by the Year 2000 - Seventh Report on the World Health Situation

The Executive Board,

Having considered the report on the evaluation of the Strategy for Health for All by the Year 2000 - Seventh Report on the World Health Situation;<sup>1</sup>

<sup>1</sup> Document EB77/13 Add.1.

Aware that the evaluation of the Strategy at national, regional and global levels has yielded valid and useful information which must be fully utilized to support the implementation of the Strategy;

Recognizing the need for increased and coordinated efforts by Member States to accelerate progress in the implementation of their strategies for health for all by the year 2000;

Recommends to the Thirty-ninth World Health Assembly the adoption of the following resolution:

The Thirty-ninth World Health Assembly,

Reaffirming resolutions WHA30.43, WHA34.36, WHA35.23, WHA36.35 and WHA37.17 concerning the policy, strategy and plan of action for attaining the goal of health for all by the year 2000;

Recalling resolution WHA36.35 concerning the preparation of the Seventh Report on the World Health Situation on the basis of the first evaluation of the Strategy for Health for All by the Year 2000, at national, regional and global levels;

Noting with appreciation that 86% of the Member States submitted reports on the evaluation of their national strategies;

Mindful of the persistent deficiencies in the information support required to back the national managerial process for health development and of the consequent difficulties experienced by some Member States in generating relevant information and using it for the monitoring and evaluation of the Strategy;

Stressing that the real value of the evaluation can only be realized if Member States use all available information to the fullest extent for accelerating the implementation of their strategies for health for all;

Emphasizing that the achievement of the goal of health for all by the year 2000 requires continuing political commitment and is intimately linked to socioeconomic development, and to the preservation of peace;

1. APPROVES the global report on the evaluation of the Strategy for Health for All by the Year 2000, and decides that it should be published as the Seventh Report on the World Health Situation;
2. NOTES with satisfaction the efforts made by Member States to evaluate the effectiveness of their strategies and transmit their reports to WHO and calls upon Member States which have not done so to undertake such action urgently;
3. CONGRATULATES Member States which have made progress in the implementation of their strategies for health for all;
4. DECIDES to modify the plan of action for implementing the Global Strategy for Health for All,<sup>1</sup> as recommended by the regional committees, by instituting reporting on monitoring of the Strategy every three years instead of every two, to allow more time to strengthen the national monitoring and evaluation process and the related information support;
5. URGES Member States:

(1) to make use of their evaluation reports to guide further their national health policies and health development processes towards the achievement of the goal of health for all, and to involve decision-makers, community leaders, health workers, nongovernmental organizations and people from all walks of life in the attainment of national health goals;

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<sup>1</sup> Plan of action for implementing the Global Strategy for Health for All. Geneva, World Health Organization, 1982 ("Health for All" Series, No. 7).



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- (2) to maintain high-level political commitment to social equity and leadership for the further implementation of national strategies, including the reduction of socioeconomic and related health disparities among people, thus fulfilling a fundamental requisite for the achievement of health for all;
  - (3) to pursue vigorously actions aimed at strengthening the management of their health system based on primary health care, including the information support required for its monitoring and evaluation;
  - (4) to accelerate efforts to obtain the collaboration of all health-related sectors and develop effective mechanisms for their coordinated support to achieve health goals;
  - (5) to strengthen further the health system infrastructure based on primary health care in order to make full use of all available health resources;
  - (6) to promote relevant research and the use of appropriate health technology in their national health system;
  - (7) to investigate all feasible means of financing the implementation of their national strategies for health for all, including the rational and optimal use of national resources and external funding;
6. URGES the regional committees:
- (1) to give appropriate attention to the dissemination and use of findings of the evaluation report to support the implementation of national and regional strategies and to make the best use of WHO resources at regional and national levels;
  - (2) to promote mutual cooperation and exchange of experience among countries with regard to national health development based on primary health care;
  - (3) to intensify further the mobilization of resources for the Strategy;
  - (4) to carry out the next monitoring of the regional strategies in 1988;
7. REQUESTS the Executive Board:
- (1) to continue to monitor and evaluate actively the progress in the implementation of the Global Strategy, in order to identify critical issues and areas requiring action by Member States and the Secretariat;
  - (2) to explore other practical and effective economic approaches for financing the national health strategies, including the mobilization of support from other sectors;
  - (3) to carry out the next review of the monitoring of the Global Strategy for Health for All in January 1989 and to report to the Forty-second World Health Assembly;
8. DECIDES that the Forty-second World Health Assembly will review the report on the second monitoring of the Global Strategy for Health for All, in accordance with the revised plan of action;
9. REQUESTS the Director-General:
- (1) to publish the evaluation report as the Seventh Report on the World Health Situation, in accordance with resolution WHA36.35, in the six official languages;
  - (2) to disseminate the report widely to governments, organizations and agencies of the United Nations system, and other intergovernmental, nongovernmental and voluntary organizations;
  - (3) to use the national, regional and global reports to guide WHO's cooperation for health development and, in particular, as the basis for WHO's response to the needs of Member States in the Eighth General Programme of Work;

- (4) to intensify technical cooperation with Member States to strengthen the management of health systems, including information support mechanisms;
- (5) to continue to support Member States in developing and implementing their strategies to reach the goal of health for all by the year 2000 and their alternative economic strategies for the attainment of that goal;
- (6) to intensify support to the least developed countries, with particular emphasis on rationalizing the use of available resources and mobilizing additional financial resources for strengthening their health infrastructure from national, international, bilateral and nongovernmental sources;
- (7) to support the monitoring and evaluation of the Strategy at national, regional and global levels.

Hbk Res., Vol. II (1985), 1.1; 1.6.1.2

(Fourteenth meeting, 16 January 1986)

EB77.R7 Expanded Programme on Immunization

The Executive Board,

Having considered the report of the Director-General on the Expanded Programme on Immunization;<sup>1</sup>

1. ENDORSES the recommendations for action contained in that report;
2. RECOMMENDS to the Thirty-ninth World Health Assembly the adoption of the following resolution:

The Thirty-ninth World Health Assembly,

Noting the report of the Director-General on the Expanded Programme on Immunization and the Executive Board's discussion on the report;

Noting further the general recommendations for action contained in the Director-General's report, which emphasize the need to accelerate progress, furthering the five-point action programme endorsed by the Thirty-fifth World Health Assembly by: promoting the achievement of the 1990 goal through collaboration among ministries, organizations and individuals in both the public and private sector to create effective consumer demand and ensure that this demand is met; adopting a mix of complementary strategies for programme acceleration; and ensuring that rapid increases in coverage can be sustained through mechanisms which strengthen the delivery of other primary health care interventions;

Noting also the recommendations for specific actions contained in the Director-General's report, which call for: providing immunization at every contact point, reducing drop-out rates between first and last immunizations, improving immunization services to the disadvantaged in urban areas and increasing the priority for the control of measles, poliomyelitis and neonatal tetanus;

Recognizing that continued efforts are also required to strengthen disease surveillance and outbreak control, reinforce training and supervision, ensure the quality of vaccine production, management and administration, and pursue research and development;

1. AFFIRMS that the Expanded Programme's goal of reducing morbidity and mortality by providing immunization for all children of the world by 1990 remains a global priority and represents a milestone toward achieving health for all by the year 2000;

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<sup>1</sup> Document EB77/27.



2. WARNS that the goal will not be achieved without continuing acceleration of national programmes;
3. URGES Member States to pursue vigorously the recommendations for action contained in the Director-General's report and to commit themselves fully to achieving the 1990 immunization goal as part of their strategies for achieving health for all by the year 2000 through primary health care;
4. CALLS on organizations of the United Nations system to support the Expanded Programme on Immunization in the context of United Nations General Assembly resolution 34/58, which endorsed the Declaration of Alma-Ata, welcomed the efforts of WHO and UNICEF to attain health for all by the year 2000, and called upon the relevant bodies of the United Nations system to cooperate with WHO and support its efforts by appropriate actions within their respective spheres of competence;
5. NOTES with appreciation the increased international support for immunization programmes being provided particularly by the United Nations Children's Fund and by national development agencies, private and voluntary organizations and individuals, whose collective efforts are helping to bring the immunization goal within reach;
6. URGES that such international support should be further increased;
7. REMINDS Member States and collaborating organizations that the 1990 goal establishes a basis for immunization coverage, which must be sustained indefinitely;
8. REQUESTS the Director-General:
  - (1) to strengthen WHO's coordinating role to help to ensure that immunization programmes continue to be carried out in consonance with the relevant policies of the World Health Assembly, and in particular the policy of attaining health for all through primary health care;
  - (2) further to increase collaboration with Member States in order to meet the 1990 goal, with special emphasis on achieving reductions in the target diseases and on training, evaluation and the improvement of national, regional and global systems for monitoring progress;
  - (3) to pursue basic and applied research relevant to the field of immunization and to make the results known in good time to Member States;
  - (4) to continue to keep the Health Assembly informed of the progress of the Expanded Programme and to propose the necessary means to achieve the 1990 goal.

Hbk Res., Vol. II (1985), 1.16.1

(Fifteenth meeting, 16 January 1986)

EB77.R8 Confirmation of amendments to the Staff Rules

The Executive Board

CONFIRMS in accordance with Staff Regulation 12.2<sup>1</sup> the amendment to the Staff Rules<sup>2</sup> which has been made by the Director-General with effect from 1 January 1985 concerning the effective gross base salary to be used in computing terminal remuneration.

Hbk Res., Vol. II (1985), 6.2.1

(Fifteenth meeting, 16 January 1986)

<sup>1</sup> WHO Basic Documents, 36th ed., 1986, p. 92.

<sup>2</sup> See Annex 4.

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**EB77.R9** Real Estate Fund

The Executive Board,

Noting the report of the Director-General<sup>1</sup> on the status of projects being financed from the Real Estate Fund and the estimated requirements of the Fund for the period 1 June 1986 to 31 May 1987;

RECOMMENDS to the Thirty-ninth World Health Assembly that it adopt the following resolution:

The Thirty-ninth World Health Assembly,

Having considered resolution EB77.R9 and the report of the Director-General on the status of projects financed from the Real Estate Fund and the estimated requirements of the Fund for the period 1 June 1986 to 31 May 1987;

Recognizing that certain estimates must necessarily remain provisional because of the fluctuation of exchange rates;

1. AUTHORIZES the financing from the Real Estate Fund of the expenditures summarized in part III of the Director-General's report, at the estimated cost of US\$ 1 812 500;
2. APPROPRIATES to the Real Estate Fund, from casual income, the sum of US\$ 196 000.

Hbk Res., Vol. II (1985), 6.1.7

(Fifteenth meeting, 16 January 1986)

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**EB77.R10** Amendment to the scale of assessments to be applied to the second year of the financial period 1986-1987

The Executive Board,

Noting the report of the Director-General on amendment of the WHO scale of assessments to be applied to the second year of the financial period 1986-1987;<sup>2</sup>

RECOMMENDS to the Thirty-ninth World Health Assembly that it adopt the following resolution:

The Thirty-ninth World Health Assembly,

Noting that the United Nations General Assembly, in resolution 40/248, adopted the scale of assessments for the contributions of Member States to the United Nations budget for the financial years 1986, 1987 and 1988 and established the rates at which States which are not Members of the United Nations but which participate in certain of its activities shall be called upon to contribute towards the 1986, 1987 and 1988 expense of such activities;

Recalling the principle, established in resolution WHA8.5 and reaffirmed in resolution WHA24.12, that the latest available United Nations scale of assessments shall be used as a basis for determining the scale of assessments to be used by WHO;

Recalling further that the Twenty-sixth World Health Assembly, in resolution WHA26.21, expressed the opinion that the scale of assessments in WHO should follow as closely as possible that of the United Nations, and confirmed the principles laid down in resolutions WHA8.5 and WHA24.12 for the establishment of the scale of assessments of WHO;

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<sup>1</sup> See Annex 5.

<sup>2</sup> See Annex 6.



Noting that by resolution WHA38.7 the Thirty-eighth World Health Assembly adopted a scale of assessments for 1986-1987;

Noting also that Financial Regulation 5.3 provides that in the first year of the financial period the Health Assembly may decide to amend the scale of assessments to be applied to the second year of the financial period;

1. DECIDES to amend the scale of assessments to be applied to 1987, subject to the provisions of paragraph 2, to be as follows:

<u>Member</u>	<u>Assessment</u> (percentage)
Afghanistan . . . . .	0.01
Albania . . . . .	0.01
Algeria . . . . .	0.14
Angola . . . . .	0.01
Antigua and Barbuda . . . . .	0.01
Argentina . . . . .	0.61
Australia . . . . .	1.63
Austria . . . . .	0.72
Bahamas . . . . .	0.01
Bahrain . . . . .	0.02
Bangladesh . . . . .	0.02
Barbados . . . . .	0.01
Belgium . . . . .	1.16
Benin . . . . .	0.01
Bhutan . . . . .	0.01
Bolivia . . . . .	0.01
Botswana . . . . .	0.01
Brazil . . . . .	1.37
Brunei Darussalam . . . . .	0.04
Bulgaria . . . . .	0.16
Burkina Faso . . . . .	0.01
Burma . . . . .	0.01
Burundi . . . . .	0.01
Byelorussian Soviet Socialist Republic . . . . .	0.33
Cameroon . . . . .	0.01
Canada . . . . .	3.00
Cape Verde . . . . .	0.01
Central African Republic . . . . .	0.01
Chad . . . . .	0.01
Chile . . . . .	0.07
China . . . . .	0.77
Colombia . . . . .	0.13
Comoros . . . . .	0.01
Congo . . . . .	0.01
Cook Islands . . . . .	0.01
Costa Rica . . . . .	0.02
Côte d'Ivoire . . . . .	0.02
Cuba . . . . .	0.09
Cyprus . . . . .	0.02
Czechoslovakia . . . . .	0.69
Democratic Kampuchea . . . . .	0.01
Democratic People's Republic of Korea . . . . .	0.05
Democratic Yemen . . . . .	0.01
Denmark . . . . .	0.71
Djibouti . . . . .	0.01
Dominica . . . . .	0.01
Dominican Republic . . . . .	0.03
Ecuador . . . . .	0.03
Egypt . . . . .	0.07
El Salvador . . . . .	0.01

<u>Member</u>	<u>Assessment</u> (percentage)
Equatorial Guinea . . . . .	0.01
Ethiopia . . . . .	0.01
Fiji . . . . .	0.01
Finland . . . . .	0.49
France . . . . .	6.25
Gabon . . . . .	0.03
Gambia . . . . .	0.01
German Democratic Republic . . . . .	1.30
Germany, Federal Republic of . . . . .	8.10
Ghana . . . . .	0.01
Greece . . . . .	0.43
Grenada . . . . .	0.01
Guatemala . . . . .	0.02
Guinea . . . . .	0.01
Guinea-Bissau . . . . .	0.01
Guyana . . . . .	0.01
Haiti . . . . .	0.01
Honduras . . . . .	0.01
Hungary . . . . .	0.21
Iceland . . . . .	0.03
India . . . . .	0.34
Indonesia . . . . .	0.14
Iran (Islamic Republic of) . . . . .	0.62
Iraq . . . . .	0.12
Ireland . . . . .	0.18
Israel . . . . .	0.21
Italy . . . . .	3.72
Jamaica . . . . .	0.02
Japan . . . . .	10.64
Jordan . . . . .	0.01
Kenya . . . . .	0.01
Kiribati . . . . .	0.01
Kuwait . . . . .	0.28
Lao People's Democratic Republic . . . . .	0.01
Lebanon . . . . .	0.01
Lesotho . . . . .	0.01
Liberia . . . . .	0.01
Libyan Arab Jamahiriya . . . . .	0.25
Luxembourg . . . . .	0.05
Madagascar . . . . .	0.01
Malawi . . . . .	0.01
Malaysia . . . . .	0.10
Maldives . . . . .	0.01
Mali . . . . .	0.01
Malta . . . . .	0.01
Mauritania . . . . .	0.01
Mauritius . . . . .	0.01
Mexico . . . . .	0.87
Monaco . . . . .	0.01
Mongolia . . . . .	0.01
Morocco . . . . .	0.05
Mozambique . . . . .	0.01
Namibia . . . . .	0.01
Nepal . . . . .	0.01
Netherlands . . . . .	1.71
New Zealand . . . . .	0.23
Nicaragua . . . . .	0.01
Niger . . . . .	0.01
Nigeria . . . . .	0.19
Norway . . . . .	0.53



<u>Member</u>	<u>Assessment</u> <u>(percentage)</u>
Oman . . . . .	0.02
Pakistan . . . . .	0.06
Panama . . . . .	0.02
Papua New Guinea . . . . .	0.01
Paraguay . . . . .	0.02
Peru . . . . .	0.07
Philippines . . . . .	0.10
Poland . . . . .	0.63
Portugal . . . . .	0.18
Qatar . . . . .	0.04
Republic of Korea . . . . .	0.19
Romania . . . . .	0.19
Rwanda . . . . .	0.01
Saint Christopher and Nevis . . . . .	0.01
Saint Lucia . . . . .	0.01
Saint Vincent and the Grenadines . . . . .	0.01
Samoa . . . . .	0.01
San Marino . . . . .	0.01
Sao Tome and Principe . . . . .	0.01
Saudi Arabia . . . . .	0.95
Senegal . . . . .	0.01
Seychelles . . . . .	0.01
Sierra Leone . . . . .	0.01
Singapore . . . . .	0.10
Solomon Islands . . . . .	0.01
Somalia . . . . .	0.01
South Africa . . . . .	0.43
Spain . . . . .	1.99
Sri Lanka . . . . .	0.01
Sudan . . . . .	0.01
Suriname . . . . .	0.01
Swaziland . . . . .	0.01
Sweden . . . . .	1.23
Switzerland . . . . .	1.10
Syrian Arab Republic . . . . .	0.04
Thailand . . . . .	0.09
Togo . . . . .	0.01
Tonga . . . . .	0.01
Trinidad and Tobago . . . . .	0.04
Tunisia . . . . .	0.03
Turkey . . . . .	0.33
Uganda . . . . .	0.01
Ukrainian Soviet Socialist Republic . . . . .	1.25
Union of Soviet Socialist Republics . . . . .	10.01
United Arab Emirates . . . . .	0.18
United Kingdom of Great Britain and Northern Ireland . . . . .	4.77
United Republic of Tanzania . . . . .	0.01
United States of America . . . . .	25.00
Uruguay . . . . .	0.04
Vanuatu . . . . .	0.01
Venezuela . . . . .	0.59
Viet Nam . . . . .	0.01
Yemen . . . . .	0.01
Yugoslavia . . . . .	0.45
Zaire . . . . .	0.01
Zambia . . . . .	0.01
Zimbabwe . . . . .	0.02

2. REQUESTS The Director-General, in the event that assessments are fixed provisionally or definitively by the present Health Assembly for any new Members, to adjust the scale as set forth in paragraph 1;
3. DECIDES to amend the Appropriation Resolution for the financial period 1986-1987 (resolution WHA38.32) as follows:
  - (1) decrease the total amount appropriated for the financial period 1986-1987 by US\$ 75 300, from US\$ 605 327 400 to US\$ 605 252 100;
  - (2) in paragraph A, decrease appropriation section 7 (Undistributed Reserve) by US\$ 75 300;
  - (3) decrease the amount under paragraph D, relating to assessments on Members, by US\$ 75 300.

Hbk Res., Vol. II (1985), 6.1.2.1

(Fifteenth meeting, 16 January 1986)

EB77.R11 Global Strategy for Health for All by the Year 2000: economic dimension

The Executive Board,

Recalling resolution WHA38.20;

Having considered the report of the Director-General on the repercussions of the world economic situation;<sup>1</sup>

Recognizing that the continuing economic crisis facing much of the world today makes it more difficult for many countries to achieve the goal of health for all by the year 2000;

Conscious of the interim nature of the Director-General's report and the need for generation of further information by Member States before submission of a final report;

Noting that the subject of the Technical Discussions at the Fortieth World Health Assembly will be "Economic strategies to support the strategies for health for all";

1. URGES those Member States which have not already done so:
  - (1) to develop further their national strategies for health for all by the year 2000 by producing costed plans for health services and health-related activities;
  - (2) to investigate all possible sources of finance, including the redeployment of existing resources;
  - (3) to ensure that the plans can realistically be contained within the resources expected to be available;
2. REQUESTS the Director-General:
  - (1) to continue to study the repercussions of the economic crisis on health after the completion of the present provisional report and its review by the Thirty-ninth World Health Assembly and to keep the Board informed periodically;
  - (2) to monitor trends in external cooperation for the health sector of developing countries from all sources;
  - (3) to continue to support countries in their financial planning for health through both technical cooperation and the promotion of training.

Hbk Res., Vol. II (1985), 1.1

(Fifteenth meeting, 16 January 1986)

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<sup>1</sup> Document EB77/INF.DOC./2 and Corr.1.



EB77.R12 WHO activities for the prevention and control of acquired immunodeficiency syndrome

The Executive Board,

Conscious that acquired immunodeficiency syndrome (AIDS) and other manifestations of LAV/HTLV-III infection are becoming a major public health concern in many areas of the world and may thereby represent a hindrance to the attainment of health for all by the year 2000;

Recognizing that international alertness and preparedness are urgently required, as no country can consider itself immune to infection from LAV/HTLV-III;

Noting that neither therapeutic agents nor vaccines are currently available for the treatment and prevention of AIDS;

Considering that public information and education as well as the assurance and use of safe blood and blood products are at this time the only measures available that can limit the further spread of AIDS;

1. ENDORSES the Director-General's report on WHO activities for the prevention and control of AIDS;<sup>1</sup>
2. NOTES with satisfaction:
  - (1) the steps taken by the Director-General to cooperate with Member States in this field;
  - (2) the assistance of the WHO collaborating centres on AIDS and other agencies in laboratory, epidemiological, clinical, and prevention and control activities regarding LAV/HTLV-III;
3. URGES Member States:
  - (1) to maintain vigilance and carry out as necessary public health strategies for the prevention and control of AIDS;
  - (2) to share information, in all openness, with the Organization and other Member States on the incidence of AIDS, the seroprevalence of LAV/HTLV-III, laboratory methods, clinical experience, and approaches to prevention and control of LAV/HTLV-III infection;
  - (3) to call upon the Organization as necessary for support in the prevention and control of AIDS and other LAV/HTLV-III infections;
4. REQUESTS the Director-General:
  - (1) to further develop activities within the WHO programme on AIDS:
    - (a) to ensure the exchange of information on LAV/HTLV-III, its epidemiology, laboratory and clinical aspects, and prevention and control activities;
    - (b) to prepare and distribute guidelines, manuals and educational materials;
    - (c) to assess commercially available LAV/HTLV-III antibody test kits, develop a simple, inexpensive test for field application, and establish WHO reference reagents;
    - (d) to cooperate with Member States in the development of national programmes for the containment of LAV/HTLV-III infection;
    - (e) to advise Member States on the provision of safe blood and blood products;
    - (f) to promote research on the development of therapeutic agents and vaccines, simian retroviruses, and epidemiological and behavioural aspects of LAV/HTLV-III infection;

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<sup>1</sup> Document EB77/42.

(g) to coordinate collaborative clinical trials of antiviral and other drugs which have been demonstrated in human early phase trials to show efficacy in the treatment of AIDS and/or AIDS-related complex;

(2) to seek additional funds from extrabudgetary sources for the support of national and collective programmes of surveillance and epidemiology, laboratory services, clinical support, and prevention and control.

Hbk Res., Vol. II (1985), 1.16.12

(Sixteenth meeting, 17 January 1986)

EB77.R13 Status of collection of assessed contributions and status of advances to the Working Capital Fund

The Executive Board,

Having considered the report of the Director-General on the status of collection of assessed contributions and of advances to the Working Capital Fund;<sup>1</sup>

Expressing its deep concern at the continuing deterioration in the pattern of payment of contributions by Member States;

1. URGES those Members that are in arrears to pay their outstanding contributions before the Thirty-ninth World Health Assembly, to be convened on 5 May 1986;
2. REQUESTS the Director-General to transmit his report to the Thirty-ninth World Health Assembly;
3. RECOMMENDS to the World Health Assembly the adoption of the following resolution:

The Thirty-ninth World Health Assembly,

Noting with concern that as at 31 December 1985:

(a) the rate of collection of contributions in respect of the effective working budget amounted to 90.90%, being the second lowest rate achieved in the 10-year period 1976 to 1985; and

(b) only 83 Members had paid their current year contributions to the effective working budget in full, representing the lowest number of such Members during that 10-year period, and 48 Members had made no payment towards their current year contributions;

Noting further that 27 Members systematically made no payment towards their current year contributions in each of the three years 1983, 1984 and 1985;

Further noting that, as at 30 September 1985, 43.84% of current year contributions for the effective working budget remained unpaid;

1. EXPRESSES concern at the deteriorating trend in the payment of contributions over the 10-year period 1976 to 1985;
2. CALLS THE ATTENTION of Members to the importance of paying their contributions as early as possible in the year to which they relate;
3. REQUESTS Members that have not yet done so to provide in their national budgets for the payment to the World Health Organization of their contributions when due, in accordance with Financial Regulation 5.6, which provides that instalments of contributions and advances shall be considered as due and payable in full by the first day of the year to which they relate;
4. URGES Members that systematically make a practice of late payment of contributions to take whatever steps may be necessary to ensure earlier payment;

<sup>1</sup> See Annex 7.



5. REQUESTS the Director-General to draw the contents of this resolution to the attention of all Members.

Hbk Res., Vol. II (1985), 6.1.2.4

(Sixteenth meeting, 17 January 1986)

EB77.R14 Members in arrears in the payment of their contributions to an extent which may invoke Article 7 of the Constitution

The Executive Board,

Having considered the report of the Director-General on Members in arrears in the payment of their contributions to an extent which may invoke Article 7 of the Constitution;<sup>1</sup>

Noting that, unless payment is received from Romania before the Thirty-ninth World Health Assembly, to be convened on 5 May 1986, it will be necessary for the Assembly to consider, in accordance with Article 7 of the Constitution and the provisions of paragraph 2 of resolution WHA8.13, whether or not that Member's right to vote should be suspended at the Thirty-ninth World Health Assembly;

Recalling that resolution WHA16.20 requests the Executive Board "to make specific recommendations, with the reasons therefor, to the Health Assembly with regard to any Members in arrears in the payment of contributions to the Organization to an extent which would invoke the provisions of Article 7 of the Constitution";

Noting that Romania's indebtedness includes arrears of contributions dating as far back as 1981;

Recalling that the Committee of the Executive Board to Consider Certain Financial Matters prior to the Thirty-eighth World Health Assembly recommended the suspension of the voting rights of Romania at the Thirty-eighth World Health Assembly;

Recalling the Director-General's statement made at the Thirty-eighth World Health Assembly that he had received a communication from a representative of the Government of Romania to the effect that Romania intended in the very near future to send a delegation to WHO in order to discuss the modalities for settling its arrears of contributions;

Noting further that, to this date, no such delegation has been sent to WHO and communications from the Director-General to the Government of Romania recalling that Member's obligation have remained unanswered;

Expressing the hope that Romania will arrange for payment of its arrears before the Thirty-ninth World Health Assembly, so that the provisions of Article 7 of the Constitution need not be invoked by the Health Assembly;

1. URGES Romania to settle its indebtedness before the opening of the Thirty-ninth World Health Assembly, thus making it unnecessary for the Thirty-ninth World Health Assembly to consider, in accordance with Article 7 of the Constitution, whether or not Romania's right to vote should be suspended;
2. REQUESTS the Director-General to communicate this resolution to Romania and to continue his efforts to achieve an arrangement for payment which might lead to the elimination of its arrears;
3. RECOMMENDS to the Thirty-ninth World Health Assembly that, should Romania still be in arrears in the payment of its financial contributions to the Organization in an amount which equals or exceeds the amount of contributions due from it for the preceding two full years at the time of opening of the Thirty-ninth World Health Assembly, the right to vote of Romania should be suspended during that session of the Health Assembly.

Hbk Res., Vol. II (1985), 6.1.2.4

(Sixteenth meeting, 17 January 1986)

<sup>1</sup> Document EB77/33.

EB77.R15 Composition of the United Nations Joint Staff Pension Board

The Executive Board,

Having considered the report of the Director-General<sup>1</sup> on the composition of the United Nations Joint Staff Pension Board, including the summarized views expressed on the subject at the thirty-fourth session of the United Nations Joint Staff Pension Board and in the Fifth Committee of the United Nations General Assembly at its fortieth session;

Noting that by resolution 40/245 the United Nations General Assembly invited the competent organs of the member organizations of the United Nations Joint Staff Pension Fund to review the size and composition of the United Nations Joint Staff Pension Board, taking into account, where practicable, the views expressed in the Fifth Committee at the fortieth session, and to submit their conclusions to the General Assembly, through the Pension Board, in time to enable the Assembly to take a decision on the matter not later than at its forty-second session;

REQUESTS the Director-General to transmit to the United Nations General Assembly, through the United Nations Joint Staff Pension Board, the following views of the Executive Board:

- (1) the present tripartite composition of the United Nations Joint Staff Pension Board, with equal representation of the three groups, should be preserved;
- (2) on an enlarged Pension Board, in accordance with the principle of equal representation of the three groups of which the Board is composed, the World Health Organization should have three seats, allocated respectively to the World Health Assembly, the Director-General, and the participants;
- (3) formal recognition should be given to the status of the representatives of retired participants with a view to their being entitled to participate fully in the work of the Pension Board.

Hbk Res., Vol. II (1985), 6.2.7.1

(Sixteenth meeting, 17 January 1986)

EB77.R16 Relations with nongovernmental organizations

The Executive Board,

Having examined the report of the Standing Committee on Nongovernmental Organizations;<sup>2</sup>

DECIDES to establish official relations with the following nongovernmental organizations:

International Organization of Consumers Unions  
 International Association of Lions Clubs (Lions Clubs International)  
 International Association for Maternal and Neonatal Health  
 Council of Directors of Institutes of Tropical Medicine in Europe  
 International Clearinghouse for Birth Defects Monitoring Systems  
 International Commission for the Prevention of Alcoholism and Drug Dependency  
 Helen Keller International, Incorporated  
 World Blind Union  
 National Council for International Health, United States of America  
 World Hypertension League  
 International Federation of Hydrotherapy and Climatotherapy.

Hbk Res., Vol. II (1985), 7.2.3

(Sixteenth meeting, 17 January 1986)

<sup>1</sup> Document EB77/39.

<sup>2</sup> Document EB77/38.



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**EB77.R17** Health and development in Africa

The Executive Board,

Bearing in mind its discussions on the economic dimension of the Global Strategy for Health for All, and in particular on the critical situation in Africa;

Recalling the Declaration on the Economic Situation in Africa and the Priority Programme for the Economic Recovery of Africa 1986-1990, which were adopted at the twenty-first session of the Assembly of Heads of State and Government of the Organization of African Unity held in Addis Ababa in July 1985;

Welcoming the decision of the United Nations General Assembly, in resolution 40/40, to convene a special session of the General Assembly at the ministerial level from 27 to 31 May 1986 to consider in depth the critical economic situation in Africa and to focus, in a comprehensive and integrated manner, on the rehabilitation and medium-term and long-term development problems and challenges facing African countries with a view to promoting and adopting action-oriented and concerted measures;

Recalling the statement in the Declaration of Alma-Ata that the promotion and protection of the health of the people is essential to sustained economic and social development and contributes to a better quality of health and to world peace;

Recalling also the affirmation in the Global Strategy for Health for All that the improvement of health not only results from genuine socioeconomic development as distinct from mere economic growth, but is also an essential investment in such development, and that the Strategy will be based on the mutual reinforcement of health development policy and socioeconomic development policy;

Noting that the United Nations General Assembly, in its resolution 34/58 on health as an integral part of development, endorsed the Declaration of Alma-Ata, and in particular the view that primary health care constitutes the key to the ultimate achievement of a healthful society, especially when it is incorporated into the development process, particularly in developing countries, and appealed to Member States to carry out the actions called for in the Declaration of Alma-Ata;

Noting further resolution 36/43 of the United Nations General Assembly, in which it recognized that the implementation of the Global Strategy for Health for All will constitute a valuable contribution to the improvement of overall socioeconomic conditions, endorsed the Strategy as a major contribution of Member States to the attainment of the world-wide social goal of health for all by the year 2000 and to the fulfilment of the International Development Strategy for the Third United Nations Development Decade, and urged all Member States to ensure its implementation as part of their multisectoral efforts to implement the provisions of the International Development Strategy;

1. CONSIDERS it essential that full account be taken of the health aspects of development in Africa at the special session of the United Nations General Assembly in May 1986, in accordance with the Declaration of Alma-Ata and the Global Strategy for Health for All;

2. REQUESTS the Director-General:

(1) to transmit this resolution to the Organization of African Unity and the Secretary-General of the United Nations;

(2) to submit together with the resolution a concise document on health and development in Africa so that it can be taken into account in the preparation for and discussions of the special session of the United Nations General Assembly in May 1986;

(3) to report on the outcome of the special session of the United Nations General Assembly to the Executive Board at its seventy-ninth session in January 1987.

EB77.R18 Appointment of the Committee of the Executive Board to Consider Certain Financial Matters prior to the Thirty-Ninth World Health Assembly

The Executive Board,

Considering the provisions of Financial Regulations 11.3, 11.5 and 12.9 concerning the Director-General's final financial report, including the final accounts, and the report of the External Auditor;

Considering that there will not be a session of the Executive Board between the date of completion of the final financial report and the date of the convening of the Thirty-ninth World Health Assembly;

1. ESTABLISHES a committee of the Executive Board, consisting of Dr A. E. Adou, Dr D. N. Regmi, Dr G. Tadesse and Dr S. Tapa, to meet on Monday, 5 May 1986 to act on behalf of the Board in carrying out the provisions of Financial Regulation 12.9 in respect of the Director-General's final financial report for the financial period 1984-1985 and the report(s) of the External Auditor for 1984-1985, and to consider the following matter on behalf of the Board prior to the Thirty-ninth World Health Assembly: Members in arrears in the payment of their contributions to an extent which may invoke the provisions of Article 7 of the Constitution;

2. DECIDES that, in the event that any member of the committee should be unable to serve, his/her successor or the alternate member of the Board designated by the government concerned, in accordance with Rule 2 of the Rules of Procedure of the Executive Board, shall participate in the work of the committee.



## DECISIONS

(1) Report on meetings of expert committees

The Executive Board considered and took note of the Director-General's report<sup>1</sup> on the meetings of the following expert committees: the WHO Expert Committee on Viral Haemorrhagic Fevers;<sup>2</sup> the WHO Expert Committee on Biological Standardization, thirty-fifth report;<sup>3</sup> the WHO Expert Committee on Vector Biology and Control, ninth report (Safe use of pesticides);<sup>4</sup> and the WHO Expert Committee on the Use of Essential Drugs, second report.<sup>5</sup> It thanked those experts who had taken part in the meetings, and requested the Director-General to follow up the experts' recommendations, as appropriate, in the implementation of the Organization's programmes, bearing in mind the discussion in the Board.

(First meeting, 8 January 1986)

(2) Changes in the programme budget for the financial period 1986-1987

The Executive Board took note of the Director-General's report on changes in the programme budget for the financial period 1986-1987 with respect to global and interregional activities, and of the Programme Committee's report thereon.<sup>6</sup> The Board also noted the changes in regional programme budgets for 1986-1987 reported to it by the Regional Directors.

(Fourth meeting, 9 January 1986)

(3) Guidelines for the WHO Review of Dependence-Producing Psychoactive Substances for International Control

The Executive Board, having considered the report of the Director-General,<sup>7</sup> endorsed the proposed Guidelines for the WHO Review of Dependence-Producing Psychoactive Substances for International Control, as amended in the light of the Board's discussions, and urged their rapid implementation.

(Tenth meeting, 14 January 1986)

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<sup>1</sup> Document EB77/3.

<sup>2</sup> WHO Technical Report Series, No. 721, 1985.

<sup>3</sup> WHO Technical Report Series, No. 725, 1985.

<sup>4</sup> WHO Technical Report Series, No. 720, 1985.

<sup>5</sup> WHO Technical Report Series, No. 722, 1985.

<sup>6</sup> See Annex 8.

<sup>7</sup> See Annex 9.

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(4) Reports of the Joint Inspection Unit

The Executive Board, having considered the reports of the Joint Inspection Unit on "Drug abuse control activities in the United Nations system" and "The changing use of computers in organizations of the United Nations system in Geneva: management issues", thanked the Inspectors for their reports and expressed its agreement with the Director-General's comments thereon.<sup>1</sup>

(Sixteenth meeting, 17 January 1986)

(5) Report of the International Civil Service Commission

The Executive Board took note of the eleventh annual report of the International Civil Service Commission,<sup>2</sup> submitted in accordance with Article 17 of the Commission's Statute.

(Sixteenth meeting, 17 January 1986)

(6) Members in arrears in the payment of their contributions to an extent which may invoke Article 7 of the Constitution

The Executive Board, having noted with concern the report of the Director-General on Members in arrears in the payment of their contributions to an extent which may invoke Article 7 of the Constitution,<sup>3</sup> requested the Director-General to continue his contacts with these Members, and to submit his findings to the committee of the Executive Board which is to consider certain financial matters prior to the Thirty-ninth World Health Assembly. That committee would then make recommendations to the Health Assembly on behalf of the Board, taking account of the discussions in the Board.

(Sixteenth meeting, 17 January 1986)

(7) Global Strategy for Health for All by the Year 2000: political dimension

The Executive Board, having discussed the political dimension of the Global Strategy for Health for All by the Year 2000 in the presence of the President of the Thirty-eighth World Health Assembly, decided to request its representatives to the Thirty-ninth World Health Assembly to reflect the Board's discussion in their report to that Assembly by drawing its attention to the Director-General's discussion paper,<sup>4</sup> to the summary record of the Board's discussion and to the Director-General's response to the debate,<sup>5</sup> all of which will be published in the records of the Board's proceedings.

(Sixteenth meeting, 17 January 1986)

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<sup>1</sup> Document EB77/36.

<sup>2</sup> Document EB77/37.

<sup>3</sup> Document EB77/33.

<sup>4</sup> See Annex 10.

<sup>5</sup> See document EB77/1986/REC/2 (Executive Board, seventy-seventh session: Summary records).



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(8) Relations with nongovernmental organizations

The Executive Board, having considered the report of the Standing Committee on Nongovernmental Organizations,<sup>1</sup> decided to endorse the revised Working Principles Governing the Admission of Nongovernmental Organizations into Official Relations with WHO, annexed to the Standing Committee's report, with the exception of section 5. With regard to this section, concerning relations with nongovernmental organizations at regional and national levels, the Board requested the regional committees at their 1986 sessions to consider these general principles and, if required, to expand them into more detailed principles for establishing relations with regional and national nongovernmental organizations. The results of their discussions should then be reported back to the Board at its seventy-ninth session in January 1987. With reference to sections 1, 2, 3, 4, 6 and 7 of the revised Working Principles, the Board requested the Director-General to apply these principles on a trial basis and report back on the experience gained to the Board at its seventy-ninth session. At that session, the Board would finalize its recommendations on the Working Principles relating to global, regional and national nongovernmental organizations, and submit them to the Fortieth World Health Assembly in May 1987.

The Board further decided to maintain official relations with the 52 nongovernmental organizations reviewed at its current session.<sup>2</sup> However, with regard to the Biometric Society, the Commonwealth Medical Association and the International Sociological Association, the Board requested that efforts be made to intensify collaboration with these organizations and that a review of progress made be presented to the Board at its seventy-ninth session. With regard to the remaining 49 organizations, the Board expressed its appreciation for their valuable contribution to the work of WHO.

(Sixteenth meeting, 17 January 1986)

(9) Award of the Darling Foundation Prize

The Executive Board, after considering the report of the Darling Foundation Committee, awarded the sixteenth Prize to Professor R. H. Black and the seventeenth Prize to Professor D. F. Clyde for their outstanding contributions in the field of epidemiology, therapy and control of malaria in different parts of the world. It endorsed the Foundation Committee's recommendation that, in accordance with Article 8 of the Regulations of the Foundation, the prizes be presented during a meeting of the Thirty-ninth World Health Assembly in May 1986; should a recipient be unable to attend the award ceremony in person, the prize would be presented to a person representing him.

(Seventeenth meeting, 17 January 1986)

(10) Award of the Léon Bernard Foundation Prize

The Executive Board, after considering the report of the Léon Bernard Foundation Committee, awarded the Léon Bernard Foundation Prize for 1986 to Professor Olikoye Ransome-Kuti for his outstanding service in the field of social medicine.

(Seventeenth meeting, 17 January 1986)

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<sup>1</sup> Document EB77/38.

<sup>2</sup> See Annex 11.

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(11) Award of the Dr A. T. Shousha Foundation Prize

The Executive Board, after considering the report of the Dr A. T. Shousha Foundation Committee, awarded the Dr A. T. Shousha Foundation Prize for 1986 to Dr Mohamed Labib Ibrahim Hassan for his most significant contribution to public health in the geographical area in which Dr A. T. Shousha served the World Health Organization.

(Seventeenth meeting, 17 January 1986)

(12) Award of the Jacques Parisot Foundation Fellowship

The Executive Board, after considering the report of the Jacques Parisot Foundation Committee, awarded the Jacques Parisot Foundation Fellowship to Dr Pamela Mary Enderby.

(Seventeenth meeting, 17 January 1986)

(13) Award of the Sasakawa Health Prize

The Executive Board, after considering the report of the Sasakawa Health Prize Committee, awarded the Sasakawa Health Prize for 1986 jointly to the Ayadaw Township People's Health Plan Committee, Burma, Dr Lucille Teasdale Corti and Dr Pietro Corti, and Dr Amorn Nondasuta for their innovative work in health development. Of the total sum of US\$ 100 000 available for the Prize, the Board decided that the Ayadaw Township People's Health Plan Committee should receive US\$ 40 000, Dr Lucille Teasdale Corti and Dr Pietro Corti US\$ 30 000, and Dr Amorn Nondasuta US\$ 30 000.

(Seventeenth meeting, 17 January 1986)

(14) Provisional agenda for and duration of the Thirty-ninth World Health Assembly

The Executive Board approved the Director-General's proposals for the provisional agenda of the Thirty-ninth World Health Assembly,<sup>1</sup> as amended by the Board. Recalling its earlier decision<sup>2</sup> that the Thirty-ninth World Health Assembly should open on Monday, 5 May 1986, at noon, the Board noted that the Thirty-sixth World Health Assembly had decided<sup>3</sup> that the duration of the Health Assembly should be limited to two weeks in even-numbered years and that, as a consequence, the Thirty-ninth World Health Assembly should close no later than Friday, 16 May 1986.

(Seventeenth meeting, 17 January 1986)

(15) Date and place of the seventy-eighth session of the Executive Board

The Executive Board decided that its seventy-eighth session should be convened on Monday, 19 May 1986, at WHO headquarters, Geneva, Switzerland.

(Seventeenth meeting, 17 January 1986)

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<sup>1</sup> Document EB77/41.

<sup>2</sup> Decision EB76(13).

<sup>3</sup> Resolution WHA36.16.



## **ANNEXES**





## ANNEX 1

### ADDITIONAL SUPPORT TO NATIONAL STRATEGIES FOR HEALTH FOR ALL IN THE LEAST DEVELOPED AMONG DEVELOPING COUNTRIES<sup>1</sup>

[EB77/15 - 20 November 1985]

#### Report by the Director-General

#### I. INTRODUCTION

1. The Executive Board, in its seventy-fifth session in January 1985, considered the Director-General's progress report on the Global Strategy for Health for All by the Year 2000.<sup>2</sup> In the discussion, members noted that recent alarming trends in the economic and health situation of many developing countries, particularly the least developed among them, had been aggravated by natural and man-made disasters (a list of the least developed countries is appended). The already vulnerable economies of these countries had been strained to ensure the physical survival of their peoples; even if the threat to survival was averted, the current critical situation might jeopardize the implementation of their health strategies. Concern was expressed by many members that all possible action should be undertaken to mobilize new financial and technical resources to enable the least developed countries to pursue their goals, to strengthen their health infrastructure and to ensure a better quality of life. The Board recommended in its resolution EB75.R14 that the Thirty-eighth World Health Assembly consider the matter.

2. The Health Assembly reaffirmed that concern over the deteriorating health situation in the least developed among the developing countries, which stood in flagrant contradiction to the Global Strategy for Health for All adopted unanimously by WHO's Member States. It requested the Director-General: (1) to mobilize new financial and technical resources to support national strategies for health for all in the least developed among developing countries within the existing Special Account for Assistance to the Least Developed Among Developing Countries in the Voluntary Fund for Health Promotion; and (2) to prepare a report for further consideration by the Executive Board and the Health Assembly on possible actions which can support these countries in strengthening their health infrastructures and thereby enhance their capacities to attract and absorb significant quantities of new health resources (resolution WHA38.16).

3. The estimated 300 million people living in the 36 least developed countries (LDCs) are trapped in a vicious circle of poverty, malnutrition, disease and despair that saps their energy, reduces their productive capacity, and carries a heavy toll of morbidity and mortality. These countries are the poorest and economically weakest of the developing nations, with the most formidable structural, social and health problems. Their restricted resource base, complicated by their weak health infrastructure and the inadequate numbers of qualified health workers, has made it difficult for them to move with any vigour towards a realization of their national health-for-all strategies. While they have primary responsibility for their own overall development, concerted action and support by the international community will be required to reverse the serious health situation they face. This support will need to come from the developed countries, from the developing countries which may be in a position to be of assistance, and from relevant international and nongovernmental organizations.

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<sup>1</sup> See resolution EB77.R2.

<sup>2</sup> Document WHA38/1985/REC/1, Annex 6.



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## II. ACTION BY THE UNITED NATIONS SYSTEM

4. The organizations of the United Nations system undertook a new initiative at the United Nations Conference on the Least Developed Countries held in Paris in 1981 when they launched the Substantial New Programme of Action for the 1980s for the Least Developed Countries (SNPA).<sup>1</sup> The Conference affirmed that there is an immediate need for a greatly expanded programme, including a major increase in the transfer of additional resources, to meet the critical needs of the LDCs and to help them promote more rapid socioeconomic development. Participants emphasized the particular importance of the contribution that economic and technical cooperation among developing countries can make, inter alia, to the development of the least developed among them.

5. The main objectives for intensified international support to the LDCs within the framework of the SNPA included special attention to food security and agricultural development; human resources and social development, including health; natural resources and energy development; manufacturing; physical and institutional infrastructure development; environment; foreign trade; economic restructuring and strengthening; and disaster assistance. Health, nutrition and population issues rank among the priorities identified for specific attention in the SNPA, and WHO's participation ensured that the Global Strategy for Health for All by the Year 2000 based on primary health care was adopted as the approach to be followed.

6. The United Nations Conference on Trade and Development (UNCTAD) has been designated as coordinating secretariat for the SNPA, and the United Nations Development Programme (UNDP) and the World Bank have taken the lead in focusing the resources of the donor community on the specific needs of the LDCs. Within the limitations imposed by the modest increases in funding supplied to UNDP, preferential funding to the LDCs has been increased and UNDP has channelled greater contributions through its Special Measures Fund for the Least Developed Countries and the United Nations Capital Development Fund (UNCDF). The main collaborating mechanisms at the national level for reviewing needs and for the generation of the required external resources for individual countries have been the UNDP-supported round table meetings of donors and agencies of the United Nations system and the World Bank-supported consultative group meetings. WHO has played a significant role in support and advocacy on behalf of health sector requirements during the first half of this important decade.

7. A mid-term review of the progress made towards the objectives of the SNPA was carried out in October 1985 by all concerned governments and donors under the auspices of UNCTAD. There was general agreement that inadequate progress had been made in reaching the established targets. The success of formal donor consultations in mobilizing additional resources for the LDCs concerned has varied from case to case over the years, but it was conceded that the results of round table meetings in the early 1980s had been generally disappointing. The widespread economic recession of the early 1980s has restrained any significant increase in official development assistance during this period and for the foreseeable future. The situation has been further complicated by the demands placed upon the donor community by the emergency situations in drought-affected countries, war zones and assistance to refugees. In view of all this, governments represented at the mid-term review of the SNPA emphasized the need for renewed efforts to ensure that the LDCs would receive priority attention from donor agencies from now to the end of the decade.

## III. MOBILIZATION OF TECHNICAL AND FINANCIAL RESOURCES BY WHO FOR THE LEAST DEVELOPED COUNTRIES

### Technical resources

8. In addition to its overall policy and operational coordination at the international level, WHO provides technical resources to the developing countries for direct support to their national health development. Fundamental to this support, and particularly crucial for the least developed countries, is the support provided for strengthening health system infrastructure, which is aimed at establishing comprehensive health systems based on primary health care. The infrastructure provides the essential framework for the development of health science and technology for the protection and promotion of health and the control of disease. The establishment, progressive strengthening, organization and operational

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<sup>1</sup> Reported to the Executive Board in January 1982 (document EB69/44).



management of health system infrastructures, including the related manpower, is achieved through the systematic application of a well-defined managerial process and related health systems research based on valid, available information. Support is provided to assist the defining of national strategies for health for all based on overall health policy and the articulation of a clear national plan of action for primary health care to achieve the delivery of well-defined country-wide health programmes. Support is also provided for the development of information systems to analyse the health situation and trends as the basis for the planning of health systems. In most LDCs, the existing health infrastructure typically lacks coherent and coordinated organization and the management capacities to assure the application of the essential elements of primary health care to entire populations. WHO support in these areas aims also at increasing community involvement and coordinated intersectoral action to ensure the best application of all national resources. Particular attention is paid to the selection of technologies appropriate for use at the local and national level and the training of people who form the key to developing and sustaining national health programmes.

9. Technical cooperation among developing countries (TCDC) is another vital force for initiating, designing, organizing and promoting cooperation among developing countries for the sharing of pooled knowledge, experience and technical resources. WHO plays a catalytic and supportive role in this cooperation, supporting, for example, the production and distribution of essential drugs and medical equipment, the development of low-cost technology for water supply and wastes disposal, joint training programmes for manpower development, and collaborative research.

10. Technical and managerial support to LDCs has been geared towards identifying those activities that will gain the optimal impact from domestic (national) resources as a first and necessary step to identifying the need for additional external resources which may be required from enlightened donor partners. This has been facilitated through the methods incorporated in the country health resource utilization (CRU) reviews, which are now seen as an integral part of the managerial process for national health development. The starting point is the study of national resource utilization, in order to rationalize its application for the development of primary health care, reallocations being recommended as necessary to meet that end. External resources already available must be examined to ensure their most effective use. A major output of each CRU review is the preparation of well conceived proposals for external funding which are then made available for donor review. Since they were first used in 1981, the CRU reviews have been applied as a priority to LDCs, and 17 LDCs have now carried out their own reviews. The proposals have been used successfully in bilateral negotiations with individual donors in some cases. Other countries have chosen to convene follow-up round table meetings for the health sector in the context of the SNPA.

11. Recent years have also seen the expansion and development of new programmes which carry primary benefits to the developing countries and address some of the most pressing problems in the LDCs. More effort is still required to ensure that the work of these new programmes is coordinated to enhance the building up of the basic infrastructure for primary health care and the capacity of the country to sustain the programmes. The Action Programme on Essential Drugs and Vaccines is focusing attention on the LDCs and has concrete activities under way in 20 out of the 36 LDCs; plans call for increasing that number before the end of the 1980s. Some 20 countries are the beneficiaries of nutrition support programmes to combat malnutrition, most of them among the LDCs. Most of the LDCs have, with WHO support, developed their expanded programmes on immunization and their diarrhoeal disease control programmes as part of overall primary health care efforts in order to interrupt the vicious circle of the preventable but devastating diseases of childhood. Other activities supported by WHO from within the country and from the regional and global level, ranging from the promotion of safe drinking-water supply and sanitation to action for the prevention of blindness, tropical disease research and new vaccine development, all have a bias towards the needs of the countries where infrastructure is the weakest and where the benefits will be the greatest. Once again, the benefits of these new programmes and of discoveries in such fields as tropical disease research and new vaccine development can have their maximum effect only when the health system infrastructure provides the framework for their application.

#### Financial resources

12. With regard to WHO's regular budget, the situation has evolved favourably in that a growing proportion of resources is being devoted to technical cooperation with and services to Member States. This trend has resulted from the Health Assembly's historic decision in resolution WHA29.48 (May 1976) calling upon the Director-General to reorient the working of



the Organization with a view to ensuring that allocations of the regular programme budget reach the level of at least 60% in real terms towards technical cooperation and provision of services by 1980. Not only has this goal been reached but it has actually been surpassed as a result of recent years' budgetary policy placing increasing emphasis on activities at country level. Thus, as shown in the programme budget for 1986-1987, nearly 70% of the regular budget is now allocated to country and regional levels. Moreover, despite recent years' budgetary constraints with zero real growth, it has been found possible also in 1986-1987 to provide a 4% real increase in country allocations, offset by decreases at other levels. As a result of this policy it has, therefore, been possible also in respect of the regular budget to increase the resources being made available for health activities in the developing countries, including LDCs.

13. The importance of the development of health system infrastructure is reflected in the regular programme budget by the fact that almost 33% of regular budget funds are devoted to this type of support. Included in this 33% is the 11% of the budget devoted to health manpower development alone.

14. Regional programme budget policies are aimed at making the maximum use of the Organization's resources to the benefit of Member States, especially the LDCs. An illustration of this commitment can be seen in the proposed programme budget for the biennium 1986-1987 for Africa, where the allocation for intercountry projects has been decreased by 16.8% to permit a corresponding increase in individual country allocations of some 17.5%. In the Eastern Mediterranean Region, the country allocations in WHO's regular budget go almost entirely to the LDCs, the more wealthy countries having relinquished their share and, in addition, provided extrabudgetary resources for the LDCs of the Region.

15. The importance of strengthening health system infrastructure within the context of WHO support to individual countries is seen most clearly at this level. An examination of the country programmes for the 36 LDCs reveals that, on the average, WHO's resources are applied to activities in health infrastructure development with far greater weight than activities in other areas. An average of 63% (64.8% in 1982-1983, 63.1% in 1984-1985, 61.6% in 1986-1987) of the country programme budget in the LDCs is aimed specifically at infrastructure strengthening.

16. The importance of extrabudgetary resources for WHO's work and the provision of assistance to developing countries has long been recognized by all concerned. Over the years the Board and the Health Assembly have adopted a number of resolutions and decisions urging Member States and all other existing and potential sources of extrabudgetary funds to make voluntary contributions in support of the Organization's work, with particular reference to the needs of the developing countries. At the same time they have requested the Director-General to continue to develop appropriate mechanisms for attracting and coordinating an increased volume of bilateral and multilateral aid for health purposes.

17. Following the amalgamation of a number of special accounts into the Voluntary Fund for Health Promotion, the past two decades have seen a significant growth in extrabudgetary resources available to the Organization for programme purposes, both as part of and in addition to the Fund. The special accounts channel contributions to action in the areas of malaria, community water supply, leprosy, diarrhoeal diseases, the prevention of blindness, and the Expanded Programme on Immunization. Another is the Special Account for Assistance to the Least Developed among the Developing Countries. Thus, this latter account is only one account among many which provide specific and directed support to priority programmes in LDCs. More recently this trend has been accentuated as a result of the establishment of a number of important special programmes, such as the Onchocerciasis Control Programme in the Volta River Basin Area and the Special Programme for Research and Training in Tropical Diseases. A new grant of US\$ 250 000 has just been received for health resource utilization, rationalization and mobilization work in the African Region. The Director-General has also pursued new resource mobilization mechanisms, such as the creation of the Primary Health Care Initiative Fund.

18. The Primary Health Care Initiative Fund was established in 1981 to support countries in their planning process for primary health care, and particularly to support their efforts in reviewing their resource utilization. This Fund has been applied in a priority way to LDCs and, in a number of cases, has been used to support the carrying out of country health resource utilization reviews in those countries. The Fund has expended some US\$ 750 000 in providing such support to 17 LDCs to date, and ensuring the printing and distribution of the resource utilization review documents to donors and round table meetings.



19. In purely financial terms the increased support of WHO's work from extrabudgetary resources is illustrated, for example, by the fact that the cumulative total contributions to the Voluntary Fund for Health Promotion from inception until the end of 1984 amounted to US\$ 446 956 835. During the last 10 years the annual contributions to the Fund increased significantly from a level of about US\$ 15 million in 1974 to some US\$ 35 million in 1984. Similarly, the total contributions made to the Onchocerciasis Control Programme in the Volta River Basin Area from inception until 1984 amount to about US\$ 155 million and to the Special Programme for Research and Training in Tropical Diseases to nearly US\$ 160 million. For these two major programmes the currently anticipated extrabudgetary financing stands at about US\$ 45 million and US\$ 64 million respectively for 1986-1987. As can be seen, very substantial progress has been made during the past decade in the mobilization of extrabudgetary resources to the benefit of the Organization's work and thus of its Member States, in particular the developing countries (including the LDCs). This encouraging situation is also illustrated by the fact that of the two main sources of financing the work of WHO for 1986-1987, nearly half is accounted for by sources of funds other than the regular budget.

#### IV. CONTINUING ACTION BY WHO FOR THE MOBILIZATION OF RESOURCES

20. Resource mobilization efforts continue in a wide variety of ways to reinforce what WHO is already doing to strengthen health system infrastructure in developing countries. New and active liaison with the major donor capitals is being fostered with a view to enhancing the commitment of enlightened donors to health development programmes which reflect the priority needs of developing countries. These cooperative programmes with donors are regularly reviewed during annual meetings with such donor countries as Denmark, Finland, Sweden, and the United States of America. WHO continues to assure the overall coordination of the mobilization of resources for its technical support activities, promoting coordination among these donor efforts through regular pledging meetings and coordinating bodies. Special collaboration with the World Bank, UNDP and major donor partners exists to ensure rapid progress in the areas of drinking-water supply and sanitation, tropical disease research, and human reproduction.

21. The structures and mechanisms, therefore, already exist for the continuing efforts by the Director-General and the Secretariat to mobilize financial and technical resources to support the priority programmes of the least developed among the developing countries. The Organization has committed itself to a reinforcement of all of these efforts to support the LDCs in their struggle to improve the quality of life of their peoples.

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AppendixLIST OF LEAST DEVELOPED COUNTRIES BY WHO REGION<sup>1</sup>Africa (23)

Benin  
Botswana  
Burkina Faso  
Burundi  
Central African Republic  
Chad  
Cape Verde  
Comoros  
Equatorial Guinea  
Ethiopia  
Gambia  
Guinea  
Guinea-Bissau  
Lesotho  
Malawi  
Mali  
Niger  
Rwanda  
Sao Tome and Principe  
Sierra Leone  
Togo  
Uganda  
United Republic of Tanzania

Americas (1)

Haiti

South-East Asia (4)

Bangladesh  
Bhutan  
Maldives  
Nepal

Eastern Mediterranean (6)

Afghanistan  
Democratic Yemen  
Djibouti  
Somalia  
Sudan  
Yemen

Western Pacific (2)

Lao People's Democratic Republic  
Samoa

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<sup>1</sup> Total of 36 countries, with a population of approximately 300 million.



ANNEX 2

RECENT DEVELOPMENTS IN TROPICAL DISEASES RESEARCH

[EB77/21 - 27 November 1985]

Progress report by the Director-General

The following report reviews the progress and current status of activities conducted with the support of the UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases (TDR).

TDR is a goal-oriented research and training programme with two interdependent objectives: through research and development, to obtain new and improve existing tools for the control of major tropical diseases; to strengthen the research capabilities of the tropical countries. The research is conducted on a global basis by multidisciplinary scientific working groups; the training and institution-strengthening activities are limited to the tropical countries where the diseases are endemic. The diseases selected for attack are malaria, schistosomiasis, filariasis (including onchocerciasis), the trypanosomiasis (both African sleeping sickness and the American form, Chagas' disease), the leishmaniases and leprosy. Scientific working groups are also active in biological control of vectors, epidemiology, and social and economic research.

Overall, TDR's main achievement has been the mobilization of academic, industrial and other institutions to support research on major tropical diseases. The increasing involvement in this research of scientists and institutions of the developing countries in which these diseases are endemic can be seen as part of this achievement. Testifying to the success of TDR's impact on these diverse research areas is the increasing number of scientific publications stemming from TDR-funded projects - over 4000 by 31 October 1985, just over half the authors being scientists from developing countries.

More specifically, the Programme has produced a number of tangible results: some 50 "products", including potential vaccines (against malaria and leprosy, for example); biological toxins for disease vector control (such as *Bacillus thuringiensis* H-14 and *B. sphaericus*); new drugs (such as the antimalarial, mefloquine, and a new agent being tested against African sleeping sickness, DL- $\alpha$ -difluoromethylornithine or DFMO); diagnostic tests (for African trypanosomiasis, Chagas' disease, schistosomiasis, malaria and leprosy); and tests to measure sensitivity of parasites (malaria parasites, for example) to drugs.

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## 1. INTRODUCTION

TDR is now in its third stage of development. Planning dominated the first stage. The second stage focused on implementing plans. The present, third stage in TDR's development is marked by results: usable products and technologies are emerging from work supported by the Programme. Four main types of tool are being developed for the control of the six "target" diseases: drugs, vaccines, diagnostic methods and new vector control techniques. Some are ready for use or are actually being used for disease control and treatment. Others are at an advanced stage of development: they have been shown to be effective but require refinement before they can be used. Yet others are still only promising leads derived from TDR-supported research.

Not all the developments described here stem originally from TDR-supported work. Nor have they all been supported exclusively by the Programme. But in many cases where original discoveries were made outside the Programme their subsequent development - including the many stages of laboratory and field testing - has benefited from TDR support.

The following is a brief account of recent progress in TDR's activities. Further details can be found in many of the documents published by TDR, in particular the Seventh Programme Report, which is issued in English and French.<sup>1</sup>

## 2. MALARIA

Malaria is still the most important parasitic disease in the tropics. In 1983, the most recent year for which reliable figures are available, 389 million people - one-twelfth of the world's population - were living in areas, mostly in Africa, where malaria is still highly endemic and where no specific antimalaria measures are being applied. A further 2227 million - 48% of the world's population - were living in areas where malaria is still endemic but where control measures have somewhat reduced its level of endemicity.

### 2.1 The organisms

Of the hundred or so species of Plasmodia that exist in nature, four are generally pathogenic to man: Plasmodium falciparum, P. vivax, P. ovale and P. malariae. P. falciparum is the parasite responsible for most cases of malaria (80% worldwide) and for the most

<sup>1</sup>UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases. Tropical disease research: Seventh programme report, 1 January 1983-31 December 1984. Geneva, World Health Organization, 1985.



severe, often fatal, forms of the disease. It is deeply entrenched in tropical Africa. *P. vivax* is the commonest species in the Americas and in Asia. These two species account for most of the human suffering and economic loss due to malaria in the world today. In southern Asia, where renewed efforts at malaria control have shown recent successes, the incidence of *P. vivax* infection has fallen but that of *P. falciparum* has remained virtually unchanged. This is an ominous sign and apparently due to drug resistance. Any relaxation of malaria control efforts in these areas could well cause an explosive upsurge in incidence.

## 2.2 Control

The tools and methods available for malaria control have not (with the exception of the new antimalarial drug, mefloquine) increased significantly in number over the past three decades and have even declined in efficacy. In many areas, resistance of vector anopheline mosquitos to insecticides has prompted a shift from chlorinated hydrocarbon insecticides, such as DDT and HCH, to organophosphorous compounds or the more expensive carbamides. Exophilic (outdoor) vectors, such as the *Anopheles balabacensis* mosquitos in South-East Asia or the *An. nuneztovari* group in South America, are not amenable to control by indoor spraying of insecticides, and the inaccessibility and wide distribution of their breeding places make larval control practically impossible.

Resistance of *P. falciparum* to drugs, however, has probably become the most important threat to effective control of the disease. It has arisen largely through a combination of massive antimalarial drug deployment and a failure to combat transmission of the disease. Population movements have also played a part in the occurrence and spread of resistance. By the end of 1984 chloroquine-resistant *P. falciparum* was present in 15 countries in eastern Asia and Oceania, 10 in South America and 15 in Africa (mostly south of the equator, where it had reached the Atlantic coast in three countries). Resistance to the second-line sulfonamide/pyrimethamine combination is already widespread in parts of South-East Asia and South America, and there have been recent reports of declining efficacy of treatment in other areas, including East Africa. Although chloroquine and especially amodiaquine are still effective in most "semi-immune" individuals in tropical Africa, their ineffectiveness in an increasing number of non-immune patients poses a major threat to millions of infants and young children.

Apart from technical problems, malaria control has also suffered from inflationary increases in the costs of insecticides, drugs, equipment and fuel. In contrast, government budgetary expenditure on malaria control has not increased and, in many countries, has even been cut back. All in all, the balance favours the malaria parasite.

Current efforts at malaria control hold only limited promise. New approaches are clearly required, and this is the goal of TDR's three scientific working groups (SWGs) on malaria: that on the Chemotherapy of Malaria (CHEMAL) pursues the development of new antimalarial drugs; that on the Immunology of Malaria (IMMAL) has made considerable progress in the development of "causal" prophylactic vaccine (acting directly on the cause of the disease), clinically attenuating vaccine and transmission-blocking vaccine; and that on Applied Field Research in Malaria (FIELDMAL) aims at the improvement of epidemiological and control technology and the validation and field application of new tools emanating from the work of CHEMAL and IMMAL.

## 2.3 Chemotherapy of malaria

New drugs are urgently needed that possess blood schizontocidal, tissue schizontocidal and gametocytocidal properties. They must be inexpensive, safe, long-acting and effective in preventing relapses.

Mefloquine, a quinolinemethanol, is a potent blood schizontocide active against multi-resistant falciparum malaria. It continues to be developed by the Scientific Working Group on the Chemotherapy of Malaria (CHEMAL) in collaboration with Hoffmann-La Roche and Company of Basel, Switzerland, and the Walter Reed Army Institute of Research, Washington, D.C. Studies carried out so far have permitted its registration for treatment in adults (except pregnant women) and in children over two years of age. Trials of the "monosubstance" (mefloquine alone) in pregnant women, in whom the effects of malaria can be devastating, have begun.

Potential resistance to mefloquine is causing great concern mainly because: (1) the drug is structurally similar to other currently used blood schizontocides, such as quinine,



amodiaquine and chloroquine; (2) stable resistance has been induced in the laboratory; and (3) isolated cases of mefloquine-resistant falciparum infection have been observed in the field. Everything must be done to prevent mefloquine resistance from becoming a major problem. One approach is to ensure, as far as possible, that the drug will be used rationally: for example, in suitable combinations with other drugs - a strategy known to reduce the risk of resistance. One drug combination has already been developed, and a WHO Scientific Group has made recommendations for the use of mefloquine alone and in combination with other drugs, stating "(a) that governments should legislate for strict control of the importation, distribution, and utilization of mefloquine alone or in drug combinations; (b) that the use of mefloquine by communities in endemic areas should be restricted to the treatment of acute malaria attacks that are likely to be due to multiple drug-resistant *P. falciparum*...; (c) that, when available, drug combinations known to delay the development of drug resistance (as might be the case with the mefloquine/sulfadoxine/pyrimethamine combination currently under development) should be used for prophylaxis or treatment, when necessary, instead of mefloquine; (d) that mefloquine should not be distributed for use as a single prophylactic drug by residents in endemic areas".<sup>1</sup>

Another approach is to develop a second generation of drugs, to be used if resistance becomes widespread. Such drugs should preferably have different structures and modes of action from mefloquine and the other drugs currently in use, lest cross-resistance diminish their usefulness. CHEMAL is collaborating with pharmaceutical firms on at least five compounds, which are in various pre-clinical and clinical stages of development.

Qinghaosu (artemisinin), the active principle of the Chinese medicinal herb *Artemisia annua*, is a structurally novel antimalarial. The parent compound and several derivatives have been widely studied by Chinese scientists and shown to have a rapid action in the treatment of chloroquine-resistant falciparum malaria. The assessment of this series of compounds is of extremely high priority.

Developing a drug from synthesis to clinical use can take many years (for mefloquine it took over 15). Priority is therefore already being given to the development of a third series of blood schizontocides. The steps in this process include: synthesis of "lead" compounds (e.g., simple trioxanes, structures derived from the more complex Qinghaosu molecule); evaluation of plant-derived compounds known to have antimalarial activity; and studies on basic parasite biology and biochemistry to provide leads for the rational development of new compounds selectively toxic to the parasite (sparing the host).

The emergence and spread of resistance to widely used antimalarial drugs are regarded as inevitable. Susceptibility of the parasite to existing drugs must therefore be monitored and baseline sensitivity data obtained for new drugs. High priority is given to the development of tests for these purposes. Basic studies on the genetics of drug resistance are also in progress. It is hoped that these lines of research will lead to a more rational approach to the development and use of antimalarial drugs.

In circumstances where prophylactic measures are called for, a drug specially formulated to act for up to three months would ensure maximum patient compliance. Feasibility studies, using pyrimethamine as a model, are almost completed. Further development of long-acting formulations depends on the future availability of drugs suitable for operational use.

### 2.3.1 Highlights of recent activities

- Mefloquine, the first new antimalarial to be clinically tested in 20 years, has been registered in Switzerland for the prophylaxis and treatment of malaria in adults (except pregnant women) and in children over two years of age. The triple drug combination comprising mefloquine, sulfadoxine and pyrimethamine has been registered in Switzerland and Thailand. Restricted use of the combination in adults and in children over two years of age began in Thailand in late 1984.

<sup>1</sup>WHO Technical Report Series, No. 711, 1984 (Advances in malaria chemotherapy: report of a WHO Scientific Group), section 5.2 (4).



- Contacts are being maintained with five pharmaceutical companies on the preclinical and clinical development of new blood schizontocidal compounds belonging to a variety of chemical classes. Several simple trioxane ring compounds have also been shown to possess blood schizontocidal activity and several new 8-aminoquinolines, tissue schizontocidal activity. Primaquine itself has been the subject of intense research, essentially on pharmacokinetics, metabolism and mode of action, and significant findings are emerging.
- Kits for the in vitro testing of P. falciparum for susceptibility to sulfadoxine and pyrimethamine are being standardized in a multicentre study in Switzerland, Thailand and the United States of America, and field-tested in several malaria-endemic countries.
- Exoerythrocytic stages of P. vivax have been successfully grown in culture, paving the way for the development of in vitro screens for tissue schizontocidal activity of primaquine, its metabolites and other 8-aminoquinolines.

### 2.3.2 Diagnostic tests

Current methods of diagnosing malaria involve examination of stained blood films under the microscope, a reasonably sensitive and specific procedure, but time-consuming and expensive and requiring trained personnel. Immunodiagnostic techniques are being developed by the Scientific Working Group on the Immunology of Malaria (IMMAL) (see section 2.4 below), while CHEMAL is exploring the diagnostic potential of DNA probes, which have already been developed for P. falciparum and P. vivax in a CHEMAL-supported study conducted at Harvard Medical School in Boston, MA, USA. Similar studies with P. falciparum have been conducted by others outside the Programme. A major advantage of DNA probes is the possibility of rapidly testing many blood samples, a particularly useful asset in large population surveys. DNA probes appear to have adequate specificity, and their current sensitivity approaches that of methods employing well-trained microscopists. Initial field tests have yielded promising results. Studies aimed at increasing the sensitivity of DNA-probe methods and at developing simple, non-radioisotopic methods are being conducted with CHEMAL support.

### 2.3.3 The future

CHEMAL will continue clinical development of candidate antimalarials already identified and will search for new antimalarials. In particular, Phase III trials of mefloquine and of mefloquine in combination with other drugs will be completed. Phase I and II trials of other blood schizontocidal drugs will begin. Studies of the tissue schizontocide, primaquine, will continue, and preclinical studies will be undertaken on selected Qinghaosu derivatives. Tests for sensitivity of P. falciparum to selected antimalarials and for the detection and quantification of antimalarials in blood and tissue will be developed.

### 2.4 Immunology of malaria

The development of vaccines and the improvement of immunodiagnostic methods have remained the two major research priorities of IMMAL.

Malaria vaccine research is now being vigorously pursued in a large number of laboratories and there has been a virtual explosion of scientific publications on the subject. Pessimism about the feasibility of developing effective vaccines against malaria has been largely replaced by a mood of cautious optimism, based, first, on recent advances in applying molecular biology to malaria research, and secondly, on the expectation that new vaccine production technology will be applicable to malaria.

The strategy for malaria vaccine development is based on the identification and characterization of those parasite antigens which specifically stimulate protective immune responses. The next phases involve cloning of the genes coding for the protective antigens or antigenic structures (epitopes), their expression in bacteria, analysis of their nucleotide sequences, deduction of the amino-acid sequences of the encoded molecules and production of the molecules by genetic engineering methods or chemical synthesis.



Much of the malaria parasite's life-cycle involving the vertebrate host takes place within the liver or blood cells, where the organisms are relatively well protected from immune attack. Interest is therefore focused on the extracellular forms - sporozoites and merozoites - which come into direct contact with the immune system, and also on the sexual stages, which develop within mosquitos and could be possible targets of vaccines capable of blocking transmission of the disease.

Most current research on malaria vaccine centres on the analysis and production of antigens of these various parasite forms. Stage-specific antigens are of special interest, since protective immunity is apparently stage-specific. Thus, a sporozoite-based vaccine would not be expected to protect against malaria transmitted by transfused blood containing asexual-stage parasites, nor would a gamete-based vaccine be expected to protect against infection by sporozoites and the development of disease due to the asexual blood stages.

It is now reasonable to expect that experimental malaria vaccines will in the near future be brought to the stage of initial testing for efficacy, tolerance and toxicity. TDR collaborates closely with agencies in the United States of America actively involved in this work, including the United States Agency for International Development (USAID), the Walter Reed Army Institute of Research and the National Institutes of Health (NIH). The Programme's goal is to develop a vaccine which could be effectively incorporated into public health measures for malaria control.

The remarkable recent progress made in the identification and production of potentially protective antigens contrasts strikingly with the still fragmentary understanding of the mechanisms and possible indicators of protective immunity in man. At this stage of their development, the effectiveness of malaria vaccines for disease control remains to be demonstrated. Their effectiveness in protecting individuals and in stemming transmission of the disease will have to be carefully evaluated under tropical conditions.

#### 2.4.1 Highlights of recent activities

- The most striking advance in malaria vaccine research has been the cloning of the gene coding for the major protective surface protein of sporozoites of P. falciparum. As a result of this achievement, reported in mid-1984 independently and almost simultaneously at NIH and by IMMAL-supported scientists at New York University, the first malaria vaccine should soon be ready for initial testing for toxicity, tolerance and efficacy.
- Other noteworthy advances in research, much of it supported by IMMAL, include: the identification, in several species of Plasmodium, including P. falciparum, of potentially protective antigens on the surface of asexual blood-stage forms of the parasite - the intraerythrocytic schizont and the extracellular merozoite; the identification of a stage-specific antigen of P. falciparum exoerythrocytic (liver) stages; the analysis and amino-acid sequencing of P. falciparum "S-antigens", which are released in large quantities at the time of schizont rupture; the identification of the P. falciparum gamete antigens which are the targets of transmission-blocking immunity; the development of a simple, highly sensitive, species-specific assay - the Zavala test - using the monoclonal antibody technique to detect sporozoites in infected mosquitos.

#### 2.4.2 The future

IMMAL will continue its programme of vaccine development. It is expected that clinical testing of ant sporozoite vaccines will soon be carried out. Cloned gene products from other life-cycle stages should become available for use in candidate vaccines. Analysis of immune mechanisms and immunopathological complications in malaria and the development of immunodiagnostic tests will continue.



Malaria vaccine research will soon progress from the stage of fundamental laboratory investigation to the developmental stages, involving pilot-scale production and initial testing for efficacy, tolerance and toxicity. Indeed, in the case of antisporezoite vaccines the development programme is already under way. Although several candidate antigens from asexual blood-stage parasites have been identified on which future malaria vaccines might be based, there is still a long way to go before this form of malaria vaccine will be ready for clinical trials. Among the problems to be solved are the production, formulation and selection of suitable adjuvants and carrier molecules. It is therefore impossible to predict when malaria vaccines will become commercially available, but the present rate of progress and the commitment of industry justify optimism.

## 2.5 Applied field research in malaria

The aims of the Scientific Working Group on Applied Field Research in Malaria (FIELDMAL) are to promote the best use of existing tools for the control of malaria and, on the strength of reliable epidemiological data, to evaluate new tools and methods for malaria control and field research.

Over the past two years FIELDMAL has been concerned mainly with: the growing severity and increasing spread of resistance of P. falciparum to chloroquine; the complex pattern of "family relationships" among the different Anopheles species and the roles of different members of these families in malaria transmission; and the integration of malaria control into local primary health care systems.

### 2.5.1 Malaria vector control

#### Insecticides and spraying devices

Resistance of Anopheles to insecticides or people's objections to spraying call for modified operational approaches. In one study, pirimiphos methyl was effective for up to three months when applied on walls but had little effect in ultra-low volume (ULV) space spraying. The former method can now be evaluated in a larger trial in order to determine its effectiveness, cost and acceptability to the population. In another trial, spraying of fenitrothion in a single swath 10-85 cm high on interior walls proved more effective against A. aconitus than coverage of entire walls.

An electrostatic spraying device already used in agriculture is being adapted to vector control and overcomes many of the difficulties experienced with established methods. A prototype sprayer is being prepared for village trials.

#### Biological control

In semi-arid areas of northern Somalia it was shown that malaria can be controlled by the introduction of a species of larvivorous fish (Oreochromis spilurus spilurus) into mosquito breeding sites. Other species of fish are now being tested under different ecological conditions.

### 2.5.2 Highlights of recent activities

- A global system for monitoring the spread of P. falciparum resistance to drugs has been set up and integrated into the routine epidemiological activities of national health services in several countries in Africa, Central and South America and South-East Asia.
- Kits to test the sensitivity of P. falciparum to 4-aminoquinoline drugs and to the new antimalarial, mefloquine, are being produced in the Philippines, initially under a research agreement with TDR.
- Ways of gearing antimalarial treatment to the specific needs and circumstances of individual communities are being developed from studies in Guatemala, Kenya, Thailand and United Republic of Tanzania. These studies have provided an epidemiological surveillance mechanism.



- Chromosomal and biochemical analyses are emerging as promising tools for studying the different functional "families" or species complexes of mosquitos and their roles in disease transmission, and could provide the basis for more rational malaria control strategies.

### 2.5.3 The future

FIELDMAL will conduct studies on the epidemiology of drug resistance and its control, and on the operational use of drugs. Vector taxonomy, behaviour, status and modified approaches to vector control will be explored. Studies will be made of malaria epidemiology in relation to integrated control strategies, particularly in areas of rapid environmental change (irrigation, deforestation, urbanization). In preparation for vaccine trials, epidemiological studies will be conducted and ways of refining field investigation will be sought. Attempts will be made to introduce in vitro test kits for measuring the sensitivity of P. falciparum to new drugs. Other types of test needed in epidemiological studies, such as a kit using monoclonal antibodies for the detection of sporozoites in mosquitos, will be further developed.

### 3. SCHISTOSOMIASIS

Schistosomiasis is still spreading, in association with water and agricultural development projects, in the 74 countries where it is endemic, where an estimated 200 million people are actually infected, and where over 600 million more are exposed to the risk of infection.

There are four types of schistosome worms that infect man: three, Schistosoma mansoni, S. japonicum and S. intercalatum, cause intestinal schistosomiasis and the fourth, S. haematobium, urinary schistosomiasis. WHO's control strategy for all four types of infection aims at reduction of morbidity rather than eradication of disease transmission, since man himself causes and spreads schistosomiasis; children are the most frequently and heavily infected; in children there is a direct association between intensity of infection - as measured by urinary or faecal egg counts - and severity of disease; current approaches to control of the snail intermediate hosts of schistosomes are expensive, require skilled field personnel not usually available locally, and demand long-term, repeated interventions.

A realistic, demonstrably effective control strategy (recently endorsed by a WHO Expert Committee<sup>1</sup>) has been established for schistosomiasis. It is based on quantitative epidemiological evaluation, chemotherapy, supplemental mollusciciding, follow-up of patients at predetermined intervals, community education and integration of control operations into health care delivery systems. The success of this strategy depends on the resolve of endemic countries to adapt it to local needs and to mobilize the political and administrative resources required for its implementation.

The Programme's Scientific Working Group on Schistosomiasis supports research focused on the identification and development of new scientific tools that should make for more efficient, less expensive and more easily achieved disease control.

In planning its activities, TDR takes into account research needs not covered by work conducted outside the Programme. More specifically, it recognizes a need for applied field research on new drugs, diagnostic tests, snail control agents, drug delivery methods, disease control in agricultural development projects, disease control operations and their applicability in different epidemiological conditions, and the distribution of potential intermediate snail hosts in the environment and their relation to human infection.

There is also special interest in the immunology of schistosomiasis, including schistosome antigens, immunological aspects of the schistosome surface membrane, the development of immunodiagnostic tests suitable for control programmes, and the potential for vaccination.

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<sup>1</sup> WHO Technical Report Series, No. 728, 1985 (The control of schistosomiasis: report of a WHO Expert Committee).



Other research topics currently within the focus of the Programme include the identification of schistosome strains and species, development of new drugs based on parasite biochemistry, the schistosome surface membrane, parasite neurophysiology, mechanisms of drug resistance, pharmacokinetics and drug metabolism, snail metabolism and schistosome embryogenesis.

### 3.1 Immune regulation and vaccination

It is now clear that immune schistosome-host interactions form an extraordinarily complex system. A large number of potential host effector mechanisms have been identified, mainly by in vitro studies, and an equally large number of parasite evasion and defence mechanisms have been disclosed. Host-parasite interplay results most often in chronic, long-lasting infection, with generally slow and variable development of resistance. Research has not yet defined a vaccine likely to prevent disease in man, but a safe, potent vaccine would be of such great benefit that this objective should be pursued.

### 3.2 Highlights of recent activities

- A new syringe urine filtration technique has been tested in Zanzibar (United Republic of Tanzania) and found effective, and is now being evaluated in Cameroon, Congo, Malawi, Mozambique and Niger.
- Biochemical studies on schistosome purine and pyrimidine metabolism are providing promising pointers to new antischistosomal drugs.
- Monoclonal antibodies are being used successfully to identify schistosome antigens that might form the basis of protective vaccines.
- Applied field research projects have been conducted in Burundi and Zanzibar with a view to assessing control strategies in different locations, and have demonstrated the feasibility of large-scale treatment programmes using available diagnostic techniques and antischistosomal drugs.

### 3.3 The future

In order to identify and resolve more easily problems of schistosomiasis control, WHO will foster close collaboration between research and operational programmes. In particular, applied field research will be linked to national control programmes to promote the adaptation of new techniques and operational approaches to field use. More research on the basic metabolism of the snail will be encouraged as a basis for the development of new molluscicides. The parasite's biochemistry and metabolism will be explored as a basis for the development of new antischistosomal drugs and for a greater understanding of the modes of action of current drugs. The development will be encouraged of new, sensitive, inexpensive diagnostic techniques appropriate for use in developing countries. The increasing use of large-scale chemotherapy to reduce morbidity has created unique opportunities to study the effect of drugs on the human immune response. This situation opens new avenues for applied immunological research in endemic countries.

## 4. FILARIASIS

Filariasis comprises several diseases. Most are caused by filarial worms and transmitted by bloodsucking flies. One, dracunculiasis, is a closely related metazoan disease transmitted by water fleas.

Onchocerciasis, or "river blindness", which is transmitted by blackflies of the genus Simulium, is probably the most serious of the filarial diseases. It affects about 40 million people, mainly in tropical Africa, but also in Central and South America, and foci in the Eastern Mediterranean Region extend to Yemen and the Sudan. The manifestations of



onchocerciasis - mainly intense itching and ultimately, in many cases, blindness - are due to the millions of Onchocerca volvulus microfilariae infesting the body, especially in the skin and eyes. The adult worms lodge in nodules in subcutaneous and even deeper tissues in various parts of the body.

Treatment of onchocerciasis is still unsatisfactory. There are no safe, effective drugs available for large-scale therapy. Diethylcarbamazine (DEC), which has been in use for the last 35 years, eliminates microfilariae but in doing so it usually causes an intense reaction (the Mazzotti reaction), consisting of pruritus, rash, lymph-node enlargement, fever, hypotension and occasionally eye damage, and has to be administered under ophthalmological supervision. Unfortunately, it does not kill adult worms. Suramin, which has been in use for about 40 years as the only drug known to kill adult worms, is toxic, particularly to the kidneys.

The parasitic worms that cause human lymphatic filariasis are Wuchereria bancrofti, Brugia malayi and B. timori. In Africa, South America, Asia and the Pacific Islands an estimated 905 million people are exposed to the risk of infection with these parasites and about 90 million are actually infected. The adult worms lodge in lymphatic vessels; the microfilariae circulate in the blood, often in a nocturnally periodic pattern, and are transmitted by various genera of mosquitos. The worms are responsible for considerable disability and disfigurement, due to acute adenolymphangitis and chronic lesions such as elephantiasis and hydrocoele.

Lymphatic filariasis can be relatively safely and effectively treated with DEC, which, although mainly microfilaricidal, is also a fairly effective macrofilaricidal if used in large enough doses. In use against lymphatic filariasis DEC is also not without side-effects, which are related to the rapid destruction of large numbers of microfilariae in patients with high levels of parasitaemia. On the whole, though, it has been successfully used not only to treat individual patients but also in large-scale chemotherapy programmes.

Overall, the major problem in the control and treatment of filarial infections has been the lack of a completely safe, effective compound that could be used, preferably in a single dose, for both onchocerciasis and other filarial diseases.

In the search for a suitable new drug the Programme has adopted several approaches: the selection of compounds from pharmaceutical company stocks and the testing of these compounds in animal screens; synthesis following up leads on new compounds, with continuous feedback from animal screens; research to identify biochemical characteristics that are unique to the parasite and have potential as chemotherapy targets; pharmacokinetic and toxicological studies on compounds that have shown promise in these early tests; and clinical trials of new drugs, as well as of drugs already in use for other purposes.

To implement these steps, the Programme has set up drug screening centres in several parts of the world and has established drug screening procedures. Research has also been funded on synthesis following up leads on new compounds, pharmacokinetic studies have been undertaken on available drugs and clinical trial centres have been set up to test not only new compounds but also better ways of using suramin and DEC.

#### 4.1 Collaboration with the onchocerciasis chemotherapy project

In view of the urgent need to complement successful larvicidal control with effective chemotherapy, in 1982 the Onchocerciasis Control Programme in the Volta River Basin Area in West Africa (OCP) established an "onchocerciasis chemotherapy project" (OCT) with two main objectives: to obtain drugs which would kill or permanently sterilize adult O. volvulus worms without causing severe reactions in patients and to identify microfilaricides which do not produce severe Mazzotti reactions. OCT has supported mainly clinical trials and basic research following up leads to new compounds. Special attention has been given to ivermectin. OCT works in close collaboration with the TDR Scientific Working Group on Filariasis.

In addition to drugs, major needs include: immunodiagnostic tests for both onchocerciasis and lymphatic filariasis; information on the biology, bionomics, biting behaviour and transmission potential of vectors of filarial worms in different localities; simple tests to identify the origin (human or animal) of filarial parasites in vector flies; methods of distinguishing between savanna and forest strains of the human onchocerciasis parasite; and a better knowledge of the epidemiology of filarial infections in order to



identify individuals and population groups at risk of infection and those among them at risk of developing the more serious disease manifestations.

#### 4.2 Highlights of recent activities

- Several thousand compounds have now been put through animal screens and a number have shown promising activity.
- Ivermectin, derived from a naturally occurring antibiotic-like substance, developed by Merck, Sharpe and Dohme of New Jersey, United States of America, has been shown, in Phase II trials, to be capable in a single dose of ridding patients of O. volvulus microfilariae without causing serious side-effects. The microfilariae in the skin and eyes can be effectively suppressed in this way for at least six months. Phase III trials are now under way at six centres.
- Two Ciba-Geigy compounds, CGP 6140 and CGP 20376, whose activity has been confirmed in tertiary screens for onchocerciasis (O. gibsoni, in cattle) and lymphatic filariasis (B. malayi, in leaf monkeys), have reached the clinical trial stage. Phase I and IIA trials on CGP 6140 in the treatment of onchocerciasis began at the Onchocerciasis Chemotherapy Research Centre in Tamale, Ghana, in February 1985. Phase I trials on CGP 20376 in lymphatic filariasis are likely to begin soon.
- Advances have been made in attempts to develop a specific, sensitive immunodiagnostic test for filarial infection. Filarial antigens have been detected in body fluids of most microfilaria-positive patients, as well as in a proportion of infected patients without evidence of microfilariae, suggesting the possibility of diagnosing infection serologically at a pre-patent or occult stage of infection.

#### 4.3 The future

The search for nontoxic filaricides will continue, based on studies of biochemistry and metabolism, screening and synthesis following up leads to new compounds. Ivermectin will continue to be examined for activity in onchocerciasis and lymphatic infection, and the new compounds that have reached Phase I trials will undergo Phase II trials if they prove satisfactory. The search for more specific diagnostic tests will continue, with emphasis on the detection of specific antigens in body fluids. Higher priority will be given to the detection and identification of parasites in vectors, using DNA probes and immunological methods, and to the identification of vectors by non-microscopic methods, such as DNA probes and isoenzyme techniques. Epidemiological studies will include the relation of different risk factors.

### 5. AFRICAN TRYPANOSOMIASIS

African trypanosomiasis, or sleeping sickness, is a severe, often fatal disease that occurs widely in the sub-Saharan region of the continent. There are two varieties: one, caused by Trypanosoma brucei rhodesiense, is found in East Africa; the other, caused by T.b. gambiense, occurs in West and Central Africa. The rhodesiense infection is usually acute, causing severe symptoms and death within a few weeks or months. The gambiense form progresses more slowly over several months or years. Both varieties can produce brain damage and a sleeping sickness syndrome, and are fatal if not treated.

About 50 million people in 36 African countries are at risk of developing the disease and, of these, only between 5 and 10 million have access to some form of protection or treatment. The incidence of reported cases is currently 20 000 a year, but many cases go undetected. Severe outbreaks have occurred over the last 10 years, partly as a result of



poor disease surveillance, in Cameroon, Central African Republic, Côte d'Ivoire, Sudan, Uganda and Zaire.

The trypanosomiasis are transmitted by a small number of tsetse fly species. An infected bite from the insect causes local inflammation (trypanosomal chancre); the parasites migrate from this site and multiply in lymph and blood. The blood-trypanosome count oscillates cyclically, the parasites in each successive wave of parasitaemia carrying different surface antigens and thereby evading antibodies raised by the host to previous surface coats of the parasite. Eventually all organs are invaded, with involvement of the central nervous system ultimately leading to coma and death.

T.b. rhodesiense trypanosomiasis occurs in a variety of game and cattle. When incidence of human infection is low, transmission occurs mainly through animal hosts, although during epidemics man-to-man transmission is important. T.b. gambiense infection, on the other hand, was thought until recently to be confined to man. Control of sleeping sickness, especially of the gambiense form, is based on population surveillance, diagnosis and treatment. In view of the wide variability in parasitaemia levels, early diagnosis of infection is not easily achieved under field conditions. The immunofluorescent antibody test is valuable but its use is limited by the need for specialized laboratories. Currently available drugs are grossly inadequate for the treatment of these diseases. The earlier stages of infection, which do not involve the brain, can be treated with suramin (for T.b. rhodesiense infection) and pentamidine (for T.b. gambiense infection), but resistance to pentamidine has been reported. Treatment of late stages of the disease is currently based on the arsenical compound melarsoprol, which causes serious side-effects in 5-10% of patients and is fatal in 1-5%. Treatment is also hampered by inadequate knowledge of the pathology of the disease. Insecticides can be used to control tsetse vectors but they are expensive, have ecological drawbacks and do not produce a lasting effect. In view of the many problems facing those involved in control of the trypanosomiasis, the WHO action programme on sleeping sickness control has recently prepared a draft manual (based partly on findings of TDR-supported research) for primary health care workers, nurses, medical assistants and doctors.

#### 5.1 Highlights of recent activities

- Strong evidence has emerged that domestic and game animals can harbour trypanosomes identical to T.b. gambiense from man, although the relevance of this finding to transmission of human disease has yet to be determined.
- Simple, effective insecticide-impregnated traps and screens developed for use by rural communities have reduced tsetse populations by over 90% in some areas. With special funds approved by the Director-General, WHO is supporting a project in Côte d'Ivoire designed to evaluate the impact of insecticide-impregnated traps or screens and of community participation on Glossina control and trypanosomiasis transmission.
- The new card agglutination test for trypanosomiasis (CATT) - a simple, relatively sensitive field test for African trypanosomiasis, derived initially from work conducted outside the Programme - was found, in comparative field trials, to be the most practical field test now available for the rapid diagnosis of infection. Many endemic countries are now purchasing CATT, either directly or through WHO, for sleeping sickness control.
- The miniature anion-exchange centrifugation technique (MAECT) has been shown to be the most sensitive method of detecting trypanosomes in blood. The WHO action programme on sleeping sickness control is preparing kits to make the test suitable for routine use by sleeping sickness treatment centres.
- DL- -difluoromethylornithine (DFMO), an ornithine decarboxylase inhibitor, administered in combination with bleomycin, cured mice of berenil-resistant T.b. brucei infection of the central nervous system. In preliminary clinical trials conducted within and



outside the Programme and involving about 100 patients with African trypanosomiasis, DFMO achieved satisfactory results in 97 patients, including those with melarsoprol-resistant infection. Further trials are being conducted in collaboration with the pharmaceutical industry.

- Work is in progress to improve therapeutic regimens based on existing drugs, but less toxic drugs are urgently needed. Of 100 compounds put through TDR animal screens for trypanocidal activity, two nitroimidazoles, given with suramin, brought about permanent cure of T. brucei infection of the central nervous system in mice and are now being tested in monkeys.
- In a study in Côte d'Ivoire, use of insecticide-impregnated screens in conjunction with selective insecticide groundspraying reduced tsetse population density by 98%.

## 5.2 The future

Further studies will be undertaken on the relationship between seropositivity and parasitological evidence of infection. Long-term multidisciplinary studies on disease epidemiology will continue for T.b. gambiense in the Congo and for T.b. rhodesiense in Ethiopia. Development of diagnostic tests will continue to be explored. The search for safe and effective chemotherapeutic agents and regimens will continue. Assessment of combinations of known trypanocides, of new compounds and of the use of anti-inflammatory drugs is envisaged. Development of a CATT for T.b. rhodesiense and continued research on antigenic repertoires of both T.b. gambiense and T.b. rhodesiense for the development of more sensitive tests will be pursued. Studies on the pathology of the disease, the mechanisms of inflammation and the nature of the immune response in man and its role in immunopathology will continue. Identification of simple and cost-effective methods of vector control for application by rural communities is envisaged. The search for odour attractants for flies of the Glossina palpalis group will continue.

## 6. CHAGAS' DISEASE

Chagas' disease, a chronic illness caused by the flagellate parasite Trypanosoma cruzi, was first described in 1909 by the Brazilian physician Carlos Chagas. It is confined to the American continent, particularly to tropical and subtropical countries of Latin America, although indigenous cases have been reported from temperate areas of North America. There are two stages of the disease: an acute stage, occurring shortly after the initial infection, and a chronic stage, in which the heart, oesophagus, lower intestine and peripheral nervous system are chiefly affected. Fifteen to 20 years or more may elapse between the two stages. During this "interim" period, infection is present without overt illness. Definitive diagnosis of infection is based on the demonstration of parasites in the blood and is achieved by xenodiagnosis: patients are exposed to the bites of laboratory-reared triatomine bugs, the vectors of T. cruzi, which are then examined for the presence of parasites. Triatomines, commonly known as "kissing bugs" because they often bite their victims on the face, infest and breed in substandard mud-wall dwellings.

It has been estimated that up to 63% of blood donors in non-endemic urban areas are infected with T. cruzi, and transmission by transfusion has now become a serious problem. About 65 million people are directly exposed to the risk of T. cruzi infection, a further 15 to 20 million are actually infected, and of infected individuals approximately 10% develop chronic Chagas' cardiopathy. According to recent evidence, chronic Chagas' disease may be responsible in some areas for up to 10% of deaths among the adult population.

Many countries recognize Chagas' disease as a public health problem and a number of control programmes have been in operation since the early 1950s. Designing and evaluating such programmes requires a knowledge of the prevalence of infection. Current prevalence estimates are based largely on evidence from serodiagnostic tests, which are validated and standardized in a continental network of collaborating laboratories sponsored by TDR.

Research topics being given high priority by the Programme include: the immunopathogenesis of chronic Chagas' disease lesions; prevalence rates and geographical



variations in prevalence; improvement of control programmes; development of improved, long-acting insecticides; improvement of housing (to prevent transmission); standardization of serodiagnostic reagents and tests; improvement of serodiagnostic tests by the use of defined antigens; development of tests suitable for screening transfusion blood; development of trypanocidal compounds for sterilizing transfusion blood; and development of drugs to cure disease and not merely clear blood of parasites.

#### 6.1 Highlights of recent activities

- Prevalence studies being undertaken with the Ministries of Health of Ecuador, Honduras, Paraguay and Uruguay are providing information for the implementation and evaluation of national control programmes.
- The continental network of collaborating laboratories for the standardization of serodiagnosis in Chagas' disease now covers 11 countries: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Honduras, Panama, the United States of America, and Uruguay. The central reference laboratory in São Paulo, Brazil, has distributed 2800 samples of reference sera to other collaborating laboratories for calibration of serodiagnostic tests. Quality control undertaken by the São Paulo laboratory shows high indices of agreement between the different laboratories in assessment of sera as positive or negative for infection.
- Slow-release insecticidal paint formulations have been field-tested and found effective for up to nine months. The new paints can be easily applied and are well accepted by the community.
- A new, more cost-effective formulation for the insecticide deltamethrin has been developed and field-tested, and has now been adopted for routine control activities by the Brazilian Chagas' disease control programme.
- In collaboration with Argentina's control programme a fumigant insecticide canister has been tested for indoor use, and initial results are encouraging.
- Twenty-one active compounds potentially suitable for sterilizing transfusion blood have been identified by in vitro screen testing. Two have been selected for further study.
- A new serological monoclonal antibody-based assay is being field-tested in Bolivia and Venezuela.

#### 6.2 The future

Research will continue along the present lines with emphasis on standardization of research methods and materials. Studies on efficacy, toxicology and safety of selected trypanocidal compounds will continue. Assessment of a test for the rapid routine screening of transfusion blood will be given high priority. Large-scale trials with insecticidal paints and new formulations will be launched, involving national control programmes. Basic studies aiming at the development of a curative drug for all stages of Chagas' disease and at the identification and characterization of parasite antigens for use in safe and effective immunoprophylactic regimens will continue and expand. Studies on the relation of parasite subpopulations and clinical and geographical varieties of Chagas' disease will be initiated.

#### 7. THE LEISHMANIASSES

The leishmaniasis, diseases caused by infection with the flagellate protozoan parasite Leishmania, occur in three major forms: visceral, mucocutaneous and cutaneous.



Visceral leishmaniasis (VL), in which the parasite invades internal organs (spleen, liver, bone marrow, etc.), is usually lethal if untreated. It is endemic in several parts of Africa, Latin America and the Indian subcontinent, and occurs sporadically in China, the Mediterranean Basin, South-West Asia and southern parts of the Soviet Union. In 1977, an epidemic of VL, or kala-azar as it is called in India, occurred in Bihar State, India, affecting 100 000 people (according to a survey of the Indian National Institute of Communicable Diseases), and for 1978 a conservative estimate of 40 000 cases was reported.

Mucocutaneous leishmaniasis (MCL) is primarily found in South America, although cases have also been reported in Africa, notably Ethiopia and the Sudan. The disease begins with a primary skin lesion, followed several years later by metastasis to the oronasal or pharyngeal mucosa. These degenerative mucocutaneous lesions can be mistaken for leprosy and carry something of the stigma and cause some of the socioeconomic problems experienced by many leprosy patients.

Cutaneous leishmaniasis (CL), the most prevalent form of leishmaniasis, is found in Africa, Latin America, South-West Asia, the Indian subcontinent, and parts of the Mediterranean Basin and of the Soviet Union. Uncomplicated cutaneous lesions heal within nine months (in the Middle East) to two years (in Central and South America). However, nonhealing lesions occur, as in diffuse cutaneous leishmaniasis (found in Ethiopia), leishmaniasis recidivans (in the Middle East) and post-kala-azar dermal leishmaniasis (in India and East Africa). Even uncomplicated CL is associated with high morbidity, a disfiguring lesion and life-long scarring. Loss of worktime due to CL, especially in new development projects, can have important economic consequences (projects in forest areas of Brazil and desert areas of Saudi Arabia, for example, have been curtailed because of the high incidence of CL in these areas).

Leishmaniases are transmitted by sandflies of the Phlebotomus (Old World) and Lutzomyia (New World) species. They require humid but not wet conditions for breeding and live on a wide range of organic materials. Females generally require a vertebrate blood meal for development, although autogenous development has been reported.

The ecological systems maintaining the different Leishmania species in different areas vary from place to place. In central Kenya and in India man is thought to be the reservoir host for L. donovani, the species responsible for kala-azar. In almost all other endemic areas of the world, i.e., in north-western Africa, South America and southern Europe, the dog is the reservoir. Other animals - foxes (in France and the Islamic Republic of Iran), rats (in Italy) and jackals and wolves (in the Soviet Union) - have also been implicated as L. donovani reservoir hosts.

At present there is no diagnostic test for early Leishmania infection. Definitive diagnosis depends on isolation and identification of the parasite from biopsy material. In visceral leishmaniasis this is a serious problem, since biopsies of bone marrow, spleen or liver are required. Serological tests give a presumptive indication of infection and are positive in advanced disease.

The only drugs available to treat the leishmaniases are pentavalent antimony compounds, which are toxic and require repeated injections given under close supervision for three weeks or more. Common side-effects include vomiting, nausea, malaise, headache, lethargy and electrocardiographic (ECG) changes. Current treatment schedules are, moreover, not always successful.

A form of vaccination has long been practised against CL in parts of the Middle East: an infective dose of the parasite is administered at a chosen site of the body in order to prevent naturally occurring lesions from developing on the face or in multiple sites. Following this "leishmanization" procedure, the disease runs its normal course and, after the lesion has healed, leaves the patient with strong immunity to the parasite. During the past four years over 800 000 individuals have been submitted to leishmanization in the Islamic Republic of Iran, whenever all other control measures failed.

Vector control is not always feasible in zoonotic leishmaniases. However, in anthroponotic forms (such as kala-azar or some forms of CL) vector control programmes directed primarily against malaria have also been very effective against leishmaniases. Indeed, cessation of antimalarial insecticide application has been suggested as the cause of the 1977-1978 outbreak of leishmaniasis in Bihar.



Scientific interest in the leishmaniasis has increased significantly in recent years. Over the past decade the number of published scientific papers on these diseases - of which those arising from TDR support constitute a considerable proportion - has doubled. The availability of animal models and the ease with which Leishmania can be grown in vitro are two reasons why experimental leishmaniasis is now widely used as a model for studying the host-parasite relationship in general. Research on the leishmaniasis, however, is still in its infancy, despite the fact that the diseases have been known for centuries and their causes for more than 70 years. There is little doubt, though, that if adequate support is now provided for a concerted, sustained research effort, effective agents to treat and control these diseases, including drugs, diagnostic tests and even vaccines, could be developed within a reasonably short period of time.

#### 7.1 Highlights of recent activities

- New information has been obtained on the geographical distribution of infections and on the characteristics of vectors.
- Studies on nucleotide metabolism in Leishmania have led to the development of allopurinol riboside, a nucleic acid analogue now undergoing a limited Phase II clinical trial.
- Improvements have been made to therapeutic regimens using antimony compounds.
- Monoclonal antibodies and cloned kDNA probes specifically recognizing various Leishmania species have facilitated the identification and characterization of the parasite and are being used to develop new diagnostic tests.
- It has been found that some types of T-lymphocytes can aggravate leishmanial lesions in mice, a finding pertinent to research on new approaches to vaccine development.
- Fourteen strains of Leishmania have been selected as reference strains to be used by all laboratories involved in the identification and characterization of these parasites.
- Experimental protection has been achieved in animal models using several types of vaccinating agents other than virulent parasites.

#### 7.2 The future

Plans for vaccine development against zoonotic cutaneous leishmaniasis have been prepared and candidate preparations will be tested, initially in vitro. New diagnostic tests will be field-tested. Further development and trials of a new promising drug for cutaneous and visceral disease are anticipated, either alone or in combination with antimonials. Experimental models of leishmaniasis, particularly in primates, will be developed. Field research on the transmission cycle and ecology of the disease will be continued in selected areas. Studies on host-parasite interactions in mucocutaneous and visceral leishmaniasis will be emphasized.

#### 8. LEPROSY

About 1.4 billion people - nearly a third of the world's population - live in leprosy-endemic areas, mostly in Asia and Africa, and more than a third of the (conservatively) estimated 10.6 million leprosy patients in the world face the threat of permanent, progressive physical disability, often with its concomitant of social rejection. Indeed, in many countries the social dimensions of the disease carry its public health impact far beyond the extent suggested by prevalence rates.

A major problem in leprosy treatment has been the growing resistance of Mycobacterium leprae to dapsone, the only cheap, safe and effective antileprosy drug and one that has been



used widely for almost 40 years as the treatment for leprosy. Dapsone resistance is now widespread and increasing: alternative drugs are urgently needed. Over the past 15 years, secondary resistance (appearing during the course of treatment) has been reported with increasing frequency. Whenever dapsone resistance has been sought among treated or relapsed lepromatous leprosy patients it has been found, and its prevalence has been steadily increasing in many countries.

Primary resistance (confirmed before treatment) presents an even more disturbing picture and seems to be increasing more quickly than secondary resistance. As a counter-measure, the use of combined drug regimens has been proposed by a WHO Study Group<sup>1</sup> on the strength of research conducted under the Programme's Scientific Working Group on the Chemotherapy of Leprosy (THELEP). Based primarily on intermittent administration of rifampicin, these regimens are simple, operationally practicable and effective, and have been widely accepted for use in control programmes. In the long run, though, currently available drugs may lose their effectiveness. The search for new and better drugs must therefore continue.

In spite of some progress in chemotherapy, a method of primary prevention is urgently needed. BCG vaccination has been tested in large-scale prospective trials and found to give only a modest degree of protection. The development of a more effective vaccine is clearly of high priority.

Epidemiological research on leprosy is currently based on the study of well-established cases. There is now good evidence that only a proportion of infected individuals actually develop overt disease. A test for early, subclinical infection would undoubtedly facilitate the epidemiological studies on the disease, which would in turn provide data essential for future control efforts.

#### 8.1 Highlights of recent activities

- Leprosy vaccines are now being studied in human subjects. A Phase I trial of a killed-M. leprae vaccine, involving 31 Norwegian volunteers, was completed and showed the preparation to be safe, as well as effective in inducing sensitization. Another study showed a mixed vaccine (BCG, killed M. leprae and a mixture of both) to be capable of inducing sensitization in a higher proportion of vaccinated individuals than with killed M. leprae alone or BCG alone. A vaccine prophylaxis trial, using a combination of killed M. leprae and BCG and involving over 60 000 household contacts of leprosy patients, has begun in Venezuela. Other trials are shortly to begin in other countries.
- Ten M. leprae-specific monoclonal antibodies were prepared and will be used to develop immunodiagnostic tests for field use.
- Alarming high prevalence rates of primary resistance to dapsone were reported in some areas. Primary resistance (in previously untreated patients) is becoming increasingly widespread. Coming on top of widespread secondary resistance (following drug treatment), this development calls for the use of a combination of drugs or "multidrug" therapy, for all leprosy patients.
- Preliminary findings of field trials conducted in India on multidrug regimens suggest that therapy using a combination of drugs is operationally feasible: the regimens tested were well accepted and found to be free of serious side-effects. Although it is too early to assess the efficacy of the different regimens, none has so far been associated with clinical deterioration.

<sup>1</sup> WHO Technical Report Series, No. 675, 1982 (Chemotherapy of leprosy for control programmes: report of a WHO Study Group).



- The genome of M. leprae has recently been cloned and expressed in Escherichia coli. This advance opens up the prospect of second-generation leprosy vaccines not requiring armadillos for their production, and will obviate many other problems in leprosy research arising from inability to cultivate M. leprae.

## 8.2 The future

The plans of the Scientific Working Group on the Immunology of Leprosy (IMMLEP) include initiation of large-scale leprosy vaccine trials in Asia and Africa; studies of immunotherapy to promote early cure and prevent relapse; application of immunodiagnostic tests based on monoclonal antibodies and phenolic glycolipid-I antigen in epidemiological studies; identification of specific antigens of relevance to diagnosis, and vaccine development using molecular biology; and further elucidation of immuno-regulating mechanisms in leprosy.

THELEP's plans include screening of new classes of compounds, and short-term trials of quinolones, a promising new class of compounds; exploitation of the expression of M. leprae DNA genes in E. coli and Streptomyces species for application to drug screening; improvement of the sensitivity and specificity of the available in vitro drug screening system; elucidation of the efficacy, acceptability and operational feasibility of multidrug regimens in field conditions; evaluation of the impact of multidrug therapy on the transmission of leprosy; exploration of the effectiveness of immunotherapy combined with intensive chemotherapy in the treatment of lepromatous leprosy; and the application of newer approaches for monitoring chemotherapy.

## 9. BIOLOGICAL CONTROL OF VECTORS

Of the six diseases within TDR's mandate, all but leprosy are transmitted by vectors. Programmes aimed at controlling these vectors have up to now relied heavily on chemical pesticides. But increasing costs, vector resistance, low target specificity and ecological concerns have prompted the search for other approaches that can be included within integrated vector strategies.

One such approach is to exploit the existence of organisms whose pathogenicity to other members of the ecosystem acts as a natural "regulator" of the system. This has several advantages and is ecologically more acceptable than chemical control alone. Unlike most chemical pesticides, natural regulators tend to have fairly narrow ranges of targets, so that their effects are more amenable to ecological containment.

The aims of research on the biological control of vectors are to identify natural, biological regulators that have survived such containment; to test them not only for efficacy and field applicability against vectors of the five vector-borne diseases of interest to the Programme but also for safety to human and other non-target species; to stimulate the development and production of those that emerge as promising from efficacy and safety tests; and, if possible, to improve the effectiveness of naturally occurring regulators. An ultimate aim is the inclusion of agents of proven efficacy into integrated vector control programmes.

Of more than 40 agents so far investigated with TDR support, some were discovered in research supported by TDR, others by investigators initially working outside the Programme but later receiving its support for subsequent testing and development. These agents include: bacteria, fungi, protozoa, worms (nematodes), invertebrate predators, biological competitors and fish. Certain larvicidal bacteria and larvivorous fish have shown great promise, and all the agents selected for further development have proved remarkably "target-specific".

### 9.1 Highlights of recent activities

- Bacillus thuringiensis H-14 is now in use for the control of Simulium in areas of the Onchocerciasis Control Programme where the vector has become resistant to chemical insecticides.



- New strains of *B. sphaericus*, a larvicidal microorganism capable of recycling even in polluted water, have been shown in several countries - Côte d'Ivoire, Israel, Nigeria, Soviet Union, Thailand and the United States of America - to be effective against strains of both Anopheles and Culex vector mosquitos.
- A method of mass-producing oospores of the larvicidal fungus Lagenidium giganteum is in the early stages of development and is showing great promise. The oospore is the stage during which the fungus is "transportable" and is most resistant to natural hazards, and provides a rich source of infective zoospores.

## 9.2 The future

A number of biological agents are being accorded highest priority for future development: formulations of *B. thuringiensis* H-14 for mosquito control and development of asporogenic mutants; *B. sphaericus*; *L. giganteum*; larvivorous fish; and nematodes, notably *Romanomermis iyengari*. In addition, emphasis is being placed on methodological approaches, such as methods for developing formulations of biological control agents specifically adapted for use in tropical developing countries, and field trials of the effectiveness of biological control agents in disease control.

## 10. EPIDEMIOLOGY

Knowledge of the distribution of the six major diseases of concern to TDR has been accumulating steadily over the years, and some of the factors underlying the occurrence and distribution of these diseases are better understood. But further epidemiological research is needed (1) to measure the disease burden so as to provide national health services with guidelines on priorities and to enable the impact of specific control measures to be monitored; (2) to identify specific risk factors for infection and disease, with a view to improving disease control; (3) to develop techniques for testing the efficacy of new control tools, such as drugs and vaccines, so that they might be used most effectively; and (4) to test alternative approaches and determine the best strategies for their use.

The increasingly vigorous application of basic biomedical sciences to tropical diseases is now yielding powerful tools for diagnosis, prevention, treatment and control. The new diagnostic tests must not only be epidemiologically validated for sensitivity and specificity in the field but also standardized to facilitate comparison of results. Vaccines must be carefully tested for safety and protective value. Well-designed, epidemiologically sound studies are needed to ensure the effective deployment of these new tools and their integration into control operations. All branches of epidemiology must be marshalled to meet these requirements - from simple descriptive studies to complex computer simulations, from case-control studies of causal factors to community trials of vaccines and therapeutic agents. TDR has concentrated only on those aspects of research most likely to lead rapidly to effective control of the six tropical diseases within its mandate.

Important epidemiological research is conducted with the support of TDR's "disease-specific" scientific working groups. Studies describing disease distribution patterns have been completed in areas of the world where little information had previously been available. Baseline studies, for example, of Chagas' disease and the leishmaniases are now providing the foundations on which national control programmes can be undertaken and on which analytical studies have been started with a view to determining risk factors and designing strategies for community-based disease control.

In many respects, the factors underlying disease distribution in the community are still obscure. Some diseases, such as schistosomiasis, Chagas' disease and lymphatic filariasis, show a common pattern: infection may be highly prevalent in the community while only a minority of those infected have serious clinical disease. Identifying risk factors for infection, for disease and for disease complications is an important task of TDR's Scientific Working Group on Epidemiology and one that is being accomplished through the application of epidemiological techniques originally developed for the study of chronic, non-parasitic diseases such as cancer and heart disease. For other diseases, epidemiological methods are now being used to test different approaches to disease control and to lay the groundwork for future field studies on vaccines (against leprosy and malaria, for example).



### 10.1 Highlights of recent activities

- Multidisciplinary, population-based epidemiological studies combining investigation of several diseases in selected areas were completed and have yielded information on disease patterns in several countries where the diseases are endemic, which should prove useful for the planning and execution of disease control programmes.
- Faster, more efficient epidemiological methods have been applied to the study of tropical diseases, including case control methods to determine special risk factors and to evaluate the effects of procedures and simple techniques of disease surveillance and diagnosis for use by primary health care workers.
- Facilities have been set up for the assessment and development of promising new diagnostic tests, particularly those simple enough for field use.
- Training in epidemiological research has been provided by postgraduate courses initiated by TDR in several institutions in countries where the diseases are endemic, and by workshops on epidemiological research methods.
- A field manual on practical epidemiology has been prepared for health officers and is being evaluated.

### 10.2 The future

The future work of the Scientific Working Group on Epidemiology will cover: the development of epidemiological methods for field trials of new tools, including diagnostic tests, therapeutic agents and strategies for existing agents, and new preventive techniques, especially vaccines; the epidemiological analysis and identification of factors underlying the pathogenesis of tropical diseases and determination of priorities to be accorded to different diseases in tropical countries with respect to disease control programmes; the determination of the effectiveness of control measures for the purpose of rational allocation of resources, and the evaluation of tropical disease control programmes as starting points for operational research; the continuing promotion of epidemiological research training through postgraduate programmes in selected institutions in developing countries, workshops on epidemiological research methods, short advanced courses on methods for research on tropical diseases, promotion and development of teaching tools, and coordination of epidemiological training activities with other agencies.

## 11. SOCIAL AND ECONOMIC RESEARCH

In the early stages of TDR's activities it was realized that social and economic factors must be taken into account if the control of tropical diseases is to be significantly improved. The result was the establishment, in 1979, of the Scientific Working Group on Social and Economic Research (SER).

Scientists from many disciplines are involved in the work of SER: anthropologists, sociologists, psychologists and linguists investigate people's attitudes, views and behaviour in relation to disease and disease transmission; economists assess, from national and international perspectives, not only the cost-effectiveness of control programmes but also the economic rationale behind decision-making in the household and how it is influenced by and influences diseases transmission.

In the past, these scientists have often worked in isolation. Effective social and economic research can only be achieved through the application of sound epidemiological knowledge combined with principles of social science: in other words, through a collaborative effort on the part of community health specialists and social scientists. Too frequently in the past health specialists were well trained in epidemiology but lacked



expertise in social research, whereas social scientists lacked training in epidemiology. This dichotomy may explain why the findings of earlier studies on the social and economic impact of tropical diseases were often erroneous or did not take into account the importance of underlying social and economic conditions. Scepticism about the value of social science studies on tropical diseases was the result. Projects supported by SER are now demonstrating that well-conceived, well-executed studies can give results directly applicable to the improvement of disease control.

Since 1980, all projects supported by SER have been based on institutions in tropical countries and carried out by investigators from these countries, who have a greater understanding of local situations and closer contact with communities and disease control authorities than foreign experts.

There are a great variety of problems to be solved and topics to be studied. Each topic is usually determined by a research team that includes national control programme staff. SER first supports research on basic social and economic factors influencing disease transmission and control and then examines how control operations are organized and put into effect. On completion of a research project, recommendations for improving disease control are given directly to national control programmes and local communities.

#### 11.1 Highlights of recent activities

Results directly applicable to the improvement of disease control that have emerged from SER projects during the reporting period include:

- a method of analysing the cost and performance of malaria control (Thailand);
- evidence that local beliefs and behaviour influence the effectiveness of filariasis control (Malaysia and Philippines);
- new methods of identifying and solving leprosy control problems related to stigma and local attitudes (Philippines);
- new multidisciplinary methods, currently being developed, of assessing the social and economic impact of disease (Brazil, Colombia, Philippines, Sudan and United Republic of Tanzania);
- evidence of wide variability in the applicability of community participation and new methods of assessing locally its effectiveness in disease control (Brazil, Kenya, Nigeria and Sri Lanka).

#### 11.2 The future

SER will give priority to research projects which seek to incorporate the findings of social and economic studies into disease control programmes. To this end, more extensive links will be established with WHO's programmes for disease control and with ministries of health. In collaboration with other agencies, SER will seek to establish additional networks of scientists involved in social and economic research on tropical diseases. Training programmes will be developed in social sciences related to tropical diseases; a proposed M.Sc. course in health economics will be reviewed in 1985 by TDR's Research Strengthening Group. A series of reports is being started which will present case studies on social and economic research on tropical diseases.

More research is required on the cost-effectiveness of intervention and delivery systems (including community participation) and resource allocation. SER will promote research on social and economic factors involved in the transfer of new technologies developed by TDR - new diagnostic techniques, new vaccines, new vector control tools (tsetse-fly traps and guinea-worm filters, for example) and new drug regimens.



## 12. STRENGTHENING OF RESEARCH CAPABILITIES IN DEVELOPING COUNTRIES WHERE THE DISEASES ARE ENDEMIC

TDR supports research throughout the world. A special effort is made, however, to involve scientists and institutions in developing countries in the planning and execution of this research. Scientists from developing countries are engaged in all aspects of research funded by the Programme, from basic biomedical sciences to clinical and field activities. Already they are playing vital roles in the final development of the products of research - drugs, vaccines and diagnostic tests - and in the adaptation of these products for local use within national disease control programmes.

Much of this work is carried out under TDR's different scientific working groups (SWGs). In addition, the Programme has a direct mechanism for strengthening the research capabilities of the developing countries: the Research Strengthening Group (RSG). The respective roles of RSG and the SWGs have been clearly defined in relation to the developing countries, and mechanisms have been established to ensure that they support and complement each other. Both RSG and SWG grants have provided opportunities for the training of young research scientists, in some cases enabling them to complete requirements for higher degrees. RSG grants have made it possible for institutions in developing countries to make significant contributions to priority areas identified by the SWGs. To enhance local biomedical and health resources, the Programme strengthens the infrastructures of selected national institutions and trains key personnel, but always in the context of national health development plans and existing programmes of research and disease control.

Since the start of the Programme the proportion of operational funding going to developing countries where the diseases are endemic has steadily increased, reaching a record 58% for 1983-1984. Up to September 1985, over 60 institutions received grants through RSG in support of research activities, and nearly 600 scientists and other research personnel received training grants. Institutions are also being strengthened through their participation in the research and development activities of the Programme; formal training courses have been supported by the Programme for M.Sc. degrees in medical entomology, epidemiology and malacology, and short courses and workshops have been organized to promote the rapid transfer of technology to developing countries. Scientists and institutions in developing countries have made major contributions to the development of tools for the treatment and control of the six target diseases, notably in activities best carried out in the areas where they are endemic - epidemiological surveys, clinical trials, social and economic research. These activities have resulted in important scientific achievements: the discovery of *Trypanosoma cruzi* schizodemes, test kits for malaria-parasite sensitivity to drugs, and the worldwide mapping of *P. falciparum* resistance to chloroquine, to mention only a few. Strengthened institutions are providing training for scientists from other institutions in the same or different countries.

### 12.1 Progress in strengthening of research capability

Strengthening research capabilities in developing countries is a long-term process. Even at this relatively early stage there are encouraging signs that significant progress has been made: the number of projects originated by scientists in developing countries has grown steadily, as has the number of scientific publications resulting from projects supported in developing countries.

### 12.2 Scientific contributions

- Scientists and institutions in developing countries have now made significant contributions to the Programme by participating in the work of the different TDR scientific working groups and in activities supported by RSG.
- Institutions in Brazil, Thailand and Zambia have carried out 18 clinical trials of the antimalarial drug mefloquine; these trials provided the bulk of the clinical information required to obtain registration of the drug.



- In collaboration with the Liverpool School of Tropical Medicine in the United Kingdom, the Onchocerciasis Chemotherapy Research Centre in Tamale, Ghana, has made significant contributions to the development of new drugs for the treatment of onchocerciasis.
- The Clinical Research Centre in Nairobi has produced evidence that led to the revision of traditional drug regimens using pentavalent antimonials in the treatment of visceral leishmaniasis. The revised schedule was endorsed by a WHO Expert Committee on the Leishmaniases.<sup>1</sup>
- The Institute of Tropical Medicine at the University of São Paulo, Brazil, is the coordinating centre for a network of 14 institutions collaborating on the standardization of serodiagnosis in Chagas' disease.
- Scientists working at the Centre for Medical Education and Clinical Research and the Latin-American Institute for Medical Research in Argentina have produced lesions in the cebus monkey comparable to those of chronic Chagas' disease.
- A long-acting insecticidal paint has been developed at the Federal University of Rio de Janeiro, and is being used by the Brazilian Chagas' disease control programme in a large-scale field trial in Goiás State.
- The Malaria Eradication Service in Manila, in collaboration with the WHO Regional Office for the Western Pacific and TDR, has organized the production of "micro" field kits for testing the sensitivity of P. falciparum to 4-aminoquinolines and mefloquine.
- Work on the clinical pharmacology of chloroquine, conducted in Ibadan, Nigeria, in collaboration with scientists at the Karolinska Institute in Sweden, and at the National Drug Research Centre of the University of Science in Penang, Malaysia, has provided new information about the drug's pharmacokinetic properties.
- The Institute of Malariology, Parasitology and Entomology in Hanoi has carried out baseline research on the epidemiology of P. falciparum malaria which should serve as a basis for improving the national control programme.
- In the Faculty of Tropical Medicine, Mahidol University, Bangkok, a multidisciplinary group of epidemiologists, behavioural scientists, clinicians and parasitologists has contributed substantially to the development of strategies for malaria control.
- At the Oswaldo Cruz Foundation in Rio de Janeiro, molecular biologists are using DNA restriction enzyme analysis to classify T. cruzi. The new classification is now being applied to epidemiological research on Chagas' disease.
- Scientists in Thailand have made important contributions to the understanding of the basic biology of malaria parasites and the mechanisms of antimalarial drug action and of Plasmodium resistance to drugs.

### 12.3 Role of strengthened institutions

Some strengthened institutions are now becoming regional reference and training centres in their respective disciplines. The Centre for Malacological Research in the Department of

<sup>1</sup>WHO Technical Report Series, No. 701, 1984 (The leishmaniases: report of a WHO Expert Committee).



Biology, Faculty of Sciences, Mahidol University, Bangkok, for example, has now become a regional reference and malacology training centre for South-East Asia. The Programme is making increasing use of training facilities available in endemic countries. Of 139 training grants awarded during 1983-1984, 52 went to students who were to complete part or all of their training in another developing country.

At the national level, institutions being strengthened by TDR are providing ministries of health with technical support for disease control activities, and data from field studies are being used to plan, modify and evaluate control programmes. Over the next two years, RSG will focus on strengthening capabilities in field research and basic biomedical sciences.

#### 12.4 The future

As the first phase of RSG's strategic plan comes to an end, the second phase is being put into effect. In the immediate future, activities will focus on field research and basic biomedical research. As new products and methods for disease control are developed there is an urgent need to increase the capability of scientists and institutions in endemic areas to evaluate them in the field. The Programme will therefore intensify its efforts to train appropriate personnel in epidemiology, medical entomology and social sciences, where trained staff are in short supply, and will continue to work with national authorities to identify research needs and to establish plans for the implementation of research in the field through institution-strengthening activities. With the disestablishment of the Scientific Working Group on Biomedical Sciences, RSG has been assigned the task of strengthening selected institutions in developing countries in the use of modern biomedical concepts and techniques in research on the six diseases, with emphasis on immunology, molecular biology, biochemistry and genetics.

#### 13. TDR'S CHANGING ROLE IN RESEARCH AND DEVELOPMENT

Initially, the role of TDR was to stimulate and support research on the six target diseases. From 1975 to mid-1985 the Programme supported a total of 2519 projects, of which 1982 (79%) were in developing countries where the diseases are endemic. One measure of the output of this research is the number of reports of TDR-supported work published in the scientific literature, which had reached 4136 by mid-1985, compared with 2798 at the end of 1983 and 1800 at the end of 1982.

In many cases Programme support has been seminal, providing encouragement and often enabling scientists to obtain additional resources. Most of the scientists working on malaria vaccines, for example, received their first grants from WHO and TDR, and now obtain more extensive funding from other sources.

TDR is increasingly called upon to coordinate efforts now supported by a variety of funding agencies. The Programme fulfils this new role in many ways: by creating a framework for future research through the organization of planning and review meetings and the publication of progress reports and "state-of-the-art" reviews; by conducting workshops for the standardization of reagents; by setting up reference biological reagents and parasite strains; and by promoting exchange visits between scientists.

The Programme is also being called upon to collaborate with the pharmaceutical industry in the testing and further development of agents that were discovered, in some cases, with TDR support. The Programme's ability to organize the clinical and field evaluation of new products in areas where the diseases are endemic is being increasingly recognized.

#### 14. MAINTAINING THE MOMENTUM

The mechanisms established by TDR to promote research and carry research findings through to the point where they become practical tools for disease control seem to work. But if the full benefits of the initial investment in creating these mechanisms are to be reaped the effort must be sustained: promising scientific leads take time to develop into useful disease control tools - time and, of course, money.

A threat to such sustained effort is the widening gap between the TDR programme budget and the resources being made available to finance it through voluntary contributions from government agencies, philanthropic foundations and other sources. Planned activities cannot be completed nor hoped-for results achieved as quickly as they might be unless this gap is closed, and the promise of some exciting leads cannot be fulfilled as urgently as it should be.



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On the other hand, parasitic diseases are coming more and more to exert their own fascination as subjects of scientific scrutiny. More scientists than ever before are aware of the human problems related to tropical diseases. And the interest and concern of research funding agencies and of industry have been aroused.

TDR's efforts are beginning to bear fruit and to justify the hope that lasting improvements can be made in the health of peoples in the tropics. It is now a critical necessity that adequate, sustained financial support should be forthcoming so that these early results can be elaborated to form a unique, powerful and realistic offensive against the diseases that have kept these peoples for so long under so heavy a burden of suffering.

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ANNEX 3

TOBACCO OR HEALTH<sup>1</sup>

1. WHO PROGRAMME ON TOBACCO OR HEALTH

Report by the Director-General

[EB77/22 Add.1 and Add.2 - 15 November 1985 and 11 January 1986]

Tobacco smoking and the diseases that it causes have reached pandemic proportions in the developed countries and are rapidly gaining ground in the developing countries. In many of these countries cigarettes usually yield higher tar levels than those available in the developed countries. An additional major public health problem will shortly arise in the developing countries before communicable diseases and malnutrition have been controlled, and the gap between rich and poor countries will thus be further expanded. Nothing less than the removal of this man-made hazard would be compatible with WHO's goal of health for all by the year 2000.

The objective of the action programme on tobacco or health is, through collaboration with countries, to counteract these harmful trends and, in particular, to prevent tobacco addiction from taking root in youth. In certain developing countries, forms of tobacco use other than smoking are prevalent and cause specific diseases. These forms are also considered in this report.

As tobacco use is a multifaceted problem, multiple approaches are needed to tackle it. Among these are: collection and dissemination of tobacco use data; education and information; legislation to restrict smoking and to limit the promotional pressure of the tobacco industry; help for smokers in stopping smoking; involvement of the health professions, as well as of political, social and - in some countries - religious leaders in an exemplar role; elimination of agricultural, market, and labour dependence on tobacco production; collaboration between WHO and other relevant organizations and bodies of the United Nations system and the nongovernmental organizations active in this field; and international collaboration, including technical cooperation among developing countries (TCDC). Tobacco has proved to have a strong dependence-producing effect, due to its nicotine content, and that effect must be recognized in preventive and treatment strategies.

As a result of increasing public awareness of the harmful health effects of smoking, and thanks to a number of different control actions described in this report, the habit is becoming socially less acceptable and a decrease in smoking is beginning to emerge as a trend, but only in some highly industrialized countries. The extent of the problem regarding tobacco and the essential elements of tobacco control programmes have been determined. What is needed now is the design of relevant national programmes and their implementation through vigorous and persistent action at the country level, with appropriate cooperation and support of WHO and other partners at the international level.

Guidance was sought from the Programme Committee of the Executive Board on the types of action that WHO should emphasize in its efforts towards controlling the smoking epidemic, and on whether a draft resolution on the subject should be submitted to the Executive Board.

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<sup>1</sup> See resolution EB77.R5.



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## EXECUTIVE SUMMARY

This report has been prepared in response to the request by the Executive Board at its seventy-fifth session in January 1985.

Resolution WHA33.35 in 1980 requested the Director-General to further develop an action programme on smoking and health. The Executive Board and the World Health Assembly in their 1985 sessions expressed concern and it now appears that the time has come for a programme on smoking and health to be included in the classified list of programmes for the Eighth General Programme of Work of WHO. A recommendation to that effect was already made by the WHO Expert Committee on Smoking Control Strategies in Developing Countries, when it met in 1982.

The present report describes the magnitude and extent of the health problem caused by the use of tobacco (particularly, but not only, in the form of cigarette smoking), the apparent advantages and manifest disadvantages of tobacco production and consumption for national economies, WHO activities combating the problem, the effectiveness and the results of national and international smoking control actions, and plans for future activities. The report also refers to the guidance provided by the Programme Committee of the Executive Board.<sup>1</sup>

Health problems. Cigarette smoking is the major avoidable cause of ill health and premature mortality in countries where it is widespread. It is responsible for about 90% of all cases of lung cancer, 75% of chronic bronchitis and emphysema, and 25% of cases of ischaemic heart disease, as well as for a number of other types of cancer, pregnancy complications, and respiratory diseases in children exposed to passive smoking. In many developing countries the cigarette smoking habit is already widespread; in others, particularly the least economically privileged ones, the habit is beginning to catch on noticeably and must be stopped before it is too late. In some developing countries traditional forms of tobacco use, for example, reverse smoking and tobacco chewing, bring about other disease manifestations, such as oral cancers. Besides being a cause of premature deaths through the diseases that it causes, cigarette smoking is the leading cause, in industrialized countries, of fires in residential accommodation and of forest fires that entail numerous injuries and deaths, and severe economic losses.

Worldwide use. Whereas in most industrialized countries the smoking habit is decreasing and is becoming socially less acceptable, in developing countries it is on the increase, fuelled mainly by intensive and ruthless promotional campaigns on the part of the tobacco industry. In most developing countries, unfortunately, the legislative controls and other measures - which in industrialized countries succeed in limiting the use of tobacco - do not exist or are at best inadequate.

Behavioural aspects. Once the young have experimented with smoking (or other forms of tobacco use) under peer pressure, promotional inducement, or as part of their rebelliousness and risk-taking behaviour, they become confirmed smokers because of the social reinforcement of the habit and the dependence potential of nicotine.

Economic aspects. In the short run, tobacco production is a source of revenue to many governments, as well as to farmers, retailers and others who work in this and related fields. Most of the revenue, however, goes to the tobacco industry. In the long run, developing countries will face greatly increased domestic consumption, increased import of foreign cigarettes, increased public health problems due to tobacco-related diseases, and higher rates of absenteeism from work among smokers. Some developing countries may also face deforestation that occurs partly as a result of tobacco production. All these factors entail, besides the deterioration of the people's health, huge economic losses. Several studies have demonstrated that these losses in the long run outweigh the economic benefits. Economic considerations apart, tobacco use is essentially an ethical and health issue.

WHO action. If WHO's message about smoking and health is to reach the large public and influence national policies, the Organization and its leadership must be seen to act as health advocates in the fight against the spread of the smoking pandemic. Several

<sup>1</sup> The Programme Committee's report is reproduced as part 2 of this Annex.



resolutions of the Executive Board and World Health Assembly have guided, since 1970, WHO's global and regional activities in smoking and health, which have included expert committee meetings, intercountry seminars, assistance to research, the publication of the newsletter Tobacco Alert, dissemination of information, World Health Day 1980, and support of legislation. Collaboration has also been established with other organizations and bodies of the United Nations system and with nongovernmental organizations.

Future action. This will concentrate on education and information of the public and of sociopolitical leaders, and youth; promotion of national legislation, for example to ban tobacco promotion, limit smoking in public places, and use price policies as a deterrent to tobacco use; operational research, for example to set up national support structures, to identify methods for bringing about large-scale cessation of smoking, to find economically viable alternatives to tobacco production, to involve the mass media as effective health message communicators, and to limit the tobacco industry's promotional drives.

Evaluation of anti-smoking action. Although it is difficult to quantify the results of anti-smoking activities, promising trends can be discerned. In many countries where long-term comprehensive anti-smoking education and other smoking control activities have been carried out, for example, Australia, Canada, Finland, Norway, Sweden, United Kingdom of Great Britain and Northern Ireland, and the United States of America, a decrease in the prevalence of smoking and in per capita tobacco consumption has occurred in most strata of the population. Smoking-related diseases, e.g. cardiovascular disease and, in some countries, even lung cancer rates, are decreasing. Overall, in the industrialized countries smoking is becoming socially less acceptable. Worldwide, the number of countries that have adopted smoking control legislation has significantly increased. National and international conferences, seminars, "no-smoking" days and weeks, intercountry consortia and similar events to counteract the spread of smoking have also been rapidly increasing in number and intensity in both the industrialized and the developing world, thus showing the concern of the governments for this problem. More and more nongovernmental organizations are joining forces with WHO in building up worldwide anti-smoking advocacy.

Guidance was sought from the Programme Committee of the Executive Board on whether the lines of action followed by WHO in tackling the problem of smoking and health on a global scale are sound, whether other approaches are needed, and whether a draft resolution should be prepared for the attention of the Executive Board and the Health Assembly.

## I. INTRODUCTION

1. This report on the smoking pandemic today and the ill effects on health of the use of tobacco in all its forms has been prepared for consideration by the Programme Committee of the Board in response to concerns expressed by the World Health Assembly and the Executive Board at their 1985 sessions. It describes the situation as it is now known, in terms of the extent of the public health problem, analyses worldwide trends in the use of tobacco, and states the case for and against tobacco production and consumption. Strategies for coping with the problem are then outlined, including epidemiological assessment, national and international activities and evaluation of results.

2. Although the WHO programme on smoking and health is a separate programme with its own programme activities, it receives and embodies in those activities contributions from a number of other programmes that are concerned with different aspects of the health problem, mainly those on cancer, cardiovascular diseases, public information and education for health, health legislation and the promotion of mental health.

3. The evidence of a causal relation between the use of tobacco, whether for smoking or for chewing, and ill health is now overwhelming. It has been reviewed by numerous national and international committees whose reports on smoking and health are known worldwide. Reference is made, in this connection, to the series of reports on smoking and health issued by the Surgeon General of the United States of America (1a,b,c,d), the reports of the Royal College of Physicians, United Kingdom (2a,b,c), the reports of WHO expert committees (3a,b,c) and technical programmes (4,5,6,7,8,9), and the reports of the International Union against Cancer (10a,b) and of the International Agency for Research on Cancer (IARC) (11). The Agency has looked at tobacco chewing (11a) as well as smoking (11b). The reader is referred to the above reports for full details; only a summary of the findings is given here. Only the tobacco industry denies the role of tobacco in causing disease. The onus of proving that tobacco use is not a cause of disease should thus be on the tobacco industry itself.



4. The burden of smoking-related diseases, in terms of ill health and human misery and the consequent health and social costs, is staggering and it is WHO's mandate to collaborate with Member States, as well as with other organizations and bodies of the United Nations system and nongovernmental organizations, in containing and eliminating this modern pandemic. In the absence of strong and resolute action, the prospects of achieving the goal of health for all by the year 2000 will be greatly diminished.

5. If present trends continue and effective national action is not taken, morbidity and mortality from tobacco-related diseases will rise, both in the developed countries and, especially, in the developing countries.

#### SITUATION ANALYSIS

### II. EXTENT OF THE TOBACCO-RELATED PUBLIC HEALTH PROBLEM

#### Diseases caused by tobacco use

6. Tobacco smoking is beyond doubt one of the major avoidable causes of ill health and premature mortality in countries where it is widespread. It is responsible for about 90% of all cases of lung cancer, 75% of chronic bronchitis and emphysema, and 25% of ischaemic heart disease in men under 65 years of age (3b). The use of tobacco, including traditional forms of tobacco chewing, is responsible for 90% of oral cancer deaths in south-east Asia. It is estimated that one-third of all cases of cancer are related to tobacco use. Calculations indicate that at least one million premature deaths occur yearly worldwide because of tobacco use (3c). A report from the United States of America (12) shows that 25% of all deaths in the country can be attributed to the consequences of smoking compared with 5% linked to alcohol and 2% to use of other addictive substances (Table 1). In Cuba, smoking-related diseases account for over 30% of all deaths (13), and in the United Kingdom for about 15-20% (2). According to a report of the Royal College of Physicians, London, the extent of the problem is such that, of 1000 young male adults in England and Wales who smoke cigarettes, on an average, one will be murdered, six will be killed on the roads and 250 will die prematurely of tobacco-related diseases (2c). Although repeated attempts are made by the tobacco industry and other vested interests to minimize as "only statistical" the evidence of a causative role of tobacco smoking in lung cancer and coronary heart disease, this evidence is overwhelming and beyond any reasonable doubt. It is based on thousands of independent publications resulting from studies of all kinds - prospective, retrospective, clinical, case-control, epidemiological and experimental - carried out in the majority of countries (3c). Environmental pollution, which is often blamed by vested interests in an attempt to side-track attention from the smoking issue, is of lesser importance as a public health problem compared to tobacco smoking.

#### Cardiovascular diseases

7. It is well known today that cardiovascular diseases (together with cancer) are major health problems in the developed regions of the world, and that they are becoming serious problems in developing countries as well. For example, in the United States a report of the Surgeon General on cardiovascular diseases (1b) concluded that, during the period 1965 to 1980, there were over three million premature deaths among Americans from heart disease attributed to cigarette smoking and that, unless smoking habits of the American population change, as many as 10% of all people now alive may die prematurely of heart disease attributable to their smoking. Similar trends are now appearing in many developing countries and, for example, cardiovascular diseases have already become one of the leading causes of death in China, Malaysia, Mauritius, and Sri Lanka.

8. The influence of smoking is independent of, but also synergistic with, other risk factors, such as hypertension and high serum cholesterol levels. The relative risk is greater at younger ages; the risk to the smoker increases with the amount smoked, but decreases with cessation of smoking until, some years later, it becomes almost the same as that of the life-long non-smoker. Cigarette smoking seems to be particularly important in causing peripheral artery diseases and sudden death from coronary heart disease, especially in men under 50 years of age. It is sometimes argued that the urge to smoke and the diseases related to smoking are both due to genetic predisposition with no causative relationship. Studies of smoking-discordant male twins, however, have shown that, while psychological scores and life event scales were practically the same between the smoking and non-smoking



co-twins, the incidence of angina pectoris and of myocardial infarction was significantly higher among the smoking co-twins, a finding which supports the conclusion that cigarette smoking is a causal factor in coronary heart disease (14).

#### Cancer

9. The use of tobacco, whether for smoking (6) or for chewing (7), is cause-related to one-third of all cancers globally (8). Prevention of tobacco use would therefore be one of the most cost-effective approaches in cancer control (8,15,16). While cigarette smoking is implicated in many types of cancer, its responsibility is particularly striking for the great majority of lung cancer cases, the number of which has increased notably in all countries where mortality statistics are reliable. This trend is not confined to industrialized countries but is present in the developing countries as well. The evidence of a causal relationship is clear (3b,c,11). On cessation of smoking, the relative risk of lung cancer developing declines slowly almost to the level of the risk for the life-long non-smoker (3b). Along with the prevalence of the smoking habit, lung cancer mortality in women in 28 developed countries increased greatly between 1960 and 1980 (16). For instance, in Australia, the death rates from lung cancer in women rose rapidly from 8.9 per 100 thousand in 1975 to 14.1 per 100 thousand in 1982. In the United States lung cancer is catching up with breast cancer as the leading cause of cancer death in women (17).

10. The disease pattern in developing countries is likely to show an increasingly close resemblance to that of the industrialized countries, and that change has already taken place in many areas. For example, in Shanghai County, an urban area near the City of Shanghai in China, the leading causes of death in 1961-1962 were infectious diseases, accidents, respiratory diseases, digestive diseases and neonatal deaths (15). By 1978-1980, cancer had become the leading cause, followed by cerebrovascular diseases, heart diseases, respiratory diseases and accidents. This shift in health problems took place over less than 20 years and is marked by the emergence of diseases caused by or related to the use of tobacco. Although the overall consumption of manufactured cigarettes per capita appears to be rather low, because few women smoke, in reality tobacco consumption is very high (18), use of home-grown tobacco being widespread and very largely unreported (19).

11. Perhaps the most important feature in the relationship between cigarette smoking and lung cancer is the strong correlation between the duration of regular cigarette smoking and subsequent lung cancer rates. Doubling the duration of regular tobacco use will result in an approximately 20-fold increase in lung cancer incidence. The earlier an individual begins to smoke the greater the risk of lung cancer developing: the risk is three-fold that of a non-smoker, if smoking starts at 24 years of age, but will be 15-fold if smoking starts in the early teens. All these relationships still hold when other factors, such as diet, stress, atmospheric pollution and urbanization, also associated with cardiovascular and respiratory diseases, are taken into account, thus pointing to the causality of smoking. It has been calculated that 600 000 new cases of lung cancer occur worldwide every year, most of them due to smoking (7). By the year 2000 the yearly number of new lung cancer cases may be as high as two million (20). Smoking also aggravates the cancer risk in certain occupation groups, for example that of bronchial cancer in workers exposed to asbestos.

12. Other uses of tobacco are also implicated in cancer. The habit of chewing tobacco and mixtures containing tobacco - which is widespread in south-east Asia - is responsible for 90% of oral cancer cases (8). The chewing of tobacco and the use of snuff passed its peak many decades ago in industrialized countries, but a resurgence has occurred since the mid-1960s and the habit, actively promoted by the tobacco industry, is becoming popular once again. A working group convened in 1984 by IARC concluded that tobacco thus used, and not smoked, is carcinogenic in man (11a).

#### Acute and chronic respiratory diseases

13. Cigarette smoking acts independently of, and synergistically with, the other risk factors contributing to non-neoplastic respiratory diseases. In developing countries it is now the most important cause of chronic bronchitis and relatively much more important than atmospheric pollution or occupational exposure as a cause of bronchopulmonary diseases. For instance, smoking increases markedly the risk to miners and smelters of developing chronic bronchitis. In purely economic terms, bronchitis is the most expensive of all the smoking-related diseases (3b). Many of the conditions which gave rise to widespread



bronchitis in nineteenth century England are occurring now in developing countries: poor social conditions in urban areas, poor nutrition, overcrowding leading to the spread of respiratory infections, and uncontrolled atmospheric pollution arising from rapid industrialization. A large increase in morbidity and mortality is probably inevitable, if urgent steps are not taken to reduce smoking as far as possible.

#### Other diseases and ill effects on health

14. Besides the major killers - lung cancer, coronary heart disease, and acute and chronic respiratory diseases - several other diseases and disease manifestations are caused or aggravated by the use of tobacco. They include oral and bladder cancers, as well as cancers of other sites, peripheral vascular diseases, gastric ulcer, dental diseases, subarachnoid haemorrhage, and pregnancy complications.

15. Recent evidence also suggests that the consequences of smoking are particularly deleterious to reproductive health (21). They affect contraception and fecundity, pregnancy, birth outcomes, lactation, early childhood development, and the development of cancers of the reproductive system of both men and women. For example, the risk of myocardial infarction among women using oral contraceptives is 10 times greater among smokers than among non-smokers (1e). Recent studies reflect an increased risk of spontaneous abortion, fetal death, and perinatal death rising in direct parallel with the level of the mother's smoking during pregnancy. They also indicate a 20% increase in the perinatal death rate for children of women who smoke less than one packet a day, and a 35% increase for consumption above that level. Smoking in pregnancy is a problem in Latin America where surveys show that, in urban areas, more than 20% of pregnant women smoke (19). Studies have also consistently shown that smoking during pregnancy is associated with a more than two-fold increase in the proportion of small-for-date babies (<2500 g), the proportion increasing with the number of cigarettes smoked (1e,3b). The mother's smoking also contributes to prematurity, at least 11% of pre-term births being attributable to it. Because the adverse effects on the fetus are so numerous, it has been suggested that smoking by pregnant women may be regarded as a form of child abuse. Heavy cigarette smoking has been linked with decreased fecundity and with infertility, and amenorrhoea; it also appears to cause a dose-response lowering of age at menopause. Possible adverse effects of heavy smoking on male fertility have been reported, including impaired spermatogenesis, sperm morphology and motility, and androgen secretion (21).

16. Deaths and losses of property are also indirectly caused by smoking. Sixty-five thousand fires in residential accommodation, resulting in about 2000 deaths and 5000 burn casualties, are caused each year in the United States of America by careless smoking, mainly of cigarettes (22,23).

17. Although nowadays cigarette smoking is the most commonly practised form of tobacco use, it is not the only one. Others, such as the smoking of hubble-bubbles, hookahs, narghiles, bidis, and so on, and snuff-taking and the chewing of tobacco leaves, either alone or in combination with other vegetable and mineral materials, are both traditional and widespread in many developing countries, and with them the diseases that they cause. Respiratory diseases, for example, are spread by the shared type of hubble-bubble smoking, and oropharyngeal cancer is associated with tobacco chewing and with reverse smoking, i.e., smoking with the lighted end inside the mouth. Bidi-smoking yields very high concentrations of tar and nicotine, and may be regarded as a major contributor to the development of ischaemic heart disease and other cardiovascular disorders, as well as cancers of the lung, oropharyngeal cavity, oesophagus, and larynx. These observations are of capital importance not only with regard to the smoking habits traditional in the developing countries, but also in view of the increasing trend, particularly among youth in some industrialized countries, to use tobacco otherwise than for smoking, e.g., for chewing and as snuff, and to smoke bidis, in an ill-advised attempt to avoid the adverse health effects of cigarette smoking. These forms of tobacco use also bring about nicotine dependence.

#### Effects of involuntary, compared with active, smoking

18. While the disease effects described above are often well-recognized for the direct consumer, insufficient attention has been given to what is known as "passive" smoking, i.e., smoking "enforced" on others. Tobacco smoking is the largest source of indoor pollution; it



affects not only the smoker directly but also, indirectly, those obliged to inhale smoky air. Studies suggest that the lung cancer risk among non-smoking wives of smokers is higher than that of non-smoking wives of non-smokers (25,26). A recent study confirmed that non-smoking wives run a noticeably higher risk of developing lung cancer if exposed to passive smoking of 20 or more cigarettes per day, as compared to non-smoking wives of non-smoking husbands (26a). A new IARC monograph states that "passive smoking gives rise to some risk of cancer" (11b). Early signs of impairment of small airways function have been detected in non-smokers constantly exposed to passive smoking at the place of work (27). The elderly, children, and cardiac or asthmatic, and hypersensitive subjects can be adversely affected by smoke produced in their vicinity. Health hazards apart, smoke in the environment is a nuisance; exposure to it brings discomfort to many non-smokers, and is increasingly considered as socially unacceptable. Consequently, there is an observable trend towards separating areas for smokers and non-smokers in aircraft, other public transport facilities, and enclosed public places.

19. A major aspect of the harm done to children lies in the example set them by adults, but several studies have shown that the inhalation of cigarette smoke is in itself harmful. In particular, smoking by parents has been proved to increase the incidence of acute respiratory infections in small children, for instance the risk of an infant developing bronchitis or pneumonia in the first year of life is doubled if its parents smoke (3c). Children of parents who smoke are more likely to take up the habit themselves as they grow up and, if they do, they develop more respiratory symptoms than do those who refrain. If the mother smokes, the toxic components of the smoke are carried in the mother's bloodstream to the fetus, in effect subjecting it to passive smoking in another form. As mentioned in paragraph 15, more of the babies born of mothers who smoke are small-for-date than those born of non-smokers (1e).

### III. WORLDWIDE TRENDS IN TOBACCO USE

20. Addiction to smoking is spreading like a pandemic throughout the world. Starting as a predominantly male phenomenon in the industrialized countries, smoking is now practised by women and young people too in those countries and in the developing world, where the cigarette is nowadays the predominant form of tobacco use. Indigenous forms of tobacco use for smoking and for chewing are, however, also widespread in many developing countries, where the materials smoked or chewed are usually even more noxious than those used in the developed countries, and yield much higher levels of toxic components, particularly tar and nicotine. Such indigenous habits of tobacco smoking and chewing cause an incidence of diseases such as oral cancer and respiratory infections unknown in the industrialized countries. Poor housing and environmental conditions, malnutrition, absence or inadequacy of legislative measures to control tobacco promotion and use, and the lack of public education and information about the dangers of tobacco make the populations in developing countries especially susceptible to the forthcoming epidemic of tobacco-related diseases. According to some analysts of the tobacco economy, a major factor enhancing tobacco export possibilities from developed countries to the Third World was the perception of cigarettes as an affordable luxury in the poorer areas of the world (28). At present, cigarette consumption per capita in most of the developing countries is much lower than in the affluent countries (Table 2), but the prevalence of smoking is higher than in the developed countries, where intensive and sustained education and information action has brought about significant decreases in the number of smokers (Table 3). The number of manufactured cigarettes may not, however, provide an accurate picture of the intensity of smoking in certain developing countries where the use of bidis and home-grown tobacco is widespread.

21. Many governments will act with great speed when pharmaceutical products or food additives are merely suspected of harmful health consequences that might entail only a remote chance of the development of cancer, for instance. This is in marked contrast to common government reluctance to act on tobacco, which is demonstrably a cause of avoidable mortality and morbidity on a scale unmatched by any other currently available product for human consumption (3c). The message is clear: in the absence of strong and resolute government action, we face the serious probability that the damage done by the smoking epidemic will have started to take effect in the developing world within a decade and that a major avoidable public health problem will have been inflicted on the countries least able to deal with it as a result of unscrupulous commercial enterprise and government inactivity. Smoking diseases will appear in developing countries before communicable diseases and malnutrition have been controlled, and thus the gap between rich and poor countries will widen further (3b). This prediction is, unfortunately, now starting to be fulfilled.



22. In China and India, 25% to 30% of all males are dependent on tobacco smoking before they are 20 years old. Rates of adult male smoking in excess of 50% are found in a great many countries, especially developing ones. Although, in some developing countries, the prevalence of smoking is very low among certain groups of women, such as Moslem women, in others it approaches that of men. In rural areas of Andhra Pradesh in India, 67% of the women smoke, as compared with 81% of the men. In Papua New Guinea 95% of women and 97% of men are reported to smoke. Similarly high smoking rates among women are also found in Nepal (19,29).

23. Worldwide tobacco consumption is now stagnant. But the decrease in smoking in industrialized countries is offset by rapid population growth particularly in developing countries. This has fostered increased demand for cigarettes (30). Per capita consumption in Kenya increased by 32% between 1970 and 1980, and in Latin America by 24%, as compared with only 4% in North America. Cigarette consumption in Kenya increased from 3310 metric tonnes in 1972 to 4524 tonnes only eight years later, and is still increasing at the rate of about 8% per year (31). Tobacco consumption between 1976 and 1980 increased 5% in Indonesia and Malaysia, 3% in Brazil, 6% in Turkey, while it decreased in many developed countries, e.g., 7% in France, and 2% in the United States of America. In the United States the yearly per capita cigarette consumption was 610 in 1920, but had climbed to 1820 by 1940 and to 3850 by 1973 (32). Since then, it decreased to 1678 cigarettes in 1982 and for three consecutive years during the early 1980s domestic sales fell as a result of increased public health consciousness (33). In Pakistan, total cigarette consumption increased from 24 thousand million in 1970 to 39 thousand million in 1980. In India, it rose 400% during the same period. In Papua New Guinea the consumption trebled from 1960 to 1980 (34). In Brazil, about 135 thousand million cigarettes were smoked in 1981, while cigarette-related diseases far outstripped the infectious diseases as the leading cause of death (35). In the Islamic Republic of Iran, yearly cigarette consumption reportedly increased from 14 thousand million in 1980 to 32 thousand million in 1983 (36). Tables 4 and 5 show that the largest increases in consumption are in the developing countries. FAO has published per capita tobacco consumption figures for 1985 for 56 selected countries (37); these data are summarized in Table 4. The consumption projection to 1995 by the World Bank (Table 5) shows a very significantly greater increase in the developing countries than in the developed free-market economy countries.

24. Overall demand for tobacco is still rising, but production in the industrialized countries is expected to remain steady while that of the developing countries is expected to increase. A small number of large enterprises are responsible for manufacturing operations throughout the world, in both the developed and the developing countries. About 37% of the world's cigarettes are produced by state-controlled industries in centrally-planned countries, a further 17% are manufactured by state monopolies - e.g., in Austria, France, Italy, Kenya, Tunisia and Turkey - whose aim is to maximize government revenue. The remainder of the market is dominated by a few conglomerates which, although primarily interested in tobacco, have diversified their activities widely in other manufacturing sectors or trading enterprises.

25. The summary given in Table 6 clearly shows the upward trend in cigarette production throughout the world. The production of tobacco for purposes other than smoking - for chewing, or as plug, moist snuff, dry snuff, etc. - has been increasing over the past five to 10 years, but information is scattered or incomplete. In the United States of America production of tobacco in these forms increased about 3-4% per year during the 1960-1980s, and consumption increased by 11% per year (38). In most industrialized countries the percentage of leaf tobacco used for manufacturing snuff is very small, and in most countries chewing tobacco accounts for less than 1% of total leaf usage, except in the United States of America where the proportion is about 6%. Strong attempts are being made by the tobacco industry to revivify this sector of the market in many industrialized countries, thus bringing about additional and growing health problems for the world, for instance, cancer of the mouth. This situation calls for action. The main target of these new promotional activities is youth. Tobacco chewing is a fast means to provide addiction leading later to cigarette use.

26. In many of the developing countries, the picture is different and complex because, in addition to the accountable tobacco industry, there is also a very large cottage industry whose activities are difficult to assess. India probably presents the greatest challenge in this respect, but Bangladesh, Pakistan and Sri Lanka also have sizeable cottage industries producing bidis and chewing tobacco.



27. The worldwide picture of trends in tobacco use is not equally bleak everywhere. Indeed, it is important to note that in a number of countries, thanks to vigorous national action and increased public awareness, the trends in smoking, tobacco consumption and tobacco-related diseases have actually been reversed, particularly among the male population. These trend reversals are further discussed in paragraphs 129 to 141 below. In addition, information on the economic advantages and disadvantages of tobacco production and consumption is provided in Section V.

#### IV. BEHAVIOURAL ASPECTS

28. Why do people smoke? Probably the earliest mode of tobacco use was pipe smoking, which had ceremonial importance in the cultures where it originated. As a vehicle for tobacco, however, the machine-made cigarette outstripped the other forms of use as from the turn of this century. Smoking was traditional in China even before the 15th century, although it has not been established that the substance smoked was tobacco rather than other herbs. The actual discovery of tobacco by Europeans is considered to date from when Christopher Colombus landed in Central America at the end of 1492. The habit of smoking was popularized in Europe by soldiers returning from the Peninsular War (1808-1814) (39) and the Crimean War (1853-1856). From then on the habit spread to the rest of Europe and thence to Africa and Asia, brought in by explorers and traders.

##### Starting to smoke

29. Cigarettes are often tasted during childhood, i.e., at least in the case of boys, at the early age of 6 to 9 years; their use becomes more regular during adolescence. Then, unless the formation of the habit is stopped, experimenters become confirmed smokers in their late teens. Smoking being regarded as socially attractive, the wish to imitate adult behaviour, accompanied by rebelliousness towards adult disapproval of smoking by the young, the tendency to experimentation and to risk-taking, often suggested by cigarette advertisements, and peer group pressure are among the important factors that induce children to smoke. Tobacco is often a "gateway" drug, which is followed by alcohol and sometimes by other substances. Particularly in relation to adolescent behaviour, the factors, including risk-taking, which are important in relation to tobacco are equally relevant to the consumption of alcohol and other drugs. In terms of socialization processes, smoking and drinking are frequently simultaneous rather than alternate activities.

##### Reinforcement of the habit and the addiction potential of nicotine

30. The initial habit is reinforced by such factors as peer pressure, the imitation of exemplars, the status symbol value of smoking in some cultures, its value as a tool for social identification and interpersonal relations, and in most countries, by the promotional activities of the tobacco industry which, through seductive imagery, constantly associates smoking with desirable life situations, youth, success, and sex appeal. Then, in addition, the addictive potential of nicotine - the active alkaloid in *Nicotiana tabacum* - plays a predominant role in keeping smokers slaves to their habit. Smoking is the most efficient way of delivering a drug like nicotine, which reaches the brain within a few seconds. Most smokers experience withdrawal symptoms when they try to stop smoking, so that the desire to avoid the unpleasant effects of nicotine deprivation is a potent factor determining the continuation of the habit. Smoking can be even more addictive than alcohol or heroin, and a habit that is just as difficult to break.

31. The National Institute on Drug Abuse in the United States of America considers that dependence "in the classic sense is characterized by: (a) persistent regular use of a drug, (b) attempts to stop such use which lead to discomfort and which often result in termination of the effort to stop, (c) continued drug use despite damaging physical and/or psychological problems, and (d) persistent drug-seeking behaviour". WHO's International Classification of Diseases (ICD), Ninth Revision (1975), defines drug dependence as "A state, psychic and sometimes also physical, resulting from taking a drug, characterized by behavioural and other responses that always include a compulsion to take a drug on a continuous or periodic basis in order to experience its psychic effects, and sometimes to avoid the discomfort of its absence". By all these criteria, the use of tobacco, especially in the form of cigarettes, qualifies as a dependence-producing process. In the United States of America cigarette smoking has been found to be the most widespread example of drug dependence. Indeed, while only one in 10 alcohol users and four in 10 morphine users are compulsive daily users, nine



in 10 cigarette smokers are compulsive daily users (33). Russell (40) writes that "cigarette smoking is probably the most addictive and dependence-producing form of object-specific, self-administered gratification known to man". The Diagnostic and Statistical Manual of Mental Disorders of the American Psychiatric Association defines both a "tobacco withdrawal syndrome" and "tobacco dependence disorder". The Ninth Revision (1975) of the WHO International Classification of Diseases also includes tobacco dependence.

32. Nicotine, the dominant alkaloid present in tobacco, is rapidly absorbed from the lungs when presented as the sub-micron aerosol resulting from the high-temperature combustion of cigarette tobacco, and it is quickly distributed to the brain and the rest of the body. The role of nicotine is probably critical in both the acquisition and the maintenance of tobacco dependence, and this explains the difficulty some have in stopping smoking, as discussed in paragraphs 85 to 91. Nicotine is a powerful pharmacological agent which stimulates the release of a variety of endogenous neurotransmitters and hormones and, being mood-altering and psychoactive, produces an initial euphoria. Once smoking is established as a habit, consistency of pattern is ensured by environmental influences, as well as by pharmacological regulation. The smoker may perceive many immediate gains from smoking, whereas the deterrents may seem remote.

33. Psychological habituation, besides physiological addiction, also plays a role through the manipulation of the smoking material, i.e., having something to do with the hands and mouth. The importance of social rituals associated with smoking behaviour must also be acknowledged. Physical dependence, though probably the case of a number of smokers, is by no means general and many ex-smokers had little difficulty in "quitting".

34. Smokers find it difficult to concentrate and to perform at work under pressure or in repetitive or boring situations if deprived of cigarettes. High-nicotine yield cigarettes improved the performance of smokers in a rapid information-processing test, whereas deprivation of smoking decreased performance. The nicotine contained in cigarettes appears to reduce pain and anxiety in smokers taking part in these performance tests.

35. A further obstacle to individual discontinuation of smoking is the fear of gaining weight. This is particularly true among women. The mechanism of weight gain is poorly known. It is usually attributed to increased food intake, often of sweets, by the ex-smoker to overcome the oral withdrawal symptoms. Weight gain is, however, temporary and can be checked by sound eating habits and physical activity.

#### Low-tar cigarettes

36. In order to allay the fears of health-conscious cigarette smokers, the tobacco industry has intensively promoted a great variety of cigarettes which, when smoked in a smoking machine according to standard procedures, yield lower emissions of tar and nicotine. Such emission yields, however, cannot be extrapolated to real life situations in man. The amounts of tar and nicotine actually inhaled by the smoker may be higher in practice than is indicated by the test procedures (1d).

37. Nicotine is known to be a highly addictive drug. It is not a drug which is taken occasionally; it is one of the few which regular users need every few hours in order to prevent withdrawal symptoms. Most smokers will not tolerate for long very low nicotine or nicotine-free cigarettes as substitutes for "the real thing". They appear to regulate their smoking to achieve and maintain a desired level of nicotine in their blood stream, and are unwilling to tolerate a gradient of reduction in blood nicotine consequent on change to the use of cigarettes with low tar and nicotine yields. Such smokers compensate for lower delivery by such devices as crushing the end of the cigarette and thus blocking the ventilation holes, or by inhaling more often and more deeply, or by smoking more cigarettes. This behaviour really brings about an increase in inhaled tar, carbon monoxide, and other noxious substances present in the smoke.

38. From epidemiological studies it would appear that changing to low-tar cigarettes may have contributed to some reduction in the number of lung cancer cases. However, the harmful health effects of smoking in terms of cardiovascular function, pregnancy complications, and respiratory impairment, do not decrease (1e,3c,11). Another serious drawback is that children and women find it easier to start smoking these "light" cigarettes, so that in the long term, the availability of "light" cigarettes, far from helping people to stop smoking,



may actually encourage them to smoke. For these reasons, it is the policy of WHO to discourage the idea that low-tar cigarettes are "safe" cigarettes (4). Tobacco manufacturers should not be given any opportunity to suggest that low-tar cigarettes are safe to smoke; indeed, it must be made clear that there is no such thing as a "safe" cigarette.

#### V. POSITIVE AND NEGATIVE EFFECTS OF TOBACCO PRODUCTION AND CONSUMPTION

##### Tobacco production

###### Short-term benefits

39. Tobacco is produced in about 120 countries under all latitudes, except those in the cold climates of northern Europe and in the arid climates of some of the Arab countries. The contribution of developing countries to world tobacco production has increased from 50% in 1963 to 63% twenty years later, to an estimated 68% in 1995. The major tobacco producing and consuming countries are China, United States of America, Union of Soviet Socialist Republics, India and Brazil (18). On a short-term basis, tobacco production is of tangible economic significance to many producing countries (18). It provides jobs and income to tens of thousands of families engaged in tobacco growing, manufacturing and trade throughout the world. Tobacco provides revenue to a flourishing advertising industry (which, however, can easily find other sources of income), tax revenue to governments, and foreign currency when exported. Some developing countries, such as Brazil, Malawi, United Republic of Tanzania, and Zimbabwe, rely heavily on tobacco-generated income. It should be underlined, however, that most of the profits go to the tobacco companies rather than to the local producers (see paragraph 50).

40. In 1979-1981 the land used throughout the world for growing tobacco totalled 4.3 million hectares, of which 72% was in the developing countries (18). The growing of tobacco provides a reliable source of foreign exchange for many countries. The relative stability of tobacco prices contrasts with the instability of many other commodity prices and makes it an attractive proposition to many developing countries, where unstable commodity prices have proved to be a constant burden. It also generates a large number of jobs for small farmers and their families - tobacco is generally grown on very small family farms. It has been estimated (41) that worldwide some 35 million small farmers and their families rely on tobacco cultivated on plots ranging from 0.5 to 1.5 hectares. FAO statistics (18) show that, in Zimbabwe, the industry is the largest employer, supporting 17 000 farmers.

41. In Malawi, 100 000 families rely on the cash income tobacco brings, while in the United Republic of Tanzania, 370 000 (2% of the population) are dependent upon tobacco cultivation. In the south of Brazil, 115 000 farmers and a further 650 000 people gain a livelihood from the tobacco industry; in the Indian State of Andhra Pradesh, tobacco provides a living for 75 000 farmers and about 2 million other workers engaged in tobacco-related occupations. Even in the developed countries, where production is extensively mechanized, tobacco generates employment on a very large scale; for instance, half a million farm families in the United States of America are directly involved in tobacco production.

42. Furthermore, tobacco earns twice as much as sugar, five times as much as cotton and ten times as much as maize. By contrast with the US\$ 375 and US\$ 750 per hectare earned from corn and soybeans respectively, the gross income per hectare of tobacco ranges from US\$ 7500 to US\$ 10 000. Similarly, in Malawi the receipts from tobacco are three times higher than for tea, five times higher than for sugar and ten times higher than for groundnuts. This is true if income is calculated on the basis of land surface cultivated; but in financial investment terms, other crops are more profitable (18,42).

43. As with tobacco growing, the manufacturing operations involving tobacco generate employment and income. While in some large developing countries where manual methods are used the work-force thus employed can number hundreds of thousands, in the principal industrialized manufacturing countries it numbers less than 60 000. In income terms, in 1977, India's 300 000 tobacco workers earned US\$ 240 per year each, whereas a worker employed in the tobacco industry in Belgium earned US\$ 10 000. Similar comparisons can be made between other developed and developing countries. In Canada, stagnation of the tobacco market is causing large economic losses to tobacco farmers, who could however, with government assistance, convert to other crops.



44. The contribution of tobacco manufacturing to total industrial output is higher for the developing than for the developed countries. The role of tobacco in the economies of countries such as the United Republic of Tanzania and Zimbabwe is well known. In a number of African countries (Algeria, Burundi, Cameroon, Central African Republic, Madagascar, Mauritius, Morocco) the tobacco industry is listed among the eight most important revenue-earning undertakings. In Mali and Sierra Leone, it ranks first (43). Because of the predominance of large state-controlled concerns and other tobacco corporations with a network of licensing agreements, the majority of the world's manufactured tobacco products are for domestic consumption and less than 10% enter international trade.

45. Only a very small share of the total value of exports accrues to the developing countries, and even this has diminished during recent years as a result of rapidly expanding shipments (chiefly of cigarettes) from the United States, United Kingdom and the Netherlands. In 1976-1978 the developing countries accounted for 9% of world exports by value, but by 1981 this had fallen to less than 6%. Table 7 shows trends for cigarette imports and exports over the period from 1973 to 1981.

46. Tobacco growing is a valuable source of cash income to farmers. The proportion of agricultural income derived from tobacco is considerable, even where in absolute terms it is small. For example, Zimbabwe had a total income from tobacco in 1980 of US\$ 110 million - which is small compared with the tobacco incomes of Brazil (US\$ 200 million), Greece (US\$ 500 million), Turkey (US\$ 525 million), Japan (US\$ 1300 million) and the United States of America (US\$ 2700 million) - but that represented for Zimbabwe almost a quarter of agricultural earnings. Table 8 shows the gross income from tobacco crops and its contribution to agricultural income in selected producing countries.

#### Manifest disadvantages

47. Economic and environmental losses. On a long-term basis, however, tobacco production entails economic and environmental losses to the producing countries, especially the developing ones. Reports by United Nations agencies (44), as well as by other official bodies, e.g., the Ministry of Agriculture of the United Republic of Tanzania (45) and independent investigators (46,47), have documented such losses. In spite of this knowledge, however, no action is being taken to decrease tobacco production because immediate political realities command higher priority than future adverse environmental and health consequences.

48. The negative effects of tobacco production on the environment and economy of the developing countries are many and far-reaching and are superimposed upon the ill health and mortality consequent on tobacco consumption. World leaf trade is no longer expanding rapidly and on occasion it slumps. The overall trade fell by 3.4% in 1983 owing to the very large surpluses on the world market, to reduction in consumption in the developed countries, and to new manufacturing techniques which have reduced total leaf requirements. The long-standing price stability of tobacco in otherwise unstable agricultural commodity markets, which has made tobacco production so attractive to the developing countries, may therefore not continue.

49. Cigarette manufacturing trends are becoming less favourable to the developing countries in that their share of the export markets is falling and their cigarette imports are rising (Table 7) due to the prevalence of a tobacco habit encouraged and perpetuated by their own involvement in tobacco production. Thus there is a loss of foreign currency due to a reduction in leaf exports, a reduction in the export of manufactured tobacco products and an increase in imports of cigarettes, possibly resulting, in the longer term, in an overall net loss.

50. According to the United Nations Conference on Trade and Development "the developing countries are totally at the margin in the marketing decision process. They gain only an insignificant share of the total profit made from tobacco growing as their aggregate receipts from the tobacco industry are based, almost exclusively, on the demand response and the marketing decisions determined by the transnational tobacco companies" (44). These are mostly foreign-based.

51. Adverse effects of tobacco cultivation on the availability of food are well documented, although little known. Smokers worldwide spend between US\$ 85 and US\$ 100 thousand million annually to buy four billion cigarettes, i.e., more than 1000 cigarettes for each man, woman and child (48). When land or labour is scarce, any used for tobacco cultivation



reduces that available for food production. Similarly, to the extent that cash is spent on buying tobacco, correspondingly less is likely to be applied to the purchase of food, and so the nutritional status of the poor will decline. Reduced local food production may also lead to higher prices, which will penalize even non-smoking families. Because tobacco provides ready cash, food crops, such as rice in Nigeria, become a second choice for cultivation. The net result of such displacement of a staple food crop is that, as in the case of Nigeria, food has then to be imported (49).

52. Tobacco exported from a developing country generates valuable foreign exchange. If, however, most of the tobacco produced is consumed in the country of origin, the expected benefits are reduced by this loss of export earnings and by the costs of damaged health. In addition, the increased popularity of imported cigarettes may entail a huge drain on foreign currency. In Sudan, for instance, imports of foreign cigarettes in 1982 cost at least 40 million Sudanese pounds of badly needed foreign exchange (50). Similar situations have been recorded in Egypt (51), where 25 million Egyptian pounds were spent in 1976 on imported tobacco - an increase of 20% from 1975.

53. Soil degradation. Tobacco requires either fertile soils or regular inputs of commercial fertilizer into marginal agricultural land. However, most tropical soils are characterized by low nitrogen content, as well as by deficiency in phosphorus, and sometimes potassium. Tobacco production therefore depends on commercial fertilizer, the prices of which, especially those rich in nitrogen, are rising so sharply that already they are out of reach of most farmers. An alternative to dependence on commercial fertilizer is to exhaust soil fertility in one or two years, then to deforest for a new plot.

54. Pesticides. Tobacco is one of the crops that require the heaviest treatment with pesticides and herbicides. Vast quantities of pesticides are used on tobacco crops virtually throughout their seven-to-eight-month growing season. Most of these pesticides are toxic, and some are carcinogenic to the farmer and can contaminate village water supplies. Most developed countries either ban or severely restrict the use of persistent organochlorine pesticides, such as aldrin, which is instead supplied by the tobacco industry to some developing countries (46). Furthermore, not only do these pesticides constitute a danger to those handling them, they also find their way into the tobacco leaves which are eventually smoked or chewed and become dangerous to the consumer on that account as well. Thus where tobacco is home grown, treated with pesticides, and processed and consumed locally, the hazards to health are even more immediate.

#### Deforestation and desertification.

55. Tobacco curing is highly energy intensive. Much tobacco is sun-cured, but where wood is used as fuel it accounts for 10-15% of the product price - as in the case of Thailand, for instance. The Economist Intelligence Unit (London) estimated in 1980 that 80% of timber-generated fuel is used in tobacco curing. For every 300 cigarettes made in the developing world, one tree is burned (42); for every acre of flue-cured tobacco grown in developing countries, one acre of woodland is burned. In other words, one ton of wood is needed to cure one ton of tobacco. Pakistan alone annually consumes 1.5 million m<sup>3</sup> of wood for tobacco curing. About 8000 hectares of forest in Ilocos, Philippines, are consumed annually for curing. Similar destruction of forests is reported in Brazil. It has been estimated that in the State of Rio Grande do Sul the 100 000 tobacco farmers need the wood of 60 million trees, i.e., nearly 600 000 hectares of forest, in one year (52). Worldwide, about 2.5 million hectares of trees have to be used each year to flue-cure 2.5 million tons of tobacco (46).

56. In 1977, the United Nations Environment Programme warned that the shortage of firewood was rapidly becoming the poor person's energy crisis. The deforestation caused by the use of wood for fuel and industrial demand, including tobacco curing, in many areas of Africa contributes to the problem of accelerating desertification, as also does the clearance of the land for agricultural projects, including tobacco cultivation. The use of wood for curing competes with its use for cooking, warmth, and construction. The environmental impact of tobacco production can be clearly seen in the United Republic of Tanzania, where the tobacco industry is one of the main exploiters of forests on a regional and national level. About 600 000 m<sup>3</sup> of fuel wood are consumed annually for tobacco curing in the woodland regions of the United Republic of Tanzania. According to the Economist Intelligence Unit (52a), there are a number of countries in which fuel wood is the only effective source of tobacco curing, including Bangladesh, Brazil, Kenya, Malawi, Malaysia, Pakistan, Sierra Leone, and the United Republic of Tanzania.



57. Fuel-wood requirements for the flue-curing of tobacco thus contribute to the serious and intensifying problem of deforestation in developing countries. Current tobacco production depletes natural forest by 2.5 million hectares annually, and so is not sustainable. Sustainable tobacco projects would need 17.5 million hectares of fuel-wood plantations.

58. In summary, disappearing woodlands are now an identifiable environmental problem resulting from tobacco cultivation and processing in, for example, Nepal, Pakistan, Sri Lanka, Sudan, United Republic of Tanzania, and other developing countries. The reafforestation that the tobacco industry claims to do appears to be mostly cosmetic in nature.

#### Tobacco consumption

59. Between 1976 and 1980 tobacco consumption slowed down at the rate of 1.1% per annum in the industrialized countries, but continued to rise at a yearly rate of 2.1% in the developing countries (20). In most developing countries the tobacco industry is expanding practically unchecked, and marketing efforts capitalize on the concept that smoking symbolizes modernism and affluence.

#### Short-term benefits

60. The apparent economic benefits of tobacco consumption (i.e., smoking, chewing) can be summarized as follows:

- tax revenues (which, however, do not increase GNP and could be raised in other ways);
- income to retailers;
- income to the medical profession engaged in treating smokers affected by smoking-related diseases; and
- savings in old age pensions (as smokers live on average eight years less than non-smokers, at least in the highly developed countries).

The last two of the above benefits, although real ones in terms of economics, are obviously unacceptable on ethical grounds.

#### Manifest disadvantages

61. In the developed countries, a great disadvantage of tobacco consumption is the enormous burden placed on the community by the costs of the consequent ill health and mortality - a burden that can be measured in terms of the increased costs of medical services and use of scarce medical care facilities, along with reduced productivity and increased reliance on social assistance for family support. Tobacco consumption brings about major economic losses to society in terms of:

- increased medical expenditure due to smoking-related diseases;
- reduced productivity due to higher work absenteeism of smokers, and to their higher disablement and pre-retirement death rates;
- damage to property and loss of life resulting from the substantial number of forest and domestic fires that are caused by careless smoking (for instance, as mentioned in paragraph 16, in the United States of America every year 65 000 domestic fires entailing about 2000 deaths can be attributed to careless smoking);
- loss of manpower (which, in many developing countries, is usually the heavy-smoking intellectual and industrial élite) due to excess morbidity and premature mortality among smokers;
- miscellaneous but quantifiable costs, such as spoiled furniture and cleaning expenses; and
- other negative effects that stem from the increasingly competitive nature of the tobacco trade.



62. Several studies carried out in Canada, Poland, Sweden, Switzerland, United Kingdom, and United States of America have demonstrated the economic losses to society due to smoking (47,53,54). In the United States losses on account of tobacco consumption exceed earnings from tobacco production by some US\$ 8000 million per annum. In Canada, the yearly loss is about US\$ 3000 million. As mentioned in paragraph 52, imports of foreign cigarettes cost Sudan at least 40 million Sudanese pounds of badly needed foreign exchange in 1982 (50). Similar economic losses in foreign exchange were reported in Egypt (51). Between January and September 1984, as an example, certain European tobacco companies exported massive amounts of cigarettes (over one thousand million sticks) to some of the poorest, famine-stricken, African countries - Burkina Faso, Djibouti, Ethiopia, Niger, Somalia, and Sudan. These imports have to be paid for in hard currencies that these countries lack (28).

63. In addition to the perceivable economic losses due to the use of tobacco, a negative effect of enormous magnitude is the human misery caused by diseases related to tobacco smoking and chewing. Therefore WHO takes the view that, in the face of the ensuing health hazards, tobacco production cannot be defended any more than the production of other, even more remunerative crops, such as coca, opium poppy, and cannabis.

#### STRATEGIES TO COMBAT THE PROBLEM

#### VI. WHO ACTION TO ASSESS THE MAGNITUDE OF THE PROBLEM AND TO DEFINE PREVENTION STRATEGIES

##### Resolutions of WHO governing bodies

64. Bearing in mind resolutions EB45.R9, WHA23.32, EB47.R42, WHA24.28 and EB53.R31, concerning the health hazards of smoking and ways towards its limitation, the Twenty-ninth World Health Assembly (1976) recognized "the indisputable scientific evidence showing that tobacco smoking is a major cause of chronic bronchitis, emphysema and lung cancer as well as a major risk factor for myocardial infarction, certain pregnancy-related and neonatal disorders and a number of other serious health problems". In resolution WHA29.55, it recommended governments of Member States "to create and to develop effective machinery to coordinate and supervise programmes for control and prevention of smoking", "to strengthen health education concerning smoking, as a part of general health education", and "to give serious consideration to the legislative and other measures suggested by the WHO Expert Committee in its report on smoking and its effects on health" (3a).

65. Two years later, in resolution WHA31.56, the Thirty-first World Health Assembly (1978) stated that it was "seriously concerned at the alarming increase in production and consumption of cigarettes during the last two decades in some of the countries, particularly developing countries, in which it was previously not widespread" and noted that "few countries have so far taken comprehensive action to effectively combat smoking through educational, restrictive and legislative measures for the control of publicity and advertisements in the news media, combined with coherent taxation and price policies for tobacco cultivation and cigarette production".

66. The WHO programme on smoking and health as such was established in 1980, based on resolution WHA33.35, in which the Thirty-third World Health Assembly reiterated "its firm conviction that the effect of tobacco smoking is now a major public health problem in all industrialized countries and in many developing countries and that it will become so in the near future in all other developing countries unless action is taken now", urged Member States to strengthen, and to initiate where lacking, the smoking control strategies outlined in the previous resolutions, noted the report of the WHO Expert Committee on Smoking Control (3b), and requested the Director-General "to further develop an effective WHO action programme on smoking and health".

67. Three WHO expert committees have been convened. The first, the Expert Committee on Smoking and its Effects on Health, met in 1974 to summarize the evidence on the harmful effects of tobacco and to propose actions directed towards discouraging the use of tobacco. This Expert Committee concluded that "epidemiological evidence from many countries implicates tobacco smoking as an important causative factor in lung cancer, chronic bronchitis and emphysema, ischaemic heart disease, and obstructive peripheral vascular disease", and recommended that "governments should accept the responsibility of carrying out smoking control action by their own agencies and of stimulating nongovernmental organizations to take



action also. Action should include the dissemination of information, support for activities to help people to stop smoking, the promotion of legislation if further powers are needed, and research" (3a).

68. In 1978 an Expert Committee on Smoking Control met to review the latest evidence on the harmful effects of tobacco smoking, to review the world situation in regard to smoking control, and to suggest ways of helping Member States to prevent the spread of the smoking habit. This Committee stated that there can no longer be any doubt among informed people that in any country where smoking is a common practice, it is a major and certain removable cause of ill health and premature death, and that cigarette smoking is responsible for significant mortality from lung cancer, ischaemic heart disease, chronic bronchitis and emphysema. Detailed approaches were outlined for public information and public education programmes and legislative and restrictive measures to control smoking along with strategies at the national and international level (3b).

69. In response to increasing concern at the rapid spread of the smoking epidemic in the developing countries, an Expert Committee on Smoking Control Strategies in Developing Countries met in 1982. This Committee reported that the scientific facts are inescapable, and are equally valid in all countries: tobacco smoking is a cause of cancer of the lung, coronary heart disease, chronic bronchitis, and a number of other conditions, leading to disability and premature death. The Committee reviewed the evidence demonstrating the harmful consequences of smoking to health in developing countries and confirmed that anti-smoking and health campaigns should be a major public health priority all over the world.

70. In addition to problems of cigarette smoking, the Committee considered evidence of damage to health caused by more traditional forms of tobacco use in the developing countries, including the smoking of bidis (a hand-rolled cigarette), chutta (a cheroot smoked with the burning end inside the mouth), and the chewing of tobacco in a betel quid. The Committee, however, expressed its disappointment at the omission of smoking control activities from the WHO Seventh General Programme of Work (1984-1989) and, recommending that high priority be given to smoking control activities, stressed that "although other health problems may seem to be more pressing, only action now can prevent these problems from being exacerbated by smoking-related diseases" (3c).

#### Fact-finding and research

##### Seminars and other meetings

71. The smoking and health programme at global level has been involved in a number of regional and national tobacco control workshops and seminars.

72. The first International Conference on Smoking and Health in the African Region was convened in Mbabane in April 1982 (55). Smoking control actions and country profiles for nine countries were reviewed, in June 1984, at an international seminar on smoking and health for English-speaking African countries held in Lusaka (56), and in November 1985 a training workshop was held in Lomé for the media people responsible for anti-smoking messages in the French-speaking countries.

73. In the Region of the Americas, a survey of smoking habits in several capital cities of Latin American countries was conducted in 1975. A series of seminars on smoking and health is planned with the aim of covering all the developing countries of the Region. The first was held in November 1985 in Buenos Aires for the countries of the "South Cone" region of Latin America. The main purpose of these seminars is to promote a clear commitment to smoking control at a political level, and to establish the basis for a multisectoral approach to the planning and implementation of a plan of action to control the spread of tobacco use in each participating country.

74. Two intercountry meetings on tobacco and health have been held in the South-East Asia Region - a workshop in Colombo in 1981 and a regional seminar in Kathmandu in November 1984 (29,57). Smoking surveys, and research and intervention to reduce the incidence of the forms of cancer associated with tobacco chewing and smoking, are under way in several Member States of the Region. An intercountry seminar aimed at mustering government commitment was held, in July 1985, in New Delhi. Several national seminars in, for example, Bangladesh, India, Indonesia, Mongolia, and Nepal were also held in 1983-1984.



As long ago as 1970 the Regional Committee drew the attention of Member States to the adverse effects of tobacco smoking and to the need for educating the public on the subject; and in September 1985 it reiterated its concern about the mounting problem.

75. The European Region has established a well-defined regional programme on smoking and health with staff and consultants specifically involved in its implementation, the objective being to attain a 50% reduction in tobacco consumption and to establish a rate for the Region of 80% or more non-smokers by the year 2000. Significant progress has been made in some countries, particularly those in Scandinavia, some of which are aiming to eradicate the habit entirely by the year 2000. A southern European group on smoking and health, established following a symposium in Barcelona in 1984, has started a survey of smoking habits among health professionals in France, Greece, Italy, Portugal and Spain. A workshop on women and smoking was held in Lisbon in November 1985; and in 1986, in Yugoslavia, a European conference on government action to combat smoking is planned. An international poster competition to promote the positive image of non-smoking has also been held and the winners were announced at the World Conference on Health Education (Dublin, September 1985). The seminars and similar meetings organized or co-sponsored by the Regional Office are too numerous to list here.

76. A seminar on smoking and health was held for countries of the Eastern Mediterranean Region in Khartoum in 1984. Other seminars have been held, for instance in Egypt, Kuwait and Pakistan, in collaboration with the International Union against Cancer.

77. Several countries in the Western Pacific Region are currently developing tobacco and health activities. Representatives from countries in this area participated in the above-mentioned workshop in Sri Lanka. Lectures on smoking and health were also given at the WHO Regional Training Course on Epidemiology and Community-based Control of Cardiovascular Diseases, held in Beijing in 1982 and in Kuala Lumpur in 1984. Already in 1971 and 1972 the Regional Committee adopted recommendations for the control of the health consequences of smoking. The Sixth World Conference on Smoking and Health will be held in Japan in 1987 and there are plans to organize the first Western Pacific regional seminar on smoking and health on that occasion.

#### Research on trends in smoking and smoking-related diseases

78. In order to facilitate the collection of comparable data on the prevalence of smoking, WHO has proposed guidelines, including standard survey questionnaires and procedures, for the assistance of Member States. These questionnaires and procedures have been used in Nepal and Zambia, among other countries, with financial support from the Organization, to collect information on the smoking habits of their populations. Research on the smoking habits of health professionals is under way, using these guidelines, in France, Italy, Portugal, Spain and Sweden. In addition, WHO has been collecting published and "fugitive" data on smoking trends in developing countries and in youth, and has itself produced several reports consolidating this information. The Regional Office for Europe is carrying out its fourth survey of smoking habits in the Region. Surveys of smoking habits and research on monitoring trends and on intervention to decrease the incidence of smoking-related forms of cancer and cardiovascular diseases, for example, the MONICA project,<sup>1</sup> are under way in several Member States with WHO support. Some such research, e.g. that on the prevalence of smoking among medical students, is being carried out in collaboration with the International Union against Tuberculosis.

79. Although much is known on the harmful health effects of smoking, in some countries there are situations where research on smoking-related diseases may still be warranted. For instance it may be politically and socially very useful in some developing countries to demonstrate the reality of smoking-related health hazards in situ rather than to rely on data obtained in remote industrialized countries. Developing countries, moreover, sometimes have typical disease situations, in which the use of tobacco is involved; for example, in Egypt bladder cancer occurs in association with smoking and schistosomal infection, and in the Indian subcontinent oral cancer is associated with the chewing of tobacco mixtures. Such research, although marginally useful, should not be interpreted as a prerequisite for action, as that would cause delay and thus play into the hands of the tobacco industry.

<sup>1</sup> Multinational monitoring of trends and determinants in cardiovascular diseases.



Research on levels of toxic substances in cigarettes

80. WHO is carrying out a research project to ascertain whether the tar, nicotine and carbon monoxide yields of the cigarettes imported into or manufactured in developing countries are high and to assist these countries in monitoring and lowering the limits for such yields. Cigarettes are purchased in developing countries and their yields are ascertained in a WHO collaborating laboratory in Canada. The Organization is assisting some Member States in the Eastern Mediterranean Region in setting up laboratories for that purpose and has provided technical advice, training capability and laboratory equipment. The issue of pesticide content of tobacco leaves is mentioned in paragraph 54.

Socioeconomic research

81. In their reports expert committees have repeatedly recommended, and the Health Assembly has on many occasions in its resolutions requested, the Director-General to assist Member States in carrying out research on the economics of tobacco in relation to the health and social costs of smoking-related diseases, and to study the feasibility of diversifying production to eliminate tobacco.

82. According to the World Bank, the identification of alternative crops and diversification away from tobacco are not only desirable for health reasons but also economically feasible. A Bank report states: "The Bank can increase investments in other products commensurate with a withdrawal from tobacco production. Tobacco projects and those with major tobacco components merit phasing out."

83. In order to pursue this research the Organization has been collaborating at the technical level with FAO and other institutions, for example in Canada, taking part in the study of the significance of tobacco in agriculture and in health economics. WHO is now also planning to collaborate in a research project with the United States National Cancer Institute to ascertain the burden in terms of lung cancer, and other health and social costs imposed by the use of tobacco in selected developing countries, and thus provide an econometric model for use in other developing countries.

84. Regular and substantial price increases of tobacco products have been shown in the United Kingdom and other countries to be effective in reducing consumption. Cigarette consumption in the Federal Republic of Germany declined by 17% in 1982 following a price increase of 25%. A sudden increase in cigarette prices brought about similar results in Malaysia. There may be a case for exploring further the usefulness of price increases in contributing to the decrease in cigarette consumption while at the same time maintaining the taxation revenue to governments. The possibility of excluding tobacco from the national price indices should also be explored.

Research on behavioural changes and on smoking cessation

85. The extent of the problem regarding tobacco and the essential elements of tobacco control programmes have been determined. The need now is for the implementation of national programmes. In planning measures for the reduction of smoking, it is necessary to look at the "why" of smoking at a number of different levels, so as to be able to design strategies that maximize the gains at each level and ensure synergy of action. For the smoker the habit has attractions at the pharmacological, the psychological and the sociocultural levels, at each of which there is potential for behavioural change. The most important of these levels is the pharmacological one, as described in paragraphs 30 to 32.

86. There are also many psychological reasons why smokers adopt and maintain the habit. These include modelling, and may stem from an individual's personality structure and current patterns of work and leisure. There are, therefore, important similarities between smoking and other forms of strong habitual behaviour such as, for example, regular indulgence in alcoholic drinks.

87. The use of drugs for social reasons has been characteristic of most societies throughout history, and so the importance of sociocultural factors must be recognized. Research is needed for an understanding of the forces that maintain cigarette smoking as a culturally accepted habit. They include tobacco marketing practices, popular culture and apparent economic incentives for governments. These forces are increasingly at work in many developing countries as well. It should not therefore come as a surprise that the cessation of the habit is not likely to be easily achieved. Action to this end at any one of the



levels enumerated above is unlikely to be successful on its own; what is needed is an integrated approach, at all levels. Research on behavioural aspects of drug taking in general could benefit from a similarly integrated approach.

88. In retrospect the success achieved in a few countries where the prevalence of smoking has declined in the past 20 years, for example Finland, Norway, Sweden, the United Kingdom of Great Britain and Northern Ireland and the United States of America, seems clearly to have been primarily due to increasing awareness, brought about and supported by education and legislation. Awareness is a necessary but not sufficient condition for a decline in smoking, since there are many countries where the dangers have been widely publicized yet there has been no decline in prevalence. The first step would therefore be to inform the public and the decision-makers of the immediate and long-term health consequences. A significant reduction in smoking is likely to occur without any therapy once people understand that smoking is dangerous and are informed about possible methods of stopping, but research is needed on how to transmit information in a way that is accurate and culturally valid for the population in question. The majority of smokers who "quit" do so on their own - there are calculated to be about 9 million ex-smokers in the United Kingdom and 33 million in the United States.

89. In regard to the efficacy of particular methods of therapy, there is a large literature. These methods have typically involved information on the health risks, guidance on methods of stopping, group interaction therapy and sometimes specific training in particular methods of changing behaviour, including the use of pharmacological aids. In general all these methods are labour intensive and many are reported to have a relatively high rate of successful outcome, but they also have high relapse rates. They may be of particular value for special high-risk groups (such as those who have suffered a heart attack) where intensive help in smoking cessation would be cost-effective in preventing the need arising for future treatment. Programmes may also be useful as political exercises to dramatize the problem of smoking and educate health professionals both in the need to combat smoking and in methods by which it might be done.

90. Less attention has been paid to the effectiveness of mass methods of cessation, using for example written material, radio, television or postal advice. The few controlled evaluations which have been carried out suggest that such methods have fairly low success rates in terms of abstinence for one year (from 3% to 5%) but that the cost-effectiveness is considerably higher than that of the methods for individuals or small groups described above. Likewise, even a small success in cessation rates achieved through simple counselling by general practitioners and other health personnel would result in large numbers of "quitters" in the population (58). In behavioural interventions, relatively small positive outcomes are important, not only because they may involve large numbers of individuals, but also because they may mark the beginning of major behavioural trends. WHO is already involved in studies on the effectiveness of simple treatment interventions in the areas of alcohol and drug dependence; similar studies should be undertaken with respect to tobacco, which would benefit from a comparison of programmes designed to have an impact upon different types of substance abuse.

91. Action on smoking is more likely to have an impact if it is brought to bear not only at the health level but also at cultural and political levels. It is likely that the less smoking is allowed in public places and centres of work and leisure, the more it will be seen as unacceptable behaviour and the more social support there will be for non-smoking.

## VII. WHO ACTION TO DECREASE THE MAGNITUDE OF TOBACCO-RELATED HEALTH PROBLEMS

92. Basically three lines of approach are followed by WHO, as outlined in the global medium-term programme: collaboration with Member States, collection and dissemination of information, and collaboration with international agencies.

### Technical cooperation with Member States

93. Technical cooperation in various forms has already been described in paragraphs 71 to 83. Assistance to research on smoking and health issues, including smoking prevalence, surveys and smoke analyses, and collection and dissemination of information are examples of collaboration. Technical cooperation among developing countries (TCDC) was advocated as long ago as 1982 at the first WHO International Conference on Smoking and Health in Africa that



was held in April of that year in Mbabane (55), while the need to use the primary health care approach in anti-smoking education was advocated at a workshop in Colombo in 1981 (57).

94. Other forms of collaboration consist in the implementation of guidelines and strategies proposed by WHO to assist Member States in their smoking control efforts. Almost all governments find themselves in the dilemma of how to protect, at one and the same time and despite the pressures, both the health of their people and the income that derives from tobacco. It is all too common to find governments launching educational campaigns against smoking while, at the same time, allowing tobacco publicity, providing tobacco subsidies and, in some cases, owning a tobacco industry as a state monopoly. The ambivalence and hesitation of governments vis-à-vis the tobacco problem must change. Collaboration with the Council of Arab Ministers of Health is a good example of how joint action, including information and educational anti-smoking campaigns, adoption of uniform anti-smoking legislation, and involvement of religious institutions in promoting non-smoking behaviour, can be coordinated.

95. The goal of such collaboration, as described in the medium-term programme, is to strengthen or build up - where there are none - national smoking control programmes with emphasis on: collecting information on smoking trends; promoting smoking control legislation; promoting education and information activities; training primary health care workers in smoking and health issues; promoting the exemplary role of schoolteachers as non-smokers; introducing smoking and health issues into the curricula of health professionals; and organizing seminars and conferences. Programmes of education against the smoking and chewing of tobacco are needed for primary prevention of cancers due to known causes, as well as for the primordial prevention of cardiovascular diseases, and are also given due emphasis in the WHO programmes on cancer and on cardiovascular diseases. Examples of WHO-supported country-specific action in cancer control are the national cancer control programmes that have begun and the legislation on tobacco use that is being developed in Chile, India and Sri Lanka. Intensive anti-smoking programmes, consisting of education and legislation, should be the core of current strategies for the control of tobacco-related cancer. An Expert Committee on Community Prevention and Control of Cardiovascular Diseases, in December 1984 (5), outlined national action plans including community organization for health education, education and involvement of youth, use of community and national media and involvement of the medical profession. The Committee concluded that prevention is the most powerful way to reduce the burden of cardiovascular diseases in the community and to control its escalating medical costs and recommended that governments, national medical associations and other influential organizations be urged to declare a commitment to the goal of a smoke-free society and to plan for the achievement of this goal.

#### Dissemination of information

96. This type of activity began in 1974 with the convening of the first Expert Committee on Smoking and its Effects on Health and, with the establishment of what for a time became known as the WHO Clearinghouse of Smoking and Health Information, it was intensified. Information is collected mainly through:

- (a) WHO meetings of experts, including expert committees, seminars and consultations; and
- (b) ad hoc literature search by consultants, including published as well as "fugitive" literature; government reports; private communications; literature surveys provided by the Office on Smoking and Health, United States of America; reports by research institutes; reports by nongovernmental organizations and organizations and bodies of the United Nations system; reports on WHO funded research activities in countries, etc.

97. The information is collated and included in WHO reports of various types as appropriate. These are sometimes translated, and widely distributed through: official WHO channels for distribution and sales, as well as other distribution mechanisms including, for instance, the mailing lists of the WHO programmes on smoking and health, cardiovascular diseases and public information and education for health; the Expert Advisory Panel on Smoking and Health; and directly in response to the very numerous requests by institutions, newspapers, libraries, individuals, government departments, and so on. The reports of the Expert Committees have been published and widely distributed in many thousands of copies in several languages. These reports not only disseminate information on various smoking and health issues but also provide public health authorities with guidelines on smoking control strategies.



98. The theme of World Health Day 1980 was "Smoking or health - The choice is yours". This information campaign appears to have reached every country in the world. Actively supported by national information campaigns and by nongovernmental and civic groups, for the first time awareness of the smoking epidemic spread world-wide. Many governments took this opportunity to launch programmes to limit the spread of the smoking epidemic, particularly in developing countries. Nongovernmental organizations also carried out mass campaigns to raise public awareness and the mass media played a major role in bringing the message to the public.

99. The Organization has prepared documents on the geographical prevalence of cigarette smoking in younger age groups, smoking prevalence in developing countries, economic benefits and losses associated with cigarette smoking, exposure to environmental tobacco smoke in aircraft, and guidelines for the conduct of surveys of tobacco smoking among health professionals and the general population. It also produces a quarterly newsletter "Tobacco Alert" (5000 copies in English, 4000 in French; a Spanish edition is in preparation). Following the publication in 1976 of a survey on smoking control legislation, a second and more comprehensive survey entitled Legislative Action to Control the World Smoking Epidemic was published in 1982 and has been widely distributed. This is currently being updated to cover recent developments (59,60).

100. WHO activities on smoking and health have been the subject of numerous radio, newspaper, and television interviews which have facilitated the massive spread of information to large strata of populations all over the world and underlined WHO's concern. The Organization also disseminates information indirectly but, none the less, effectively through such channels as nongovernmental organizations and consumers' associations. Through joint seminars, joint research, published articles and other joint activities with the International Union against Cancer (UICC), the International Union for Health Education (IUHE), the International Society and Federation of Cardiology (ISFC) and the International Union against Tuberculosis (IUAT), information is spread to the national constituencies of these nongovernmental organizations. Recently, the International Council on Alcohol and Addictions has introduced tobacco issues in its programme and has held a special workshop on smoking and health on the occasion of the International Congress on Alcohol and Addictions, held in Calgary (Canada), in August 1985. The International Organization of Consumers Unions, a powerful pressure group, has also decided to concentrate on tobacco as a market product which is harmful to consumers. The national and intercountry seminars mentioned above are invaluable in disseminating information and exchanging ideas.

101. As part of its action in spreading information and arousing worldwide awareness WHO has co-sponsored the Third, Fourth and Fifth World Conferences on Smoking and Health, the first International Conference on Smoking and Youth, and numerous international conferences on health education which had smoking issues in their programmes. The Sixth World Conference on Smoking and Health, scheduled to be held in Japan in 1987, will also have WHO input.

102. Thanks to WHO and UICC seminars on smoking and health in Islamic countries, the issue of smoking as a habit that is harmful and therefore unacceptable on religious grounds has come to the fore. Religious authorities attending these seminars have suggested that smoking be considered unlawful (haram) and contrary to the spirit of Islamic ethics. The spread of that moral concept would give millions of actual or potential smokers an incentive and support to stop smoking or not to take up the habit.

#### Joint action with other international agencies

103. As the political, economic, and psychological pressure by the tobacco industry is global in nature, WHO action must also be global in mustering collaboration, support, and political will. The United Nations system can be a powerful tool in this context, and has already shown its concern for WHO's efforts. Indeed, several organizations of the United Nations system have decided no longer to allow smoking at their meetings and in conference rooms. Action by WHO at high executive level is necessary to mobilize consensus and support by the United Nations family.

104. A United Nations interorganization consultation in 1981 (61) attended by nine other organizations and bodies expressed support for WHO's action. Over the past few years, the United Nations and some of its specialized agencies have banned smoking at their official meetings pursuant to a request by the Director-General of WHO. FAO and the World Bank have already expressed their readiness to study crop diversification to replace tobacco, if so requested by Member States (see below).



105. FAO has reduced the number of tobacco production and marketing projects that it supports: whereas in the mid-1970s it was involved with eight such projects, in 1980 it was supporting only two (3b), and no moves are being made to start new ones. Although FAO has, on occasion, stressed the advantages of tobacco as a remunerative cash crop (18), it has nevertheless announced that before embarking on country projects involving tobacco it will review the importance of the crop to the country and, where tobacco is not yet an established crop, it will draw attention to WHO resolutions on smoking and health, and offer help in exploring whether alternative crops are feasible (61). Subject to availability of funds FAO is ready to assist any government requesting investigation of the possibility of crop diversification away from tobacco.

106. The World Bank has also declared its readiness in principle to emphasize the desirability of production of alternative crops in its financing of agricultural and rural development in developing countries, if this is seen to be in line with the economic requirements of the country. More pressure coming from the international community would strengthen the position of the World Bank in considering investment proposals in crop diversification to decrease tobacco production (61). The Bank does not seek opportunities to finance tobacco, and tobacco financing is of very minor importance in Bank programmes.

107. UNCTAD has produced a seminal report on the marketing and distribution of tobacco (44) describing the "oligopolistic power" of the transnational tobacco companies which, it points out, fully control tobacco marketing while relegating the developing countries to the margin of the decision-making process. Further UNCTAD involvement in tobacco issues would be needed.

108. ILO is always prepared to support activities aimed at reducing occupational risks, and the fact that smoking is an aggravating factor in the development of certain occupational diseases should be taken into account. ILO might envisage further increasing the awareness of governments, employers, and workers of the adverse effects of smoking, thus supporting the fight against smoking and promoting the safety and health of the working population (3b). Workers represent in many countries a "captive audience" or target group of great educational potential. Health-oriented messages, including discouragement of smoking, can be transmitted to the workers and, through them, to their families by factory doctors, nurses, and other suitable media. ILO has expressed readiness to respond to WHO proposals and this line of collaborative approach should be used. The unions in some industrialized countries often support smoke-free worksites because to do so cuts down on health costs, prevents accidents and makes for other savings, that can be passed on as benefits to the workers. Workers' unions would therefore be a very useful ally.

109. Other valuable target groups are mothers and children. The harmful health effects of smoking on these susceptible groups are well known and have been outlined in the situation analysis above. UNICEF and UNESCO should consider their responsibility to help in protecting the health of the millions of those who may yet become smokers by launching educational activities aimed at young mothers and children. UNESCO has conducted activities in this area since 1971, and its policy is "to contribute to the solution of the problems related to the use of licit and illicit drugs through preventive education forming an integrated part of the educational process".

110. In view of the recent and convincing evidence of environmental deterioration brought about *inter alia* by tobacco cultivation and processing, UNEP would also have an important role to play. This agency expressed concern that excessive tobacco cultivation contributes to the destruction of forests and resulting problems. It collaborates with IARC in a project on "involuntary" or "passive" smoking as a source of environmental carcinogen intake and has expressed its readiness to collaborate further with WHO in the control and discouragement of the use of tobacco. UNIDO has so far been minimally involved with tobacco but is conscious of the health problems and is considering the possibility of touching upon tobacco in its worldwide study on pharmaceuticals to be issued in 1986. As to UNDP, this body is at present financing only two tobacco projects, one of which will be completed shortly. This can be seen as a marked down-trend from the 1970s when a number of governments were receiving UNDP assistance in this area. In the past, UNDP has also provided assistance in diversification and production of alternative crops; it continues to provide assistance to governments in these areas on request. In summary, the position of these organizations of the United Nations system is that they would be ready to cooperate if there were consensus within the United Nations, but the approach should be made at a high executive level (61).



111. Several international nongovernmental organizations have a strong interest in smoking and health issues and collaboration with them is crucial. Their action can be considered as mostly in the nature of advocacy, through seminars and sensitization of the health profession. The International Union Against Cancer passed a resolution on smoking and health in 1971 and established a programme on smoking and health in 1975 (62). It has published works of reference (10a,b) and held many seminars in this field in many developing and developed countries. The International Society and Federation of Cardiology issued a statement on its own programme on smoking and health in 1980 (63) and its journal, Heartbeat, regularly carries articles and illustrations showing anti-smoking publicity material. The International Union for Health Education actively collaborates with WHO although it does not have a programme specifically devoted to smoking and health issues. The International Union against Tuberculosis (IUAT) has recently established a scientific committee on smoking and health. This committee brings out new information material on smoking and health for distribution through IUAT members and affiliated bodies, and is sponsoring surveys of smoking habits among medical students in selected countries. The committee has also recommended that IUAT hold a session on smoking and health at all its international and regional conferences, which in future will be non-smoking.

112. The International Olympic Committee (IOC) and WHO agreed, on the occasion of the Thirty-eighth World Health Assembly (May 1985), to collaborate in a health-oriented project called "Winners for health", the aim of which is to emphasize the role of sports and physical fitness in healthier life-styles, as well as avoidance of tobacco and other drugs, moderation in use of alcohol and in food intake and increased personal responsibility in health matters. The International Council on Alcohol and Addictions and the International Organization of Consumers Unions have recently taken up tobacco in their programmes. On a more technical ground, WHO has consulted with the International Air Transport Agency (IATA) to ensure that non-smokers receive effective protection against passive smoking in aircraft, and that the current airline measures to separate smoking and non-smoking zones be maintained and improved (64).

#### Future action and new strategies

##### Programmes at national level

113. Effective national programmes are the key to an effective global effort to control the use of tobacco and to prevent the tobacco-caused diseases. The basic components of a tobacco control programme are education and information, legislation and operational research. However, focusing on any single component, for instance on public education alone, at either the national or international level is unlikely to bring success. The optimal strategy is a comprehensive approach, in which all major components are integrated and coordinated and the deployment of the resources allocated to each component is commensurate with its expected effect. On request WHO takes an active role in promoting and establishing national programmes. The Organization also undertakes international activities which will facilitate the development of national programmes and strengthen their action.

114. In the Western Pacific Region, 11 out of 23 Member States have various types of smoking control activities, mostly in the form of legislation and school education. In the Eastern Mediterranean Region almost all Member States have recognized the smoking and health issue, which is being dealt with mainly through legislation. The same trend applies to countries of the South-East Asia Region, e.g. Bangladesh, India, Malaysia, Nepal, Sri Lanka and Thailand, whereas most African Region countries apparently have not tackled the issue yet. Country activities being carried out in Member States of the European Region and in the Americas are too numerous to list here.

115. The strategies for comprehensive smoking control programmes are described in detail in Expert Committee reports in the WHO Technical Report Series (3a,b,c) and so will not be repeated here, where it will suffice to recall that such strategies generally consist of:

##### (a) Education and information

- informing government officials, leaders and key social groups about the nature, seriousness and extent of the tobacco problem and what should be done;
- encouraging health personnel and primary health care workers as well as educators and public figures to take leadership exemplar roles by not smoking and by promoting non-smoking attitudes in the population;



- using mass and other communication media to inform the public about the health risks; tobacco advertisement, both direct and indirect, particularly in mass media should not be permitted;
- encouraging the public, especially schoolchildren, to increase positive health behaviour and never to adopt any tobacco habit;
- encouraging people who use tobacco to stop or at least drastically decrease its use, particularly high-risk individuals, workers in high-risk industries, and pregnant women;
- encouraging trade unions to support smoking prevention campaigns especially for workers in whom smoking would multiply the risks of occupational exposure.

(b) Legislation

- banning tobacco advertising;
- banning sponsorship of cultural and sports events by the tobacco industry;
- placing of health warnings on tobacco product packages and in advertisements (assuming that there is no current possibility of a total ban on sales promotion);
- limiting the amount of harmful substances in tobacco products and specifying the amount on product packages;
- protecting the rights of non-smokers;
- protecting minors;
- increasing taxation on tobacco products and other economic measures.

(c) Operational research

Some research may still be needed, but it should not delay national action; otherwise it would simply buy time for adverse commercial interests. Research may be useful on the following aspects of the problem:

- organizational and support structures, e.g., whether to establish a national smoking and health agency, or other body, specifically responsible for planning and coordinating the national programmes;
- why people smoke and how to deliver anti-smoking messages successfully;
- socially acceptable methods for smoking cessation applicable on a large scale;
- economically viable alternatives to tobacco production and trade;
- ways and means of involving government departments other than health, in solving the complex problem of tobacco use;
- suitable methods for the evaluation of smoking control programmes;
- the tobacco industry's promotional strategies and the limitation of their impact. It is very difficult indeed to transmit any kind of health- or socially-oriented anti-smoking message in the face of promotional drives supported in 1981 by US\$ 1600 million for the United States of America alone. Worldwide, tobacco promotion is estimated to be supported by about US\$ 2000 million per year (33,44) focused on massive advertising and sponsorship of sports and cultural events;
- assistance to governments in rationalizing their attitudes towards tobacco production and use, so as to emphasize health rather than short-term monetary gain.

116. The implementation of these strategies depends on the sociocultural and other circumstances within the country. The Regional Seminar on Smoking and Health that was held in Kathmandu in November 1984 addressed this very issue, and produced a blueprint for action



for governments to follow (29). Some Member States of the Eastern Mediterranean Region have decided to tackle smoking and health issues (e.g., cigarette analyses, information and education for health, and smoking control legislation) on an intercountry, subregional basis. This is strategically a sound approach which is being attempted in the Region of the Americas as well.

#### Programmes at international level

##### (a) Education and information

117. A major component of WHO's smoking and health programme will be a global information campaign, supporting, and coordinated with, national efforts. This campaign on the theme "Tobacco or health" will utilize WHO media, such as the Bulletin of the World Health Organization, WHO Chronicle, World Health Forum, and World Health magazine, supplemented by fact sheets and special media kits directed to the general public, women and youth, and selected nongovernmental organization channels. A concerted effort, involving the provision of information to medical and educational journals and to the media used by specialized bodies, is also planned. Training modules at the introductory and refresher levels will be prepared for both health staff and teacher training centres, to facilitate the development of materials adapted to local conditions. In connection with the above activities, an international "no smoking" day - similar to the national days already organized in many countries - could be held as recommended at the Fifth World Conference on Smoking and Health. As the year 2000 approaches, it is clear that there is not enough manpower available to run tobacco control programmes at the national and state levels. Organized training is needed in this area, and international training seminars should be arranged at which country-level programmes and experiences would be studied. WHO also has a role to play in developing and disseminating simple guidelines on the role of primary health care workers in discussing tobacco use and in counselling individuals and small groups on smoking cessation.

118. Tobacco advertising at sports events is emerging as one of the major mechanisms to promote smoking; this approach is particularly effective for vulnerable Third World populations, especially the young. Elimination of tobacco advertising at sports events should be a specific focus for emphasis in WHO's media approach.

##### (b) Legislation

119. In addition to supporting the adoption of national legislation on smoking and health issues, WHO should recommend that exported tobacco products carry the same health warnings as the products for domestic consumption existing in the exporting countries and that the amount of harmful substances in exported tobacco products does not exceed the level permissible in the producing countries.

##### (c) Organization and support

120. WHO will take a leadership role in the promotion of national tobacco control programmes on an intercountry basis. Collaboration on the tobacco programme between WHO and relevant organizations and bodies of the United Nations system will be strengthened with a view to the development of the requisite common policy aimed at decreasing the use of tobacco and bringing about a shrinkage of the tobacco market. In this connection economic interests of developing countries will have to be considered and cooperation provided to achieve the necessary diversification and the development of substitute crops. The development of integrated policies at national level on the health, agricultural and economic issues related to tobacco is a prerequisite. The crucial value of collaboration with nongovernmental organizations has been mentioned in paragraph 111. It should be continued and expanded, as they play an important role in many countries in reducing smoking.

121. WHO's target is that most Member States should have established national tobacco and health programmes, with both education and comprehensive legislative components, and should have attained a measurable decrease in the prevalence of tobacco usage, by the year 2000. However, in addition to the classic strategies described above, the need for new strategies is becoming evident. These would include advocacy of all-round healthy life-styles and positive attitudes to health, promotion of a general social environment in which smoking is clearly seen as a nuisance and non-smoking as the norm, and the demystification of smoking.



Knowledge and skills on how to apply these new strategies are still inadequately mastered. WHO is promoting their acquisition *inter alia* by organizing study groups and training workshops, such as the one held in Lomé in November 1985 (see paragraph 72), and by supporting research.

122. The disease-dominated approach has been proved to be of limited value. Positive attitudes should instead capitalize on the appeal and the value system of suitable trend setters, e.g., young actors, singers and athletes. WHO's new information and education project "Winners for health" is a step in the right direction. In several countries emphasis is being placed on both competitive and non-competitive sports activities in order to channel youthful energy away from the use of illicit and abuse of licit drugs. Smoking decreases sports performance, and the intense revival of physical activity and physical fitness that is now taking place as a mass phenomenon worldwide should be turned to good use in order to prevent the uptake of the smoking habit. This indeed is the purpose of the collaborative health-promotion agreement which has recently been reached between the International Olympic Committee and WHO, as mentioned above (paragraph 112). The above-mentioned project offers a ready channel for getting the health message about smoking to the public throughout the world at grass-roots level. This can be done in conjunction with local and national Olympic committees and other nongovernmental organizations involved in youth and sporting activities.

#### VIII. EVALUATION OF THE EFFECTIVENESS OF SMOKING CONTROL ACTION

123. In so complex an issue as smoking and health success, in terms of decreases in smoking rates, when they occur, cannot be attributed to any single action. This is true both at country level regarding national smoking control action, and at global level regarding the impact of WHO action. The tobacco-smoking problem is compounded of actions relating to individual and mass behaviour and value systems, and involves pharmacology, education, public information, and legislation, as well as agriculture and its political and socioeconomic implications. Changes in any of these factors can entail changes in population smoking rates and, consequently, in the rates of smoking-related diseases.

124. On account of the multiplicity of these factors, and of their interrelationships, it is clearly impossible to disentangle the interreactions and thus identify which type of control action has brought about a decrease in smoking rates. Nevertheless, results are available and they are encouraging. Some of the effects of national smoking control activities and of WHO action are summarized below.

#### Effectiveness of national action

##### Legislation

125. Legislation to limit the spread of tobacco smoking is becoming more stringent and more widely enacted and enforced. Following the initial example of Sweden, where cigarette packets and tobacco products have a system of 16 health warnings delivering different messages in succession, the United States of America, Iceland and Norway have adopted the system of multiple warnings, while Australia and Canada plan to do so in the near future. According to available information, the number of countries adopting smoking control legislation has increased from less than 30 in 1967 (65) to 57 in 1982 (59), and to 64 in 1985 (60). Many countries have made their past legislation more stringent and/or more comprehensive. In the United States of America, available information indicates that four states and 31 cities or counties have enacted statutes or other legal instruments to restrict smoking at the workplace (66).

##### Social attitudes

126. These are becoming more critical of smoking. The non-smoking areas in public places and transport are constantly increasing. In the United States of America, more and more employers are enforcing non-smoking at the workplace as a matter of policy, or refusing to employ smokers (67,68).

##### Health education and public information

127. Activities of this kind have multiplied all over the world. A survey by the International Society and Federation of Cardiology in 1980 showed that smoking control activities were in progress in 30 countries. Now nearly all countries have such activities.



128. The most important short-term measure of the impact of a tobacco and health programme is the change in the prevalence of tobacco habits, especially in the young age groups. The strongest evidence of effective programmes comes from the Scandinavian countries where comprehensive anti-smoking programmes have been implemented, but even in countries with more limited legislation - Canada, the United Kingdom and the United States of America - there has been a marked decline in smoking.

#### Improvement or reversal of smoking trends

129. In Sweden, where strong comprehensive smoking control action was started in the early 1960s, followed by the introduction of health warnings on tobacco products in 1975, the percentage of daily smokers declined steadily between 1970, when 50% of adult males were daily smokers, and 1984, when only 29% were daily smokers. Among 13-year-old boys, the percentage of smokers declined from 14% in 1971 to 5% in 1980; for 13-year-old girls the decline was from 16% in 1971 to 6% in 1980. In the United Kingdom, 65% of adult males were smokers in 1948, but only 38% in 1982. Among women, the figures are 41% and 33%, respectively.

130. When the Tobacco Act entered into force in Norway in 1975, 52% of adult males were daily smokers; but by 1982 the proportion had dropped to 40%. In 1974, 40% of boys and 41% of girls smoked daily, but in 1983, the figures were 21% for boys and 26% for girls.

131. In the United States of America, the proportion of smokers declined from 42% to 33% between 1965 and 1980. The percentage of 17- to 18-year-old boys who smoked declined from 30% in 1968 to 20% in 1979; among 17- to 18-year-old girls an initial increase from 18% in 1968 to 25% in 1977-1978 seems to have levelled off by 1979. Doctors have drastically reduced their smoking prevalence from about 60% in the 1950s to about 10% at present. Altogether, some 33 million Americans - about 30% of all smokers - "quit" between 1970 and 1984.

132. Ten years after the beginning of the well-known community programme for control of cardiovascular diseases in North Karelia, Finland, a 28% decrease was found in smoking prevalence among males and 14% among females (69).

#### Effects on tobacco consumption

133. Tobacco consumption has been decreasing in several developed countries. In Canada, for instance, cigarette consumption decreased from 66 300 million in 1982 to 61 000 million in 1985. This trend is expected to continue for several years, thus giving farmers enough time to find replacement crops (70). From 1974 to 1982, total tobacco consumption per capita declined at the rate of 1.3% (38). In the United States of America consumption of tobacco products has stabilized because of higher prices and of health concern. Consumption per adult (18 years and over) dropped to 3494 cigarettes in 1983, a 10% reduction on the 1963 figure, and the lowest since 1949 (38).

134. In Australia, according to Commonwealth statistics, production quotas for tobacco growing are being reduced to reflect the downturn in tobacco sales, while domestic production of cigarettes has decreased in the past three years, as never before, by about 9% per year (71). In Finland, total per capita consumption between 1974 and 1982 declined by 2.3% per year; in 1975, a drastic increase in the price of tobacco products brought about a 15% fall in consumption (38). In the United Republic of Tanzania, tobacco production declined by 35% between 1978 and 1983 (45).

135. Unfortunately, the downward trends in consumption in many developed countries are being countered by increased tobacco-industry pressure, producing increased consumption in developing countries, where smoking control action is still lacking. Indeed, as mentioned in paragraph 59, consumption is decreasing by 1.1% per year in the industrialized world and increasing by 2.1% per year in the Third World (20).

#### Reduction in smoking-related diseases

136. In the long run, the effectiveness of national tobacco control programmes must be measured by the reduction of tobacco-associated diseases, such as lung cancer, cardiovascular disease, emphysema and bronchitis. However, since effective national programmes have been carried out for only a few years in a small number of countries, their direct impact in



younger age groups has only recently begun to show. Quick results cannot be expected. A few decades must elapse before overt symptoms of lung cancer or cardiovascular diseases appear in a confirmed smoker. Likewise, 10 to 20 years must elapse before the relative risk in ex-smokers drops to the level of that of lifelong non-smokers and a decrease in tobacco-related morbidity and mortality starts to show in populations as a result of a reduction in smoking.

137. In the United States of America, age-specific lung cancer mortality rates among middle-aged men have been decreasing in apparent relationship with the percentage of male smokers, from about 70% in 1955 to less than 40% in 1978. Conversely, increasing smoking rates among women have until recently been followed by increasing death rates from lung cancer (72). According to statistics from the American Heart Association, death rates from heart diseases among men have decreased significantly in recent years, coinciding with a 25% decrease in the prevalence of smoking.

138. A similar pattern of increasing life expectancy, decreasing heart disease and decreasing smoking rates has been reported from Canada in government statistics. Life expectancy there has increased to 71.9 years for men and 79.5 years for women, and that increase is attributed to the fact that more and more Canadians have stopped smoking.

139. The intervention study in North Karelia, Finland, mentioned in paragraph 132 (69), through intensive health education of the public and mass media coverage, induced the population to decrease its cardiovascular risk factors, mainly smoking and fat intake, with the result that hypertension and cardiovascular death rates decreased significantly over a 10-year period.

140. In the male population of the Stockholm urban area, the age-standardized incidence rate of lung cancer shows a downward trend after 1971 following a decrease in the prevalence of smoking among that population established in the early 1960s (73).

141. A study of British male doctors has shown that a reduction in smoking from 43% to 21% between 1954 and 1971 was followed by a reduction of 25% in deaths from lung cancer (3b).

#### Effectiveness of WHO action

142. It is obviously difficult to quantify effectiveness since the results of smoking control action are influenced by so many interacting factors. It is also difficult to ascertain whether, and to what extent, national actions have been influenced by WHO. Nevertheless, it is possible with a certain confidence to evaluate indirectly the impact of WHO's action, on the basis of the following observations:

(a) Since the publication of the reports of the WHO Expert Committee meetings on smoking and health, and since the launching of World Health Day on 7 April 1980 with the theme "Smoking or health - The choice is yours", activities in almost all Member States have increased significantly.

(b) Following World Health Day in 1980, information and educational approaches and special events, including national "no-smoking" days, postage stamp issues, national smoking and health seminars, etc., have followed one another at an increasingly rapid rate and in more and more countries.

(c) Tobacco Alert is widely read and quoted. Certain nongovernmental organizations have requested hundreds of copies for systematic redistribution to their member organizations.

(d) A number of organizations and bodies of the United Nations system have been sensitized to the issue of smoking and health. Consultations have been held with FAO on the economics of tobacco in relation to health. Following approaches by the Director-General of WHO to the executive heads of other United Nations organizations and bodies, many of them have followed the WHO policy of prohibiting smoking at official meetings. This is considered to be of great value as an example to Member States.

(e) Media coverage of smoking and health issues quoting WHO is continuous, intensive, and worldwide. Numerous requests are received from ministries of health for messages of encouragement from the Director-General of WHO on the occasion of smoking control events.



(f) Several nongovernmental organizations are actively collaborating with WHO in tackling the smoking and health issue worldwide.

(g) WHO expert committee reports and other technical publications on smoking and health are always at the forefront in all national and international conferences and seminars on this topic.

#### IX. PLANS FOR FUTURE WHO ACTION

143. These are detailed in the medium-term programme and in the report of a meeting of regional advisers (74) and can be summarized in the following three lines of action:

- (1) cooperation with Member States in strengthening - where present - or establishing - where still absent - national tobacco smoking and chewing control programmes within the primary health care system;
- (2) expansion of WHO's global advocacy role in smoking control; and
- (3) collaboration with appropriate organizations and bodies of the United Nations system and nongovernmental organizations in strengthening global smoking control action.

144. The above priorities would be met by WHO as follows:

(1) Through cooperation with Member States in:

- establishing an intersectoral approach to smoking control;
- establishing a national body, as well as a network of local resource persons, to deal with tobacco and health issues;
- identifying socioeconomic and political issues related to tobacco production and consumption;
- organizing and evaluating research on such quantifiable, measurable targets as trends in tobacco use and tobacco-related diseases, large-scale smoking cessation, and the effects of price policies;
- limiting the impact of tobacco promotion activities, and encouraging health-oriented behaviour;
- banning use of tobacco in all health-oriented institutions;
- involving health professionals in tobacco and health issues;
- identifying and developing strategies for population groups that are difficult to reach by the usual education/information approaches, e.g., youth not attending school, populations deprived of mass communication media, illiterates, and ethnic minorities;
- ensuring information transfer through seminars, workshops and other appropriate information and education measures.

(2) By convincing decision-makers, in its advocacy role, of the need for smoking control action at national, regional, and global levels, including:

- enactment of legislation banning, or at least severely restricting, advertising; requiring product labelling giving health warnings and levels of harmful emissions; restricting access to and use of tobacco products; and establishing pricing and taxation policies;
- offering agricultural and trade alternatives to tobacco production and marketing including economic incentives for crop diversification, market support for non-tobacco products, and other measures;
- involving the health professionals, educators, and social and political leaders.

(3) Through collaboration with the organizations and bodies of the United Nations system and nongovernmental organizations:

- WHO should take the lead in stimulating the other organizations and bodies into action for, e.g., the limitation of tobacco production, educational and mass information approaches, avoidance of smoking among workers in high-risk occupations, the protection of non-smokers from exposure to passive smoking, and the involvement of the health professions and the media. It should also seek collaboration with regional economic structures, for example the European Economic Community and similar organizations.

#### X. REVIEW BY THE PROGRAMME COMMITTEE OF THE EXECUTIVE BOARD

145. At its session in October 1985, the Programme Committee of the Executive Board provided guidance on the strategies, objectives, and activities of the WHO Programme on Smoking and Health, as described in this report, including items such as the advocacy role of WHO, information and educational activities, support to country action, and collaboration with other organizations of the United Nations system and nongovernmental organizations.<sup>1</sup>

146. The Programme Committee thought that efforts by national health authorities in combating the spread of tobacco smoking and the diseases caused by it would receive more emphasis and achieve greater credibility if supported by WHO. It was essential, the Committee considered, that WHO assume an active and visible role in smoking and health as part of its effort towards health for all by the year 2000. More active WHO involvement would thus be in accordance with the conclusions of the WHO Expert Committee (3c) which, already in 1982, had been "disappointed at the omission of smoking control activities from the WHO Seventh General Programme of Work (1984-1989)" and recommended that "WHO should, as a matter of urgency, match its concern at the extent and magnitude of the smoking problem with appropriate planning and greater commitment to smoking control; this should be reflected in WHO's short-, medium-, and long-term programmes of work". Similar concern has been expressed by members of the Executive Board and delegates to the Health Assembly in recent years.

147. The Committee further proposed that the Executive Board might wish to consider submitting to the Thirty-ninth World Health Assembly a draft resolution on a WHO programme on "tobacco or health" for possible inclusion in the Eighth General Programme of Work (1990-1995). It was indeed felt that this new designation would better reflect the increased scope of the programme to cover not only smoking but all the harmful health effects caused by tobacco use. The Director-General was requested to prepare a suitable draft resolution.<sup>2</sup>

#### Financial implications

148. The Programme Committee further requested the Director-General to provide the Board with information on the financial implications of the draft resolution. These are as follows.

#### Present situation

149. During the 1984-1985 biennium, activities have been carried out with financial support from regular budget funds amounting to about US\$ 150 000 to cover basic staff and operational expenses (in the amount of US\$ 33 000). In addition, funds from the Director-General's Development Programme in the amount of US\$ 134 000 and extrabudgetary funds amounting to US\$ 360 000 were also available.

150. For the 1986-1987 biennium, provisions are about US\$ 200 000 from regular budget funds, including staff and operational expenses (US\$ 33 600), plus funds from the Director-General's Development Programme in the amount of US\$ 200 000 and extrabudgetary funds in the amount of US\$ 380 000, the latter to be used for a study on health and social costs of tobacco consumption. Other extrabudgetary funds may be forthcoming.

<sup>1</sup> For the Programme Committee's report, see part 2 of this Annex.

<sup>2</sup> Adopted, after consideration by the Board, as resolution EB77.R5.



Future requirements

151. To ensure adequate programme continuity on a medium- to long-term basis and to carry out the additional activities implied in the draft resolution, some US\$ 200 000 from the regular budget is needed biennially to cover basic staff and operational requirements as in previous bienniums.

152. In addition, about US\$ 500 000 biennially from extrabudgetary sources would be needed, since the Director-General's Development Programme should not be used to fund any individual programme on a continuing basis. The extent of activity implementation will therefore depend on the availability of extrabudgetary funds.

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Appendix 1

## TABLES

1. ESTIMATED NUMBER OF DEATHS ATTRIBUTABLE TO CIGARETTE SMOKING:  
UNITED STATES OF AMERICA, 1980<sup>a</sup>

Anatomical site or nature of disease or injury (ICD number)	No. of deaths
Malignant neoplasms (140-209, 230-239) .....	147 000
Diseases of the circulatory system (390-459) .....	<u>240 000</u>
Ischaemic heart disease (410-414) .....	170 000
Other vascular diseases .....	70 000
Diseases of the respiratory system other than cancer (460-519) ...	<u>61 000</u>
Emphysema (492) .....	13 000
Chronic bronchitis and other respiratory diseases .....	48 000
Diseases of the digestive system (520-579) .....	<u>14 000</u>
Diseases of oesophagus, stomach and duodenum (530-537) .....	2 000
Cirrhosis and other diseases of digestive system .....	12 000
Certain conditions originating in the perinatal period (760-779)	
Infant mortality caused by maternal smoking, low birth-weight, and other congenital disabilities .....	4 000
External causes of injury (E800-E999) .....	<u>4 000</u>
Injuries caused by fire and flames (E890-E899) .....	2 500
Other accidental injuries .....	1 500
Miscellaneous and ill-defined diseases .....	15 000
<b>Total</b>	<b>485 000</b>

<sup>a</sup> See para. 6.

Source: Ravenholt, R. T. (12).

2. CONSUMPTION OF MANUFACTURED CIGARETTES IN 110 COUNTRIES AND TERRITORIES, 1982<sup>a</sup>  
(per capita)

Country or territory	Consumption (per capita)	Country or territory	Consumption (per capita)
Cyprus	3117	Jordan	867
Greece	2927	Algeria	861
Cuba	2857	Belize	850
Canada	2797	Chile	847
United States of America	2678	Nicaragua	846
Spain	2658	Albania	786
Japan	2636	Barbados	785
Hungary	2570	Tunisia	768
Poland	2517	Democratic People's Republic of Korea	713
Bulgaria	2472	Guyana	656
Australia	2340	Jamaica	650
Yugoslavia	2323	Dominican Republic	614
New Zealand	2305	Thailand	605
Switzerland	2171	Panama	599
Austria	2111	Indonesia	577
Belgium and Luxembourg	2055	Iraq	574
Singapore	1961	Honduras	563
Hong Kong	1957	Norway	556
Lebanon	1926	Morocco	537
Germany, Federal Republic of	1867	Congo	531
Italy	1854	Paraguay	521
United Kingdom of Great Britain and Northern Ireland	1818	El Salvador	508
Czechoslovakia	1812	Ecuador	508
German Democratic Republic	1796	Senegal	448
Ireland	1778	Viet Nam	424
Republic of Korea	1747	Côte d'Ivoire	422
Union of Soviet Socialist Republics	1715	Sierra Leone	419
Libyan Arab Jamahiriya	1688	Pakistan	396
Israel	1656	Angola	375
Netherlands	1652	Iran (Islamic Republic of)	364
Denmark	1636	Sri Lanka	341
France	1608	Guatemala	325
Romania	1593	Zimbabwe	319
Sweden	1543	Haiti	316
Taiwan (province of)	1531	Kenya	283
Portugal	1428	Zambia	223
Philippines	1371	Mozambique	221
Trinidad and Tobago	1318	Ghana	218
Turkey	1305	Peru	216
Uruguay	1241	Lao People's Democratic Republic	209
Malaysia	1222	Bolivia	206
Mauritius	1215	Malawi	197
Finland	1148	United Republic of Tanzania	181
Argentina	1136	Cameroon	175
Venezuela	1089	Bangladesh	170
Brazil	1051	Uganda	146
Syrian Arab Republic	1049	India	141
Democratic Yemen	1038	Zaire	129
South Africa	1002	Cape Verde	117
Fiji	986	Nigeria	98
Suriname	975	Nepal	83
China	900	Burma	71
Colombia	873	Ethiopia	48
Egypt	872	Sudan	37
Costa Rica	868	Equatorial Guinea	17

<sup>a</sup> See para 20.

Source: Journal of the American Medical Association, 252(1): 24 (1984).



3. PREVALENCE OF SMOKING AMONG ADULTS IN VARIOUS COUNTRIES AND TERRITORIES  
(LATE 1970s - EARLY 1980s)<sup>a</sup>

Country or territory	Male %	Female %	Country or territory	Male %	Female %
Morocco	90	-	Singapore	49	8
Nepal	87	72	Pakistan	49	5
Papua New Guinea	85	80	Sri Lanka	48	2
Philippines	78	-	Guyana	48	4
Indonesia	75	10	Austria	46	13
Bangladesh	70	20	Hungary	45	23
China	70	8	Mexico	45	18
Thailand	70	4	Chile	45	26
France	70	50	Venezuela	45	26
Denmark	68	49	Israel	44	30
Republic of Korea	68	7	Union of Soviet Socialist Republics	44	10
Spain	66	10	Czechoslovakia	43	11
India	66	26	Senegal	43	35
Poland	63	29	Cuba	40	-
Zambia	63	56	Norway	40	34
Japan	63	12	Germany, Federal Republic of	40	29
Hawaii	61	50	United Kingdom of Great Britain and Northern Ireland	38	33
Uruguay	60	32	Canada	37	29
Belgium	60	50	Australia	37	30
Argentina	58	18	Hong Kong	37	5
Tunisia	58	6	Egypt	37	2
Yugoslavia	57	10	Guatemala	36	10
Netherlands	57	42	United States of America	35	30
Malaysia	56	2	New Zealand	35	29
Jamaica	56	14	Peru	34	7
Italy	56	32	Finland	33	18
Brazil	54	37	Uganda	33	-
Nigeria	53	3	Sweden	30	30
Kuwait	52	12	Côte d'Ivoire	24	1
Colombia	52	18	Brunei Darussalam	20	7
Romania	52	9	Barbados	10	-
Switzerland	50	37			
Turkey	50	50			
Ghana	50	-			
Ireland	49	36			

<sup>a</sup> See para. 20. Indicative figures collected by WHO from various sources (- = data not available). Countries are listed in decreasing order of smoking prevalence among males.

4. AVERAGE TOBACCO CONSUMPTION AND PROJECTED DEMAND BY GEOGRAPHICAL AREA<sup>a</sup>

(per capita, per annum, in kilograms, dry weight)

	Average consumption Projected demand				Increase/Decrease per annum	
	1962-1964	1972-1974	1976	to 1985	Average 1962-1964 to 1972-1974	Projected 1972-1974 to 1985
	kg	kg	kg	kg	%	%
World	1.12	1.17	1.16	1.17	0.4	0.0
Developing	0.78	0.79	0.79	0.84	0.2	0.6
Developed	1.87	2.11	2.10	2.11	1.2	0.0
Africa	0.30	0.36	0.37	0.44	1.9	1.8
America, South	1.08	1.02	1.14	1.19	-0.6	1.3
Near East	0.63	0.80	0.89	1.04	2.4	2.2
Far East	0.72	0.66	0.61	0.71	-0.8	0.7
Asian centrally planned economics	0.93	1.01	1.01	0.99	0.8	-0.2
America, North	3.05	2.72	2.53	2.28	-1.2	-1.5
Europe, EEC	1.93	2.13	2.16	2.20	1.0	0.3
Other western	1.38	1.81	1.88	2.02	2.7	0.9
Eastern & USSR	1.31	1.72	1.74	1.83	2.8	0.5
Oceania	2.37	2.28	2.11	2.04	-0.4	-0.9
Japan	1.59	2.45	2.57	2.80	4.3	1.1
South Africa	1.29	1.39	1.42	1.40	0.7	0.1

<sup>a</sup> See para. 23.Source: Tobacco: supply, demand and trade projections to 1985 (37).



5. ACTUAL AND FORECAST WORLD TOBACCO PRODUCTION, TRADE AND CONSUMPTION  
BY ECONOMIC GROUPING OF COUNTRIES<sup>a</sup>

(in 1000 metric tonnes)

	1961	1970	1975	1980	1985	1990	1995
<u>Production</u>							
Industrial	1 328	1 376	1 576	1 402	1 400	1 500	1 500
Centrally-planned	387	627	755	726	800	900	1 000
Developing	2 033	2 661	3 087	3 257	3 800	4 500	5 400
World total	3 748	4 664	5 418	5 368	6 000	6 900	7 900
<u>Exports</u>							
Industrial	342	369	446	458	523	600	676
Centrally-planned	108	113	120	116	86	73	60
Developing	430	523	687	795	986	1 211	1 488
World total	880	1 005	1 253	1 369	1 595	1 884	2 224
<u>Imports</u>							
Industrial	548	672	889	872	982	1 106	1 245
Centrally-planned	123	123	149	176	200	219	292
Developing	154	225	269	340	418	508	619
World total	824	1 020	1 303	1 388	1 400	1 612	1 864
<u>Consumption</u>							
Industrial	1 533	1 679	2 019	1 816	1 871	1 947	2 026
Centrally-planned	402	637	784	787	900	900	1 100
Developing	1 756	2 362	2 665	2 803	3 300	3 900	4 600
World total	3 691	4 678	5 468	5 406	6 071	6 747	7 726

<sup>a</sup> See para. 23. In some cases the world totals may not add because of rounding up and because some of the figures are estimates.

Source: World Bank, 1982 (75).

6. CIGARETTE PRODUCTION BY GEOGRAPHICAL AREA  
FOR THE PERIOD 1971-1975 AND ANNUALLY 1976-1982<sup>a</sup>

(in 1000 millions)

Area	1971-1975	1976	1977	1978	1979	1980	1981	1982	Overall increase %
Africa	105	123	131	137	141	150	151	154	46.7
America, North	760	844	824	855	871	883	907	864	13.7
America, South	181	214	228	237	242	248	235	229	26.5
Asia	1 326	1 472	1 527	1 539	1 588	1 620	1 770	1 827	37.8
Europe	1 287	1 376	1 391	1 414	1 430	1 457	1 461	1 463	13.7
Oceania	36	37	40	40	40	42	42	42	16.7
World total	3 695	4 066	4 141	4 222	4 312	4 400	4 566	4 579	23.9

<sup>a</sup> See para. 25.

Source: Summarized from Tobacco Quarterly, No. 3, 1984 (76).

7. EXPORT/IMPORT OF CIGARETTES BY GEOGRAPHICAL AREA<sup>a</sup>

(in 100 millions)

Area	Exports <sup>b</sup>					Imports <sup>b</sup>				
	1973 -1977	1978	1979	1980	1981	1973 -1977	1978	1979	1980	1981
Africa	3.3	3.9	3.3	3.3	3.4	10.2	12.7	13.4	13.9	14.6
America, North	58.7	76.7	81.7	83.7	84.4	2.7	2.9	3.1	3.1	3.0
America, South	1.9	0.9	1.4	1.5	1.5	2.7	3.0	4.4	4.9	4.6
Asia	8.6	11.5	17.2	21.2	23.5	43.0	65.8	79.8	72.5	70.7
Europe, EEC	70.7	98.1	111.7	120.1	124.2	43.1	52.2	73.3	80.7	78.4
West	85.0	116.0	127.0	137.3	146.3	55.4	65.1	87.0	93.1	87.0
East	64.5	69.9	71.2	75.4	80.6	60.7	62.9	66.0	65.6	74.7
Oceania	0.6	0.2	0.2	0.3	0.3	1.1	1.1	1.2	1.2	0.9

<sup>a</sup> See para. 45.

<sup>b</sup> The sum total of world exports in this table is larger than that of world imports. This may be attributable to massive smuggling and other technical causes too complex to explain here.

Source: Tobacco Quarterly, No. 3, 1984 (76).



8. ESTIMATED GROSS INCOME FROM TOBACCO AT CURRENT GROWERS' PRICES AS A PROPORTION OF INCOME FROM TOTAL PRIMARY AGRICULTURAL PRODUCTION IN SELECTED PRODUCING COUNTRIES, 1978-1980<sup>a</sup>

(United States dollars, in millions)

	Value of tobacco crop (estimate)			Ratio of tobacco to total primary agricultural production		
	1978	1979	1980	1978	1979	1980
	US \$	US \$	US \$	%	%	%
<u>Developing countries</u>						
Malawi	67	77	65	7.4	7.9	7.9
Zimbabwe	130	127	110	17.4	23.7	23.8
Mexico	62	76	88	0.7	0.8	0.8
Argentina	86	123	192	1.1	1.1	1.1
Brazil	228	278	200	1.6	1.6	1.4
Turkey	740	715	525	2.9	2.0	2.3
India	395	388	360	0.9	0.9	0.9
Indonesia	55	70	90	1.0	1.0	1.0
Philippines	56	61	63	0.9	0.8	0.9
Republic of Korea	385	358	309	3.1	2.6	2.7
Thailand	90	100	112	2.7	2.9	2.9
<u>Developed countries</u>						
Canada	263	195	276	4.4	3.3	4.2
United States	2 606	2 271	2 672	4.1	2.8	3.5
Greece	422	426	488	6.6	6.9	5.6
Italy	266	304	280	1.4	1.6	1.4
Yugoslavia	285	362	325	2.2	2.2	1.8
Japan	1 217	1 106	1 316	2.5	2.2	2.3

<sup>a</sup> See para. 46.

Source: The economic significance of tobacco (18).

### Appendix 2

#### CHRONOLOGICAL DEVELOPMENTS CONCERNING SMOKING AND HEALTH

##### Date

- 1761 Dr James Hill, an English physician, makes the first known clinical report linking tobacco with cancer.
- 1808- Peninsular War. Veterans popularize cigarette smoking on return home.  
1814
- 1853- British soldiers introduced to cigarettes during the Crimean War.  
1856
- 1884 James Bonsack's cigarette-making machine begins production in the United States of America, dramatically raising the productivity of cigarette factories.

- 
- 1899 The first modern national law to protect children from smoking is adopted in Norway.
- 1914- World War I results in a major increase in cigarette smoking. (Example: in 1914  
1918 cigarette production in the United States of America was 18 thousand million; by 1918, it had become 47 thousand million.)
- 1926 The first advertisement campaign specifically directed at women, "Blow some my way".
- 1936 Article in the American Journal of Obstetrics and Gynecology raising concerns about the effect of smoking on unborn children.
- 1939- World War II gives another tremendous impetus to cigarette smoking.  
1945
- 1940 Article in the Journal of the American Medical Association links smoking with heightened risk of coronary disease.
- 1950 Epidemiological studies published in the United States of America and the United Kingdom of Great Britain and Northern Ireland linking lung cancer with cigarette smoking (both showed that about 95% of those contracting lung cancer were cigarette smokers).
- 1953 Study published showing that tobacco tar condensates induce cancer, when painted on the skins of mice.
- 1962 In the United Kingdom the Royal College of Physicians releases its first report citing cigarette smoking as "the most likely cause of the recent worldwide increase in deaths from lung cancer".
- 1964 The first report by the Surgeon General of the United States links smoking and lung cancer; in the first few months after the report was issued, cigarette sales dropped by nearly 20%, but soon returned to previous levels.
- 1965 First appearance of health warnings on cigarette packets (in the United States of America).
- 1967 First World Conference on Smoking and Health (New York).
- 1968 Second major advertisement campaign targeted exclusively on women, with its motto "You've come a long way, baby".
- 1971 The World Health Organization adopts its first resolution against smoking.
- 1971 Second World Conference on Smoking and Health (London).
- 1972 Health warnings are included in all cigarette advertising in the United States of America.
- 1973 Rules requiring separation of smoking and non-smoking sections on all commercial airlines are first established by the United States Civil Aviation Board.
- 1974 The World Health Organization convenes its first Expert Committee, on Smoking and its Effects on Health, and recommends that all countries make health warnings mandatory on cigarette packages, ban cigarette promotion, and develop programmes for smoking prevention.
- 1975 The first tobacco act is enacted, in Norway.
- 1975 Third World Conference on Smoking and Health (New York).
- 1979 The World Health Organization publishes the report of its second Expert Committee, on Controlling the Smoking Epidemic.
- 1979 Fourth World Conference on Smoking and Health (Stockholm).



- 1980 World Health Day, 7 April: "Smoking or health - the choice is yours". Dr H. Mahler, Director-General of the World Health Organization, states: "Smoking is probably the largest single preventable cause of ill health in the world today".
- 1980 The World Health Assembly in Geneva officially requests the Director-General of WHO to establish an effective action programme on smoking and health (resolution WHA33.35, 23 May).
- 1983 The World Health Organization publishes the report of its third Expert Committee, on Smoking Control Strategies in Developing Countries.
- 1983 Fifth World Conference on Smoking and Health (Winnipeg, Canada).
- 1985 Iceland introduces the first pictorial, as well as textual, multiple health warnings, appearing prominently on the front of cigarette packets.

## 2. TOBACCO OR HEALTH

### Report by the Programme Committee

[EB77/22 - 8 November 1985]

1. The Programme Committee reviewed a draft report on the "WHO Programme on Smoking and Health: The adverse health effects of tobacco use", to be submitted to the Executive Board at its seventy-seventh session in January 1986. It was suggested that the title be changed to "WHO Programme on Tobacco or Health", or "WHO Programme on Tobacco and Disease", or "WHO Programme on Diseases Caused by Tobacco", since the choice was smoking or health, and the pathological agent was tobacco not merely in its smoked, but in all its forms. The draft report had been referred to, and received the benefit of comments from, a number of outside experts and organizations. The Committee made a number of suggestions for improving the report before submission to the Board.<sup>1</sup>
2. The Committee noted that the whole problem of smoking and tobacco-related diseases had reached epidemic proportions on a worldwide scale - indeed, a "pandemic". While favourable trends could be seen in a few developed countries, the overall trend in most countries, especially in developing ones, showed continuing, significant increases in the use of tobacco products. In particular, women were joining the ranks of smokers in large numbers, while children and young people were especially targeted as new customers by the tobacco industry. In the battle between health and commercial interests, it was less than clear that health was winning the fight against tobacco; health could and should win this battle.
3. In the field of smoking and health, unlike a number of other programme areas, WHO faced the active opposition of major interest groups. WHO had no vested interest other than concern for health and scientific truth. There was ample, scientifically proven and validated evidence of the direct causal link between a substantial number of diseases and use of tobacco products. Tobacco was clearly addictive and the main cause of at least one million premature deaths a year. Some hazardous chemicals and pollutants which received extensive publicity in the media actually caused far less morbidity and mortality than tobacco, which often received little or no attention as a health risk. The presence of carcinogens and other toxic substances in tobacco smoke and other tobacco products was a known fact. WHO had to state this clearly and unequivocally, since there was constant misrepresentation by adverse interests.
4. WHO was calling for a common sense public health approach and action now, rather than deferral of action pending further basic research. Research was still needed on the behavioural aspects of smoking, but to suggest priority for continuing basic research further to prove the causal relationship between disease and tobacco was unnecessary and would simply buy time for adverse commercial interests.

<sup>1</sup> The report was subsequently distributed separately in revised form as document EB77/22 Add.1 (see part 1 of this Annex).

5. WHO had to take a firm position against any form of so-called "safe" cigarette or tobacco product. Nicotine was clearly addictive and, considering the many tobacco-induced diseases, "safe" tobacco did not exist. There was no safe dosage of tobacco.
6. WHO had to take an equally firm position against "passive smoking", which might better be referred to as "enforced smoking" or "involuntary smoking". There was a need to protect the right to health of the non-smokers who were at risk from the practices of their addicted fellow citizens. Attention should be given to establishing or extending segregated smoking areas in all public places, restaurants and transport. Non-smoking was especially important in health-related establishments and among health personnel. This applied particularly to WHO, since reform began at home, and people looked to health institutions for healthy life-style example.
7. A range of strategic, tactical and intersectoral actions had to be undertaken by Member States, with the cooperation of WHO, the United Nations system and other partners, relating to policy and strategy formulation, objectives and targets, political involvement, and advocacy, information, education, legislation, advertising, smoking-cessation, economic aspects and selective practical research as outlined in the Director-General's report. The Committee particularly urged that the revised report on tobacco versus health, and the work that went into it, be exploited widely outside the Board and Health Assembly. It should serve as a technical baseline for a range of promotional activities and publications, such as, for example, the "Winners for Health" effort being jointly undertaken by WHO and the International Olympic Committee (IOC). There was a need for efficient and effective coordination among all programmes dealing with the risks of tobacco both within WHO and in countries. In addition, WHO should foster the exchange of successful experiences and information between countries.
8. The Committee believed that the time had come for WHO to reiterate a clear and firm policy on tobacco versus health, and concluded that the Executive Board should consider proposing a resolution for discussion by the Thirty-ninth World Health Assembly in May 1986. The Director-General was asked to prepare a suitable draft resolution and to report to the Executive Board on the financial implications.
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ANNEX 4

CONFIRMATION OF AMENDMENTS TO THE STAFF RULES<sup>1</sup>

1. Report by the Director-General

[EB77/30 - 6 November 1985]

Amendments to the Staff Rules made by the Director-General are submitted for confirmation by the Board in accordance with Staff Regulation 12.2.<sup>2</sup> Document EB77/INF.DOC./5 gives the texts of the amended Staff Rules, the purpose of which is explained below. The effective dates of these changes are 1 March 1986 or 1 January 1985 as appropriate.<sup>3</sup>

1. Amendment arising out of a request from the Chairman of the International Civil Service Commission (ICSC) concerning the harmonization of schemes for long-service steps

1.1 Since 1968, WHO has been awarding extra within-grade steps to staff members having satisfactorily served the Organization for 20, 25 and 30 years.

1.2 The scheme of awarding long-service steps is inscribed in the Staff Rules as follows:

"555.2 A staff member who has completed 20, 25 and 30 years of satisfactory service with the Organization qualifies for a meritorious increase under Rule 555.1. Satisfactory service with other United Nations organizations shall be included if credited under Rule 480.1.4."

Staff Rule 555.1, referred to in the above Rule, reads as follows:

"555.1 A staff member whose performance has been especially meritorious beyond that which may reasonably be expected of a normally well-qualified staff member, may be granted one, or exceptionally two, extra within-grade steps. Such increase shall not affect the staff member's eligibility for normal within-grade increases, and the normal maximum shall be extended by the equivalent number of steps."

1.3 WHO is one of three organizations in the common system<sup>4</sup> to have a scheme under which long-service steps are awarded. In recent years the United Nations General Assembly and ICSC have paid increasing attention to the award of such long-service steps in these organizations as well as to the introduction of a similar, but more restricted, scheme in all organizations of the common system.

1.4 At its thirty-ninth session, the United Nations General Assembly requested ICSC, "in conformity with article 10 of its statute, to review the practices of the organizations of the United Nations common system as regards long service steps for staff in the Professional category, to examine ways in which uniformity on this question may be established within the common system and to report thereon to the General Assembly at its fortieth session".<sup>5</sup>

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<sup>1</sup> See resolution EB77.R8.

<sup>2</sup> WHO Basic Documents, 36th ed., 1986, p. 92.

<sup>3</sup> See also part 2 and the appendix to this annex.

<sup>4</sup> WHO, the International Labour Organisation (ILO), and the Universal Postal Union (UPU).

<sup>5</sup> United Nations General Assembly resolution 39/69, part II, para. 2, 13 December 1984.



1.5 ICSC has now completed its review and has decided to recommend the introduction of one additional step for long service into the salary scales. As concerns general service staff, this decision has been forwarded directly by the Commission to the executive heads of the organizations for implementation in accordance with article 11 of the ICSC statute. As concerns professional staff, the recommendation has been transmitted to the fortieth session of the United Nations General Assembly (1985) for its approval in accordance with article 10 of the same statute.

1.6 In its recommendation to the General Assembly, the Commission also suggests that the General Assembly "might wish to make representation to the Governing Bodies of WHO and ILO to consider a harmonization of practices within the United Nations common system".<sup>1</sup> At the same time as bringing this matter to the General Assembly's attention, the Chairman of ICSC wrote to the Director-General of WHO on 16 August 1985 as follows:

"In view of the request of the General Assembly of the United Nations concerning the harmonization of schemes for long service steps in organizations of the United Nations common system, I should be grateful if you could place this matter before your Executive Board at the next available opportunity and inform me of its deliberations."

1.7 The WHO long-service scheme was introduced on the twentieth anniversary of the Organization in 1968, when the Executive Board confirmed that recognition should be granted to those staff members who had served the Organization for 20 years. It was decided that this recognition would best be granted through the existing meritorious increase system in the sense that 20 years of satisfactory service constituted sustained performance of exceptional merit over a significant period of time. In the course of the debates it was agreed that such increases should also apply after 25 and 30 years of service.

1.8 The scheme has functioned satisfactorily since 1968 and it is well known and appreciated by serving staff members. The Director-General does not propose to revise the existing provisions for staff who are in service.

1.9 On the other hand, in view of the specific request of the United Nations General Assembly to harmonize practices, the Director-General proposes to amend the Staff Rules so that staff joining the Organization after 1 March 1986 will be entitled to receive just one long-service step upon completion of 20 years' satisfactory service, in the same way as staff in other organizations of the common system.<sup>2</sup>

2. Amendment considered necessary in the light of a decision taken by the United Nations General Assembly at its thirty-ninth session and reconfirmed by ICSC at its twenty-second session in July 1985

2.1 As reported to the Executive Board at its seventy-fifth session in January 1985, the United Nations General Assembly decided at its thirty-ninth session to consolidate 20 points of post adjustment into the net base salary of the professional and higher categories. Appropriate amendments were made to the Staff Rules.

2.2 One consequence of the consolidation process that remains to be formally reflected in the Staff Rules concerns terminal remuneration. The General Assembly decided that the levels of terminal remuneration should not change after consolidation and should therefore continue to be calculated on the basis of the 1981 gross base salary. This decision was again brought before ICSC at its twenty-second session in July 1985, where it was reconfirmed.

2.3 The General Assembly's decision has already been reflected in the schedules of terminal remuneration circulated to staff members.

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<sup>1</sup> It is understood that UPU is reconsidering its own policy in the light of the common policy approved.

<sup>2</sup> This proposal takes into account ICSC's decision to introduce one long-service step for the general service category; it assumes that given also the attempts being made by organizations to harmonize their practices in this respect, the United Nations General Assembly will adopt the ICSC proposal with regard to professional staff. Should this not be the case, the Director-General will submit a supplementary report to the Executive Board (see part 2 of this annex).



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### 3. Budgetary implications

3.1 In the short or medium term there are no budgetary implications arising from these amendments.

### 2. Supplementary report by the Director-General

[EB77/30 Add.1 - 8 January 1986]

1. In the report reproduced in part 1 of this annex, the Director-General proposed an amendment to the Staff Rules resulting from the request of the Chairman of the International Civil Service Commission (ICSC) concerning the harmonization of schemes for long-service steps.
2. This proposal was made on the assumption that at its fortieth session the United Nations General Assembly would accept the ICSC recommendation to introduce one additional step for long service into salary scales throughout the common system.<sup>1</sup>
3. In the event, the United Nations General Assembly has not agreed to the ICSC recommendation, and therefore the proposed long-service step for professional staff with 20 years' service will not be introduced.
4. As mentioned in paragraph 1.3 of part 1 of this annex, WHO is one of three organizations in the common system which has a scheme under which long-service steps are awarded. In the case of the International Labour Organisation one of the other two organizations, the Director-General of the International Labour Office has advised the Director-General that the ILO Governing Body has been informed of ICSC's request that the executive heads of WHO, the Universal Postal Union (UPU), and ILO consider ways of harmonizing their organizations' practice along the lines recommended by ICSC. The ILO Governing Body has, however, accepted its Director-General's conclusion that no change should be made in the ILO system and agreed that the Director-General of ILO should so inform the Commission. In informing ICSC of this matter, the ILO Director-General's representative stated that the question of long-service steps was one on which a common approach was not indispensable given the different situation and needs of the organizations.
5. Thus, the position now is that ILO will retain its present scheme of rewarding long service; the majority of organizations in the common system have introduced, or are introducing, one long-service step for general service staff after 20 years' service; no such system will be introduced for professional staff except in the World Intellectual Property Organization (WIPO).
6. In the light of these developments, the Director-General has reviewed his proposal to amend the Staff Rules to the effect that staff joining the Organization after 1 March 1986 would be entitled to one long-service step upon completion of 20 years' service, as this can no longer be considered as harmonizing with or even reflecting common system practice. In consequence, he does not for the time being propose to revise the existing Staff Rule (555.2).<sup>2</sup>

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<sup>1</sup> See part 1 of this annex, paragraph 1.9, footnote 2.

<sup>2</sup> The revised text of this Staff Rule set out in document EB77/INF.DOC./5 is therefore no longer applicable.

Appendix

TEXT OF THE AMENDED STAFF RULE

[EB77/INF.DOC./5 - 6 November 1985]

310. DEFINITIONS

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310.4 "Terminal remuneration" is the figure used in the calculation of separation payments. For staff in the general service category, "terminal remuneration" is equivalent to pensionable remuneration. For staff in the professional and higher categories it is equivalent to gross base salary as at 1 January 1981 adjusted by movements of the weighted average of post adjustments.

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ANNEX 5

REAL ESTATE FUND<sup>1</sup>

[EB77/31 - 4 December 1985]

Report by the Director-General

INTRODUCTION

This report is divided into three parts:

Part I provides information on the status of current projects financed from the Real Estate Fund and undertaken prior to 31 May 1986;

Part II lists the requirements for activities which it is proposed to finance from the Real Estate Fund for the period 1 June 1986 to 31 May 1987;

Part III provides a summary of the estimated requirements of the Fund.

I. STATUS OF CURRENT PROJECTS UNDERTAKEN PRIOR TO 31 MAY 1986

1. Regional Office for Africa

1.1 The conversion of eight villas and six studios and the construction of six small cesspools commenced in 1984. Due to cost increases and other local problems, the project was scaled down by abandoning the conversion of two villas and six studios. The six villas and three cesspools were completed in 1984. The construction of the remaining three cesspools has now been completed. Subject to receipt and settlement of final accounts from the contractor, the project has been completed at a provisional cost of US\$ 293 000 as compared with the estimated amount of US\$ 322 000.<sup>2</sup>

1.2 The continued shortage of the required materials hampered the completion of the maintenance work on the roads immediately around the Regional Office building. The cost of the project is not expected to exceed the estimate of US\$ 13 000.<sup>2</sup>

1.3 Work is continuing on the roofs of the apartment blocks. As a result of some delay in the preparation of documents by the local architect, the project is now expected to be completed only in the second half of 1986. The cost is none the less expected to remain within the estimated amount of US\$ 200 000.<sup>3</sup>

1.4 Difficulty in obtaining the required materials for the resurfacing of the roads outside the periphery of the Regional Office building has also delayed this project, which has now been reduced in order to stay within the estimated amount of US\$ 100 000.<sup>3</sup>

1.5 The contract for the repairs to the roofs of villas C20 to C23 and D24 to D26 has been awarded and the work is expected to be completed by the first quarter of 1986. The cost of this project will remain within the estimated amount of US\$ 136 000.<sup>4</sup>

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<sup>1</sup> See resolution EB77.R9.

<sup>2</sup> Document EB67/1981/REC/1, p. 141.

<sup>3</sup> Document EB71/1983/REC/1, p. 89.

<sup>4</sup> Document EB73/1984/REC/1, p. 29.

1.6 The replacement of the corrugated aluminium roofs of blocks D and E of the Regional Office building will also be completed by April 1986. The cost is not expected to exceed the estimated amount of US\$ 57 000.<sup>1</sup>

1.7 The Regional Director has reviewed the plans for the extension of the Regional Office building and has decided to proceed with them. The preparatory work, including the call for tenders, will take up to August 1986. The construction work will begin immediately thereafter and last for approximately one year. The estimated cost of US\$ 750 000<sup>1</sup> is not expected to be exceeded.

## 2. Regional Office for the Americas/Pan American Sanitary Bureau (PASB)

2.1 The contribution of up to US\$ 300 000,<sup>2</sup> authorized by the Thirty-fifth World Health Assembly, towards the construction of a building for the Caribbean Food and Nutrition Institute was paid after an equivalent contribution had been made by PAHO and the Government of Jamaica had formally guaranteed its participation in the construction of the building as planned.<sup>3</sup> Construction was initiated in May 1984 and completed in July 1985.

2.2 The project for the construction of a building for the joint PAHO/WHO Publications and Documentation Service and the office of the PAHO representative for Area II in Mexico has been cancelled. The estimated amount of US\$ 250 000<sup>4</sup> for this project will, therefore, no longer be required from the Real Estate Fund.

## 3. Regional Office for South-East Asia

3.1 The work on the extension to the Regional Office has been completed but the final accounts of contractors have not yet been settled. The provisional cost is at present US\$ 645 617 as compared with the estimated amount of US\$ 675 000.<sup>5</sup>

3.2 Electrical work in connection with the standby generator has been carried out at a total cost of US\$ 95 000, as compared with the previous estimate of US\$ 250 000.<sup>6</sup> The substantial savings resulted from negotiating a special price for a somewhat smaller generator and from a favourable exchange rate at the time of purchase.

3.3 A new parking area has been created inside the Regional Office compound at a cost not exceeding the previously estimated amount of US\$ 20 000.

## 4. Regional Office for Europe

4.1 The installation of a fire alarm system has been carried out at a cost which remains within the estimated amount of US\$ 45 000.<sup>6</sup>

4.2 The construction of the windows in the basement of building B has been completed at a total cost that will not exceed US\$ 30 000, as compared with the previously estimated amount of US\$ 41 000.<sup>7</sup>

4.3 The repairs to the roof of the villas at Standpromenaden 33 and 39 have been completed within the estimated amount of US\$ 67 000.<sup>8</sup>

4.4 All the flooring of building C has been replaced at a cost which remains within the limits of the estimate of US\$ 40 000.<sup>8</sup>

<sup>1</sup> Document EB73/1984/REC/1, p. 29.

<sup>2</sup> Resolution WHA35.12.

<sup>3</sup> Resolution EB69.R24.

<sup>4</sup> Resolution WHA34.12.

<sup>5</sup> Document EB67/1981/REC/1, p. 142.

<sup>6</sup> Document EB69/1982/REC/1, p. 150.

<sup>7</sup> Document EB71/1983/REC/1, p. 89.

<sup>8</sup> Documents EB71/1983/REC/1, p. 89, and EB73/1984/REC/1, p. 28.



4.5 New lines have been added to the telephone exchange at a total cost which does not exceed the previously estimated amount of US\$ 9500.<sup>1</sup>

4.6 Work on the insulation, lighting and heating of the attic of building A has been completed at a total cost of US\$ 24 954, as compared with the originally estimated sum of US\$ 65 000.<sup>2</sup>

4.7 The installation of the emergency lighting system has been carried out at a cost of US\$ 3094, as compared with the previous estimate of US\$ 8000.<sup>2</sup>

4.8 The construction of a new industrial lift in building B has been delayed because of structural problems and the necessity of complying with municipal requirements. The engineer is submitting new proposals in November 1985 which are expected to remain within the previously estimated amount of US\$ 160 000.<sup>2</sup>

#### 5. Regional Office for the Eastern Mediterranean

5.1 The Thirty-eighth World Health Assembly authorized the financing from the Real Estate Fund of the construction of an extension to the Regional Office building. The work is proceeding on schedule and is expected to be completed before the end of 1985. The total cost is expected to remain within the previously estimated amount of US\$ 190 000.<sup>3</sup>

#### 6. Regional Office for the Western Pacific

6.1 Work on the various authorized improvements and alterations to the older part of the Regional Office building is nearly completed. Improvement of some cafeteria facilities and the creation of a new access to the reception lounge are expected to be completed by the middle of 1986. The total cost of these alterations and improvements will remain within the estimated amount of US\$ 275 000.<sup>4</sup>

6.2 The renovation of the air-conditioning system has been completed within the estimate of US\$ 27 000.<sup>5</sup>

6.3 The installation of fire doors between the main building and the annexe, in order to comply with local regulations, has been carried out at a cost of US\$ 9788. The original estimate was US\$ 15 000.

6.4 The order for the renewal of the telephone exchange and auxiliary equipment has been placed and the installation is expected to be carried out in early 1986 within the previously estimated amount of US\$ 350 000.<sup>2</sup>

6.5 The remodelling of the conference hall has been completed. The installation of the interpretation equipment is expected to be carried out in early 1986. The project is expected to be implemented within the previously estimated amount of US\$ 120 000.<sup>6</sup>

#### 7. Headquarters

7.1 Following the decision of the Thirty-sixth World Health Assembly,<sup>7</sup> the construction of a new building to house the kitchen and restaurant at headquarters was started in February

<sup>1</sup> Documents EB71/1983/REC/1, p. 89, and EB73/1984/REC/1, p. 28.

<sup>2</sup> Document EB73/1984/REC/1, p. 29.

<sup>3</sup> Document EB75/1985/REC/1, p. 59, and resolution WHA38.9 (document WHA38/1985/REC/1, p. 8).

<sup>4</sup> Document EB67/1981/REC/1, p. 143.

<sup>5</sup> Document EB71/1983/REC/1, p. 89.

<sup>6</sup> Document EB73/1984/REC/1, p. 30.

<sup>7</sup> Resolution WHA36.17.

1984. This building has now been completed and the kitchen and restaurant have been operational since April 1985. The total cost was US\$ 2 728 844 as compared with the estimate of US\$ 2 730 000.<sup>1</sup>

7.2 The restoration work on the structural safety of the eighth floor started in July 1985 and is expected to be completed by January 1986 within the amount previously estimated at US\$ 370 000.<sup>1</sup>

## II. ESTIMATED REQUIREMENTS FOR THE PERIOD 1 JUNE 1986 TO 31 MAY 1987

### 8. Regional Office for Africa

8.1 The air-conditioning system of the Regional Office building is based on three cold water producing sub-systems, of which two were installed in 1966 and one in 1976. The two older units have been repaired several times and further repair is no longer cost-effective in view of their age and the lack of availability of spare parts. The climatic conditions in Brazzaville require a continuous and reliable air-conditioning system. In addition, the approved forthcoming extension to the Regional Office building will have to rely on the centralized system for cooling. The estimated cost of replacing the two older units is US\$ 320 000.

### 9. Regional Office for the Americas

9.1 At its seventy-fifth session, in January 1985, the Executive Board was informed that, in view of the number of WHO-financed staff in the Region of the Americas, the Director-General felt that it would be fair and appropriate for WHO, through its Real Estate Fund, to participate regularly to some extent in the financing of the real estate operations in the Americas.<sup>2</sup> The Director-General has decided that a suitable formula for this participation would be for WHO to contribute 25% of the estimated real estate costs in the Americas, as and when the need arises.

9.2 The Pan American Sanitary Bureau headquarters building is 20 years old and its metal-supported black granite facing is showing signs of deterioration. The materials in the joints between the polished granite and many of the precast concrete assemblies have deteriorated as a result of time and weathering to such a degree as to allow water to enter. Freezing, thawing and drying exert extreme mechanical pressures against the granite slabs, causing them to break in pieces, shift or pull away from supporting pins and anchors. This creates a serious possibility of injury or damage, thereby increasing the Organization's risk of liability. It is intended to remove and replace the damaged granite cladding and soffits and recaulk all disturbed joints. The estimated cost of the project is US\$ 350 000, of which the share of the WHO Real Estate Fund, according to the above formula, would be US\$ 87 500.

### 10. Headquarters

#### Roof

10.1 The roof of the headquarters building and the technical installations built thereon are showing signs of deterioration after more than 20 years of exposure to the elements. This has resulted in rain water leakage and corrosion of the supporting metal façades. It is therefore necessary to renovate the waterproofing of the roof and replace the metal façades of the premises housing the technical installations. The estimated cost of this project is US\$ 240 000.

#### Eighth floor

10.2 At its seventy-fifth session, the Executive Board was informed that the Director-General intended to present plans for the use of the eighth floor to the Executive Board in January 1986.<sup>2</sup>

<sup>1</sup> Document EB73/1984/REC/1, p. 30.

<sup>2</sup> Document EB75/1985/REC/2, p. 353.



10.3 When the work undertaken to restore the structural safety of the eighth floor is completed, the space previously occupied by the restaurant and the kitchen on that floor, i.e., approximately 1100 square metres, will become available. However, this space will need to be adapted to its future use. The height of its roof, the type of windows and floor, the existing electrical and telephone wiring and outlets, and the heating and ventilation ducts are those which were foreseen for the restaurant and its kitchen and any other use of these premises will require their modification.

10.4 The Director-General considers that this valuable area, which constitutes the only remaining space for providing flexibility of accommodation at headquarters, cannot be left unused in the light of the Organization's requirements. These requirements are analysed in paragraph 10.7 below. He has therefore decided to submit plans to the Executive Board and the Health Assembly for the use of the eighth floor to create (a) one additional multi-purpose meeting room, providing for 30 to 40 participants and suitable for modern audiovisual communication methods needed for consultations, seminars, briefings and other meetings, in particular those intended for educational purposes, and (b) office accommodation. To avoid any modification of the façade, which would be costly and would affect the appearance of the building, the area used heretofore as a restaurant will be transformed into landscaped office space, whereas the area previously occupied by the kitchen will be subdivided into standard modular offices. This would provide accommodation for 54 to 78 persons, together with office and informatics equipment.

10.5 Consequently, the architect responsible for the construction of the new restaurant was requested to formulate a preliminary proposal and to cost it. The architect's proposal provides for a total space of 650 square metres for landscaped and modular offices, 80 square metres for the meeting room and 370 square metres for passages, technical installations, etc.

10.6 This preliminary proposal also provides for certain alterations and additions required to render the vacated space usable, such as a false ceiling and floor, adequate wiring and outlets for electricity and telecommunications, appropriate ducting for heating and ventilation, and panelling and partitioning for modular and landscaped office arrangements. The total estimated cost of this project is US\$ 1 165 000.

10.7 The need for additional office space which has been felt over the last few years is due, as reflected in the table below, to the following: (a) an increase in posts funded from extrabudgetary sources, including staff on loan or secondment and associate experts; (b) an increase in the number of short-term staff, consultants and temporary advisers; and (c) the substantial growth of informatics equipment requiring individual accommodation either because of collective use or because of the nature of the equipment, for example, large printers and central processing or control units.

	(a) <u>Posts</u>		
	<u>Regular budget</u>	<u>Extrabudgetary</u>	<u>Total</u>
October 1980 . . . . .	1 059	222	1 281
October 1985 . . . . .	1 024	307	1 331
	<u>          </u>	<u>          </u>	<u>          </u>
Increase/decrease . . . . .	(35)	85	50
			or 3.9%

(b) <u>Short-term staff, consultants and temporary advisers</u>	
October 1980 . . . . .	179
October 1985 . . . . .	263
	<u>          </u>
Increase . . . . .	84 or 46.9%

	(c) <u>Informatics equipment</u>				<u>Total</u>
	<u>Terminals</u>	<u>Printers</u>	<u>Central processing</u> <u>units</u>	<u>Miscellaneous</u>	
October 1980	51	14	1	1	67
October 1985	325	102	7	21	455

10.8 The total area now available as office space in the headquarters buildings is 20 120 square metres. The office space which will become available on the eighth floor is approximately 650 square metres, or an increase of 3.2%.

### III. SUMMARY

11. To summarize, on the basis of the foregoing considerations, the estimated requirements of the Real Estate Fund for the period 1 June 1986 to 31 May 1987 are as follows:

	<u>US \$</u>
Replacement of two units of the air-conditioning system at the Regional Office for Africa (paragraph 8.1) .....	320 000
Financial participation in the replacement of the granite façade of the Regional Office for the Americas (paragraph 9.2) .....	87 500
Renovation of the headquarters roofing and the technical installations built thereon (paragraph 10.1) .....	240 000
Remodelling of the headquarters eighth floor (paragraph 10.6) .....	1 165 000
Total estimated requirements	1 812 500
Estimated unencumbered balance of the Real Estate Fund, including accrued interest, as at 31 December 1985 (see Appendix, part 1) rounded off at ....	1 616 500
Shortfall which it is proposed to cover by appropriation by the Health Assembly .....	196 000



Appendix

REAL ESTATE FUND

1. ESTIMATED SITUATION AS AT 31 DECEMBER 1985

(expressed in US dollars)

	1 January 1970 - 31 December 1981	1982-1983	1984-1985 <sup>a</sup>	Total (from inception)
1. <u>BALANCE AT 1 JANUARY</u> . . . . .	-	3 190 205	5 902 911	-
2. <u>INCOME</u>				
Balance of Revolving Fund for Real Estate Operations (resolution WHA23.14) . . . . .	68 990	-	-	68 990
Casual income appropriated (resolutions WHA23.15, WHA24.23, WHA25.38, WHA28.26, WHA29.28, WHA33.15, WHA34.12) . . . . .	9 792 936	-	-	
WHA35.12 . . . . .	-	3 409 000	-	
WHA36.17 . . . . .	-	605 500	-	
WHA37.19 . . . . .	-	-	805 000	14 612 436
Transfer from Part II of the Working Capital Fund (resolution WHA23.15) . . . . .	1 128 414	-	-	1 128 414
Rents collected . . . . .	2 835 126	697 853	615 000	4 147 979
Interest . . . . .	1 822 365	1 192 520	950 000	3 964 885
Other . . . . .	1 567	-	-	1 567
<u>Total income</u>	15 649 398	5 904 873	2 370 000	23 924 271
<u>Total funds available</u>	15 649 398	9 095 078	8 272 911	-
3. <u>OBLIGATIONS AND EXPECTED OBLIGATIONS</u> (see part 2 of this Appendix) . . . . .	12 459 193	3 192 167	6 656 084	22 307 444
4. <u>BALANCE AT 31 DECEMBER</u> . . . . .	3 190 205	5 902 911	1 616 827	1 616 827

<sup>a</sup> Estimated.

2. OBLIGATIONS AND EXPECTED OBLIGATIONS FROM INCEPTION (1 JANUARY 1970) TO 31 DECEMBER 1985  
(expressed in US dollars)

Purpose	Relevant authorization (resolution/decision)	Obligations			
		1 January 1970 - 31 December 1981	1982-1983	1984-1985 <sup>a</sup>	Total
<b>1. Maintenance, repairs and alterations to houses for staff</b>	WHA23.14, para. 3(i)				
Regional Office for Africa . . . . .		1 672 887	402 288	322 000	2 397 175
Regional Office for the Eastern Mediterranean . . . . .		6 240	49 567	42 430	98 237
		<u>1 679 127</u>	<u>451 855</u>	<u>364 430</u>	<u>2 495 412</u>
<b>2. Major repairs, and repairs to the Organization's existing buildings</b>	WHA23.14, para. 3(ii)				
<b>Headquarters:</b>					
Current repairs . . . . .		764 864	138 237	-	903 101
Restoration of the structural safety of the eighth floor of the main building . . . . .	WHA35.12 and WHA36.17	-	-	370 000	370 000
Regional Office for Africa . . . . .		123 015	636 092	671 461	1 430 568
Regional Office for South-East Asia . . . . .		-	-	20 000	20 000
Regional Office for Europe . . . . .		-	152 447	456 578	609 025
Regional Office for the Eastern Mediterranean . . . . .		-	-	25 000	25 000
Regional Office for the Western Pacific . . . . .		182 871	194 068	583 609	960 548
		<u>1 070 750</u>	<u>1 120 844</u>	<u>2 126 648</u>	<u>4 318 242</u>
<b>3. Acquisition of land, construction/extension of buildings</b>	WHA23.14 para. 3(iii)				
<b>Headquarters</b>					
<b>Main building:</b>					
Transfer to Headquarters Building Fund for part settlement of litigation with Compagnie française d'Entreprise . . . . .	WHA23.18	655 140	-	-	655 140
Acquisition of land . . . . .	WHA23.17	1 000 095	-	-	1 000 095
Second prefabricated building . . . . .	WHA24.22	689 791	-	-	689 791
Third prefabricated building . . . . .	WHA28.26	1 799 575	-	-	1 799 575
Architectural studies for proposed extension of main building . . . . .	WHA24.22 and WHA25.38	243 832	-	-	243 832
Alterations to 'V' building . . . . .	WHA33.15	102 658	-	-	102 658
Additional car park . . . . .	WHA33.15	104 564	-	-	104 564
Construction of a building to house the kitchen and restaurant . . . . .	WHA36.17	-	6 978	2 721 866	2 728 844
<b>Regional Office for Africa</b>					
Construction of additional staff housing . . . . .	WHA23.16	936 937	-	-	936 937
First extension of Regional Office building . . . . .	WHA23.16	751 585	-	-	751 585
Second extension of Regional Office building . . . . .	WHA28.26	930 588	-	-	930 588
Acquisition of land for additional staff housing . . . . .	WHA24.24	13 517	-	-	13 517
Conversion of staff housing . . . . .	WHA34.12	-	11 789	310 211	322 000
Construction of small office building and staff housing in Malabo, Equatorial Guinea . . . . .	WHA34.12	817	598 470	11 713	611 000
Third extension of Regional Office building . . . . .	WHA37.19	-	-	750 000	750 000
<b>Regional Office for the Americas</b>					
Construction of Zone Office, Brasilia (WHO's contribution) . . . . .	WHA25.39	100 000	-	-	100 000
Construction of a building for the Caribbean Food and Nutrition Institute (WHO's contribution) . . . . .	WHA35.12	-	300 000	-	300 000
<b>Regional Office for South-East Asia</b>					
Extension of Regional Office building . . . . .	WHA24.25	137 331	-	-	137 331
Fire-fighting equipment and emergency generator . . . . .	WHA28.26	63 172	-	-	63 172
Installation of new telephone exchange . . . . .	Dec.EB63(8)	96 536	15 543	11 945	124 024
Extension of Regional Office building, including new air-conditioning plant and electrical substation . . . . .	WHA34.12	2 452	538 523	134 025	675 000
Additional stand-by generator . . . . .	WHA35.12	-	65 489	29 511	95 000
<b>Regional Office for Europe</b>					
<b>Renovation of additional premises:</b>	WHA27.15 and WHA29.28				
39 Strandpromenaden . . . . .		93 213	-	-	93 213
33 Strandpromenaden . . . . .	Dec.EB63(8)	91 546	-	-	91 546
Installation of new telephone exchange . . . . .	WHA29.28	190 000	-	-	190 000
Preliminary architectural study for extension of Regional Office building . . . . .	WHA34.12	63 707	-	-	63 707
Lift and toilet facilities for disabled persons in the Regional Office . . . . .	WHA34.12	1 742	30 885	5 735	38 362



Purpose	Relevant authorization (resolution/decision)	Obligations			Total
		1 January 1970 - 31 December 1981	1982-1983	1984-1985 <sup>a</sup>	
<u>Regional Office for the Eastern Mediterranean</u>					
Extension of Regional Office building . . . . .	WHA25.40	39 634	-	-	39 634
Additional extension of Regional Office building	WHA38.9	-	-	190 000	190 000
<u>Regional Office for the Western Pacific</u>					
Installation of fire detection and control equipment . . . . .	WHA27.16	25 097	-	-	25 097
Extension of Regional Office building . . . . .	WHA29.28	537 437	-	-	537 437
Additional extension of Regional Office building . . . . .	WHA33.15	1 038 350	51 791	-	1 090 141
<u>Total acquisition of land, construction/extension of buildings</u>		<u>9 709 316</u>	<u>1 619 468</u>	<u>4 165 006</u>	<u>15 493 790</u>
<u>TOTAL OBLIGATIONS AND EXPECTED OBLIGATIONS</u>		<u>12 459 193</u>	<u>3 192 167</u>	<u>6 656 084</u>	<u>22 307 444</u>

<sup>a</sup> - Estimated.

ANNEX 6

AMENDMENT TO THE SCALE OF ASSESSMENTS TO BE APPLIED TO THE SECOND  
YEAR OF THE FINANCIAL PERIOD 1986-1987<sup>1</sup>

[EB77/34 - 9 January 1986]

1. Financial Regulation 5.3 provides that "The Health Assembly shall adopt a total budget level and scale of assessments for the following financial period. The assessed contributions of Members based on the scale of assessments shall be divided into two equal annual instalments, the first of which shall relate to the first year and the second of which shall relate to the second year of the financial period. In the first year of the financial period, the Health Assembly may decide to amend the scale of assessments to be applied to the second year of the financial period".

2. By resolution WHA38.7,<sup>2</sup> the Thirty-eighth World Health Assembly (May 1985) adopted a scale of assessments for the full financial period 1986-1987 which was based on the latest available United Nations scale of assessments, namely, the scale for the years 1983 to 1985 approved by the United Nations General Assembly in resolution 37/125 (December 1982).

3. In December 1985, by resolution 40/248, the United Nations General Assembly adopted a United Nations scale of assessments for the period 1986-1988 containing significant changes as compared with the preceding United Nations scale. In the new scale, the assessments of 35 countries are increased and those of 27 countries are decreased. The increases range from 0.5% to 100% and the decreases from 0.5% to 50% of the assessments for 1983 to 1985 of the countries concerned.

4. Since, pursuant to resolution WHA24.12 of the Twenty-fourth World Health Assembly (May 1971), the latest available United Nations scale of assessments is to be used as a basis for determining WHO's scale of assessments, the next WHO scale of assessments, i.e., that for the financial period 1988-1989, will be calculated on the basis of the United Nations scale for 1986-1988 and will thus result in changes in individual countries' assessments of the same order of magnitude as those reflected in the United Nations scale for 1986-1988.

5. In view of Financial Regulation 5.3, which, as indicated above, states that the Health Assembly may decide to amend the scale of assessments to be applied to the second year of the financial period, the Health Assembly may wish to consider whether or not the scale to be applied to 1987, i.e., the second year of the financial period 1986-1987, should be amended.

6. The following table shows the WHO scale of assessments adopted for 1986-1987, the instalments relating to 1987 payable by Members in respect of their assessed contributions for the financial period 1986-1987, the new United Nations scale of assessments for 1986-1988, the WHO scale of assessments amended on the basis of the United Nations scale for 1986-1988, and the instalments relating to 1987 that Members would have to pay if the WHO scale were amended by the Health Assembly.

7. If the Health Assembly should decide not to amend the WHO scale of assessments to be applied to 1987, as already approved for 1986-1987 in resolution WHA38.7, the changes in individual countries' assessments introduced in the United Nations scale of assessments for 1986-1988 would be reflected for the first time in the WHO scale of assessments for 1988-1989 to be adopted by the Health Assembly in 1987.

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<sup>1</sup> See resolution EB77.R10.

<sup>2</sup> Document WHA38/1985/REC/1, p. 3.



8. On the other hand, if the Health Assembly should decide to amend the scale of assessments to be applied to the second year of the financial period 1986-1987, it would be necessary to amend the Appropriation Resolution for that financial period adopted by the Thirty-eighth World Health Assembly (resolution WHA38.32).<sup>1</sup> While the approved effective working budget (appropriation sections 1-5) as well as appropriation section 6 (Transfer to Tax Equalization Fund) would remain unchanged, it would be necessary to reduce the total budget to reflect a corresponding reduction in appropriation section 7 (Undistributed reserve), since decreases in the assessments of two of the Members included therein - namely, the Byelorussian SSR and the Ukrainian SSR - resulting from decreases in their assessments in the new United Nations scale of assessments exceed the increase in the assessment of the third such Member, i.e., South Africa.

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<sup>1</sup> Document WHA38/1985/REC/1, p. 26.

This table shows: (1) WHO scale of assessments adopted for 1986-1987; (2) instalments relating to 1987 payable by Members in respect of their assessed contributions for the financial period 1986-1987; (3) approved United Nations scale of assessments for 1986-1988; (4) WHO scale of assessments amended on the basis of the new United Nations scale for 1986-1988; and (5) instalments relating to 1987 payable by Members on the basis of amended WHO scale

Members and Associate Members	Adopted WHO scale 1986-1987		UN scale for 1986-1988	WHO scale amended on basis of new UN scale for 1986-1988	
	% (1)	Instalments relating to 1987 - US \$ (2)	% (3)	% (4)	Instalments relating to 1987 - US \$ (5)
Afghanistan	0.01	24 575	0.01	0.01	24 570
Albania	0.01	24 575	0.01	0.01	24 570
Algeria	0.13	319 500	0.14	0.14	343 970
Angola	0.01	24 575	0.01	0.01	24 570
Antigua and Barbuda	0.01	24 575	0.01	0.01	24 570
Argentina	0.70	1 720 380	0.62	0.61	1 498 730
Australia	1.54	3 784 840	1.66	1.63	4 004 800
Austria	0.74	1 818 690	0.74	0.72	1 768 990
Bahamas	0.01	24 575	0.01	0.01	24 570
Bahrain	0.01	24 575	0.02	0.02	49 140
Bangladesh	0.03	73 735	0.02	0.02	49 140
Barbados	0.01	24 575	0.01	0.01	24 570
Belgium	1.26	3 096 685	1.18	1.16	2 850 045
Benin	0.01	24 575	0.01	0.01	24 570
Bhutan	0.01	24 575	0.01	0.01	24 570
Bolivia	0.01	24 575	0.01	0.01	24 570
Botswana	0.01	24 575	0.01	0.01	24 570
Brazil	1.36	3 342 455	1.40	1.37	3 366 000
Brunei Darussalam	0.03	73 735	0.04	0.04	98 275
Bulgaria	0.18	442 385	0.16	0.16	393 110
Burkina Faso	0.01	24 575	0.01	0.01	24 570
Burma	0.01	24 575	0.01	0.01	24 570
Burundi	0.01	24 575	0.01	0.01	24 570
Byelorussian Soviet Socialist Republic	0.35	860 190	0.34	0.33	810 790
Cameroon	0.01	24 575	0.01	0.01	24 570
Canada	3.02	7 435 215	3.06	3.00	7 383 800
Cape Verde	0.01	24 575	0.01	0.01	24 570
Central African Republic	0.01	24 575	0.01	0.01	24 570
Chad	0.01	24 575	0.01	0.01	24 570
Chile	0.07	172 040	0.07	0.07	171 985
China	0.86	2 113 610	0.79	0.77	1 891 840
Colombia	0.11	270 345	0.13	0.13	319 400
Comoros	0.01	24 575	0.01	0.01	24 570
Congo	0.01	21 575	0.01	0.01	21 570
Cook Islands	0.01	24 575	0.01	0.01	24 570
Costa Rica	0.02	49 155	0.02	0.02	49 140
Côte d'Ivoire	0.03	73 735	0.02	0.02	49 140
Cuba	0.09	221 195	0.09	0.09	221 125
Cyprus	0.01	24 575	0.02	0.02	49 140
Czechoslovakia	0.74	1 818 690	0.70	0.69	1 695 285
Democratic Kampuchea	0.01	24 575	0.01	0.01	24 570
Democratic People's Republic of Korea	0.05	122 885	0.05	0.05	122 845
Democratic Yemen	0.01	36 075	0.01	0.01	36 070
Denmark	0.74	1 818 690	0.72	0.71	1 744 425
Djibouti	0.01	24 575	0.01	0.01	24 570
Dominica	0.01	24 575	0.01	0.01	24 570
Dominican Republic	0.03	73 735	0.03	0.03	73 705
Ecuador	0.02	49 155	0.03	0.03	73 705
Egypt	0.07	172 040	0.07	0.07	171 985
El Salvador	0.01	24 575	0.01	0.01	24 570
Equatorial Guinea	0.01	24 575	0.01	0.01	24 570
Ethiopia	0.01	24 575	0.01	0.01	24 570
Fiji	0.01	24 575	0.01	0.01	24 570
Finland	0.47	1 155 115	0.50	0.49	1 203 895
France	6.39	15 998 120	6.37	6.25	15 649 340
Gabon	0.02	49 155	0.03	0.03	73 705
Gambia	0.01	24 575	0.01	0.01	24 570
German Democratic Republic	1.36	3 342 455	1.33	1.30	3 194 015
Germany, Federal Republic of	8.38	20 595 415	8.26	8.10	19 901 170
Ghana	0.02	49 155	0.01	0.01	24 570



Members and Associate Members	Adopted WHO scale 1986-1987		UN scale for 1986-1988	WHO scale amended on basis of new UN scale for 1986-1988	
	% (1)	Instalments relating to 1987 - US \$ (2)	% (3)	% (4)	Instalments relating to 1987 - US \$ (5)
Greece	0.39	958 500	0.44	0.43	1 056 480
Grenada	0.01	24 575	0.01	0.01	24 570
Guatemala	0.02	49 155	0.02	0.02	49 140
Guinea	0.01	24 575	0.01	0.01	24 570
Guinea-Bissau	0.01	24 575	0.01	0.01	24 570
Guyana	0.01	24 575	0.01	0.01	24 570
Haiti	0.01	24 575	0.01	0.01	24 570
Honduras	0.01	24 575	0.01	0.01	24 570
Hungary	0.22	540 695	0.22	0.21	515 955
Iceland	0.03	73 735	0.03	0.03	73 705
India	0.35	860 190	0.35	0.34	835 355
Indonesia	0.13	319 500	0.14	0.14	343 970
Iran (Islamic Republic of)	0.57	1 400 885	0.63	0.62	1 523 300
Iraq	0.12	294 925	0.12	0.12	294 830
Ireland	0.18	442 385	0.18	0.18	442 245
Israel	0.22	540 695	0.22	0.21	515 955
Italy	3.67	9 019 715	3.79	3.72	9 139 800
Jamaica	0.02	49 155	0.02	0.02	49 140
Japan	10.13	24 896 365	10.84	10.64	26 141 780
Jordan	0.01	24 575	0.01	0.01	24 570
Kenya	0.01	24 575	0.01	0.01	24 570
Kiribati	0.01	24 575	0.01	0.01	24 570
Kuwait	0.24	589 845	0.29	0.28	687 940
Lao People's Democratic Republic	0.01	24 575	0.01	0.01	24 570
Lebanon	0.02	49 155	0.01	0.01	24 570
Lesotho	0.01	24 575	0.01	0.01	24 570
Liberia	0.01	24 575	0.01	0.01	24 570
Libyan Arab Jamahiriya	0.25	614 425	0.26	0.25	614 235
Luxembourg	0.06	147 465	0.05	0.05	122 845
Madagascar	0.01	24 575	0.01	0.01	24 570
Malawi	0.01	24 575	0.01	0.01	24 570
Malaysia	0.09	221 195	0.10	0.10	245 695
Maldives	0.01	24 575	0.01	0.01	24 570
Mali	0.01	24 575	0.01	0.01	24 570
Malta	0.01	24 575	0.01	0.01	24 570
Mauritania	0.01	24 575	0.01	0.01	24 570
Mauritius	0.01	24 575	0.01	0.01	24 570
Mexico	0.86	2 113 610	0.89	0.87	2 137 530
Monaco	0.01	24 575	0.01	0.01	24 570
Mongolia	0.01	24 575	0.01	0.01	24 570
Morocco	0.05	122 885	0.05	0.05	122 845
Mozambique	0.01	24 575	0.01	0.01	24 570
Namibia	0.01	24 575	0.01	0.01	24 570
Nepal	0.01	24 575	0.01	0.01	24 570
Netherlands	1.75	4 300 955	1.74	1.71	4 201 355
New Zealand	0.25	614 425	0.24	0.23	565 095
Nicaragua	0.01	24 575	0.01	0.01	24 570
Niger	0.01	24 575	0.01	0.01	24 570
Nigeria	0.19	466 960	0.19	0.19	466 815
Norway	0.50	1 228 845	0.54	0.53	1 302 175
Oman	0.01	24 575	0.02	0.02	49 140
Pakistan	0.06	147 465	0.06	0.06	147 415
Panama	0.02	49 155	0.02	0.02	49 140
Papua New Guinea	0.01	24 575	0.01	0.01	24 570
Paraguay	0.01	24 575	0.02	0.02	49 140
Peru	0.07	172 040	0.07	0.07	171 985
Philippines	0.09	221 195	0.10	0.10	245 695
Poland	0.71	1 744 960	0.64	0.63	1 547 870
Portugal	0.18	442 385	0.18	0.18	442 245
Qatar	0.03	73 735	0.04	0.04	98 275
Republic of Korea	0.18	442 385	0.20	0.19	466 815
Romania	0.19	466 960	0.19	0.19	466 815
Rwanda	0.01	24 575	0.01	0.01	24 570
Saint Christopher and Nevis	0.01	24 575	0.01	0.01	24 570
Saint Lucia	0.01	24 575	0.01	0.01	24 570
Saint Vincent and the Grenadines	0.01	24 575	0.01	0.01	24 570
Samoa	0.01	24 575	0.01	0.01	24 570

Members and Associate Members	Adopted WHO scale 1986-1987		UN scale for 1986-1988	WHO scale amended on basis of new UN scale for 1986-1988	
	% (1)	Instalments relating to 1987 - US \$ (2)	% (3)	% (4)	Instalments relating to 1987 - US \$ (5)
San Marino	0.01	24 575	0.01	0.01	24 570
Sao Tome and Principe	0.01	24 575	0.01	0.01	24 570
Saudi Arabia	0.84	2 064 460	0.97	0.95	2 334 085
Senegal	0.01	24 575	0.01	0.01	24 570
Seychelles	0.01	24 575	0.01	0.01	24 570
Sierra Leone	0.01	24 575	0.01	0.01	24 570
Singapore	0.09	221 195	0.10	0.10	245 695
Solomon Islands	0.01	24 575	0.01	0.01	24 570
Somalia	0.01	24 575	0.01	0.01	24 570
South Africa	0.40	983 090	0.44	0.43	1 056 480
Spain	1.89	4 645 030	2.03	1.99	4 889 300
Sri Lanka	0.01	24 575	0.01	0.01	24 570
Sudan	0.01	24 575	0.01	0.01	24 570
Suriname	0.01	24 575	0.01	0.01	24 570
Swaziland	0.01	24 575	0.01	0.01	24 570
Sweden	1.29	3 170 420	1.25	1.23	3 022 030
Switzerland	1.08	2 654 305	1.12	1.10	2 702 625
Syrian Arab Republic	0.03	73 735	0.04	0.04	98 275
Thailand	0.08	196 615	0.09	0.09	221 125
Togo	0.01	24 575	0.01	0.01	24 570
Tonga	0.01	24 575	0.01	0.01	24 570
Trinidad and Tobago	0.03	73 735	0.04	0.04	98 275
Tunisia	0.03	73 735	0.03	0.03	73 705
Turkey	0.31	761 885	0.34	0.33	810 790
Uganda	0.01	24 575	0.01	0.01	24 570
Ukrainian Soviet Socialist Republic	1.29	3 170 420	1.28	1.25	3 071 130
Union of Soviet Socialist Republics	10.34	25 412 480	10.20	10.01	24 593 920
United Arab Emirates	0.16	393 230	0.18	0.18	442 245
United Kingdom of Great Britain and Northern Ireland	4.58	11 256 210	4.86	4.77	11 719 580
United Republic of Tanzania	0.01	29 575	0.01	0.01	29 570
United States of America	25.00	62 797 675	25.00	25.00	62 778 850
Uruguay	0.04	98 310	0.04	0.04	98 275
Vanuatu	0.01	24 575	0.01	0.01	24 570
Venezuela	0.54	1 327 155	0.60	0.59	1 449 590
Viet Nam	0.02	49 155	0.01	0.01	24 570
Yemen	0.01	24 575	0.01	0.01	24 570
Yugoslavia	0.45	1 105 960	0.46	0.45	1 105 620
Zaire	0.01	24 575	0.01	0.01	24 570
Zambia	0.01	24 575	0.01	0.01	24 570
Zimbabwe	0.02	49 155	0.02	0.02	49 140
Total	100.00	247 444 200	101.42	100.00	247 368 900



ANNEX 7

STATUS OF COLLECTION OF ASSESSED CONTRIBUTIONS  
AND STATUS OF ADVANCES TO THE WORKING CAPITAL FUND<sup>1</sup>

[EB77/32 - 10 January 1986]

Report by the Director-General

Introduction

1. At its seventy-fifth session in January 1985, when considering the action to be taken in respect of those Members which were in arrears in the payment of their contributions to an extent which may invoke Article 7 of the Constitution, the Executive Board expressed considerable concern at the increasing delays in payment of assessed contributions by Member States and requested the Director-General to report comprehensively on the pattern of payment of contributions at a future session.<sup>2</sup> This report responds to that request.

Financial Regulations

2. Financial Regulation 5.6, which stipulates the timing of payment of assessed contributions and advances to the Working Capital Fund, reads as follows:

Instalments of contributions and advances shall be considered as due and payable in full within thirty days of the receipt of the communication of the Director-General referred to in regulation 5.4 or 5.5 above, or as of the first day of the year to which they relate, whichever is the later. As of 1 January of the following year, the unpaid balance of such contributions and advances shall be considered to be one year in arrears.

3. Financial Regulation 5.4 reads as follows:

After the Health Assembly has adopted the budget and determined the amount of the Working Capital Fund, the Director-General shall:

- (a) Transmit the relevant documents to Members;
- (b) Inform Members of their commitments in respect of contributions for the financial period and advances to the Working Capital Fund;
- (c) Request them to remit the first and second instalments of their contributions for the financial period together with their advances, if any, to the Working Capital Fund.

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<sup>1</sup> See resolution EB77.R13.

<sup>2</sup> Document EB75/1985/REC/2, pp. 309-312.

Action taken by the Director-General to request timely payment of contributions

4. In June of every year in which the Health Assembly adopts a budget and scale of assessments for the financial period commencing on 1 January of the following year, the Director-General, pursuant to Financial Regulation 5.4, informs all Member States of the contributions that they are required to pay in respect of that financial period. In the month of June of the first year of the financial period, the Director-General either confirms the amount notified earlier in respect of the second year of the financial period or, if the Health Assembly should decide to amend the scale of assessments applicable to the second year of the financial period, notifies Member States of the revised amounts payable in that second year. During the course of each year, monthly statements showing the status of collection of annual contributions and of advances to the Working Capital Fund are sent to all Member States, to all addressees in the WHO official list of addresses. Each letter of acknowledgement of receipt for part payment of current or prior years' contributions shows complete details of amounts remaining unpaid.

5. In May of each year the Director-General reports to the Health Assembly on the payment status of Member States' contributions. In April, September, October and December, letters, telexes or cables are sent to all indebted Member States, either to addressees in the WHO official list of addresses or to selected officials, requesting prompt payment of unpaid contributions. Apart from the above reminder schedule which applies to all Member States, the Director-General also sends additional letters, telexes and cables to those Member States which are potentially in danger of losing their voting privileges at a future session of the Health Assembly. These communications are sent in February, March, May and November.

Historical analysis of the pattern of payment of contributions

6. The following table lists, in percentage terms, the rate of collection by year-end of assessed current year contributions for the effective working budget over the 10-year period 1976 to 1985:

	<u>Rate of collection of contributions due in current year in respect of the effective working budget (%)</u>
31 December 1976	91.15
31 December 1977	92.98
31 December 1978	96.34
31 December 1979	98.04
31 December 1980	94.42
31 December 1981	85.49
31 December 1982	94.07
31 December 1983	94.92
31 December 1984	93.88
31 December 1985	90.90

7. The following table covering the same period lists the number of Members which, by year-end, had fully paid, partly paid or made no payment towards assessed current year contributions for the effective working budget:



Payment status of Member States in  
respect of current year contributions  
to the effective working budget

	Number of Members which had paid contri- butions in full	Number of Members which had paid contri- butions in part	Number of Members which had made no payment	Total number of Members
31 December 1976	98	30	15	143
31 December 1977	108	24	16	148
31 December 1978	106	23	19	148
31 December 1979	114	15	20	149
31 December 1980	97	41	11	149
31 December 1981	102	24	27	153
31 December 1982	84	28	42	154
31 December 1983	86	23	45	154
31 December 1984	84	25	49	158
31 December 1985	83	27	48	158

8. The above indicates a clear trend in the decreasing number of Member States which pay their contributions in full by year-end and the increasing number of Member States which make no payment towards their current year contributions by year-end. Over the 10-year period, 87 Member States had not made any payment towards their current year contribution in the year in which these contributions were due in at least one of the 10 years, representing some 55% of the Members currently contributing to the effective working budget of WHO. Whereas the majority of these Member States were only occasionally unable to pay their contributions prior to the end of the calendar year, a substantial number had systematically made no payment towards their current year contributions, as follows:

(a) During the 10-year period 1976 to 1985, the four Member States listed below had systematically, throughout the 10-year period, not made any payment toward their current year contributions by year-end:

Central African Republic	Dominican Republic
Democratic Kampuchea	Grenada

(b) During the five-year period 1981 to 1985, in addition to the Member States referred to in (a) above, the 10 Member States listed below had systematically, throughout the five-year period, not made any payment toward their current year contributions by year-end:

Brazil	Mali
Comoros	Nicaragua
Guinea-Bissau	Paraguay
Iran (Islamic Republic of)	Romania
Iraq	Sierra Leone

(c) Similarly, during the three-year period 1983 to 1985, in addition to the Member States referred to in (a) and (b) above, the 13 Member States listed below had systematically, throughout the three-year period, not made any payment toward their current year contributions by year-end:

Benin	Mauritania
Burundi	Peru
Cape Verde	Saint Lucia
El Salvador	Somalia
Gambia	United Arab Emirates
Guatemala	Zaire
Guinea	

9. The following table lists in percentage terms the rate of collection of assessed current year contributions for the effective working budget at the end of each of the first three quarters over the 10-year period 1976 to 1985:

Year	Rate of collection of contributions due in current year in respect of the effective working budget (%)		
	End March	End June	End September
1976	13.37	41.83	70.99
1977	26.52	52.56	69.98
1978	24.41	57.29	76.82
1979	18.06	43.32	77.66
1980	26.13	51.32	72.99
1981	17.36	45.40	57.74
1982	21.73	41.12	61.37
1983	22.49	46.05	50.83
1984	12.65	47.92	58.09
1985	10.21	44.20	56.16

The above illustrates the increasing delays in payment during the year, as reflected particularly in the rates of collection by end-March and end-September.

10. The 25 Member States which have the highest assessment rates for the effective working budget in the approved 1986-1987 scale of assessments of WHO collectively contribute 89.80% of the total percentage assessments. Appendix 1 lists the dollar amounts remaining due in respect of current years' assessments for the effective working budget from each of these 25 Member States and collectively from the remaining Member States at the end of each of the five years 1981 to 1985. Appendix 2 lists the percentages of individual and collective current years' assessments that these dollar amounts represent. These tables indicate that:

(a) The total amount due at year-end from the 25 largest contributors has been significantly greater than that due from the remaining contributors, although in recent years the amounts due from the remaining contributors and the percentages that these amounts represent of their collective assessments is significantly higher than the corresponding figures for 1981;

(b) Amongst the 25 largest contributors, the three Member States which have consistently owed all, or virtually all, of their current year assessment at the end of the year in which it was due, in addition to any contributions remaining due from prior years, are Brazil, the Islamic Republic of Iran, and Poland.

11. Appendices 3, 4 and 5 list the percentages of assessments remaining unpaid from the 25 largest contributors individually and the remaining Member States collectively at the end of the first quarter, second quarter and third quarter respectively, for each of the five years 1981 to 1985. These tables indicate that:



- (a) The large majority of the 25 largest contributors had consistently made no payment towards their current year assessment by the end of the first quarter and that in 1985 the 25 Member States taken together then owed 91.29% of their collective assessments for that year, the highest unpaid percentage from these Members for that quarter during the five-year period (Appendix 3);
- (b) Only four of the 25 largest contributors had consistently paid their current year contributions in full by mid-year in each of the five years (Appendix 4);
- (c) The collective unpaid contributions at mid-year of Member States other than the 25 largest contributors had increased substantially in recent years from 34.43% in 1981 to 55.31% in 1985 (Appendix 4);
- (d) At the end of the third quarter of 1985, the 25 largest contributors together owed 45.04% of their collective assessments for that year as compared with the corresponding figure of 30.34% applicable to the other Member States (Appendix 5).

Measures considered by the United Nations or specialized agencies to alleviate financial difficulties caused by delayed payment of contributions

12. The United Nations and other specialized agencies have experienced similar delays in payment of contributions by Member States. Many alternative courses of action have been considered by these organizations, including the following:

(a) An increase in the level of the Working Capital Fund. In the report of the United Nations Advisory Committee on Administrative and Budgetary Questions dated 18 October 1985,<sup>1</sup> the ratio of the established level of the Working Capital Fund of WHO to half of the gross budget for 1986-1987, i.e. 3.7%, was the lowest amongst the United Nations and those of its specialized agencies which had working capital funds. The corresponding ratios of the four other organizations which had a 1986 assessed contribution level in excess of US\$ 100 million were as follows:

	<u>Working Capital Fund level expressed as percentage of 1986 gross budget</u>
United Nations	11.5
ILO	18.2
FAO	5.2
UNESCO	10.7

(b) The granting of authority to the executive heads of organizations to borrow funds from commercial concerns when no further recourse could be had to the Working Capital Fund or other internal cash resources. The International Labour Organisation (ILO) has been granted such authority, which has been exercised on several occasions;

(c) The charging of interest to Member States whose contributions in respect of the effective working budget are delayed. This principle is applied in two specialized agencies - the International Telecommunication Union (ITU) and the Universal Postal Union (UPU). Member States which do not pay their contributions by 1 January of the year to which they relate are charged interest at the rate of 3% per annum for the first six months and 6% per annum thereafter.

<sup>1</sup> United Nations General Assembly document A/40/769, pp. 8 and 15.

Conclusions

13. The Working Capital Fund was established to cover temporary cash deficits. In recent years, despite increased delays in the payment of contributions by Member States, these cash deficits have not arisen. This has been due primarily to the savings accruing during the financial period as a result of favourable rates of exchange. These exceptional circumstances may not prevail in the foreseeable future. Thus it may become necessary to borrow cash not only from the Working Capital Fund but also from other internal cash resources. If the past delays in the payment of contributions were to continue in the future, these internal cash resources would not be able to meet the various demands placed on them. The only positive way of ensuring sound financing for the Organization is for Member States to pay their assessed contributions promptly. In the event that there were to be continuing delays in payment of contributions in the future, the Director-General would have no alternative but to request a substantial increase in the level of the Working Capital Fund in order to ensure that the programme of work adopted by the World Health Assembly is fully implemented.



## Appendix 1

CURRENT YEAR CONTRIBUTIONS TO THE EFFECTIVE WORKING BUDGET  
REMAINING UNPAID BY 31 DECEMBER OF EACH OF THE YEARS 1981 TO 1985  
(Expressed in US dollars)

Member State	Dollar amount unpaid at 31 December				
	1981	1982	1983	1984	1985
<b>I. <u>Twenty-five largest contributors</u></b>					
Argentina	-	-	-	1 645 840	1 645 840
Australia	-	-	-	-	-
Austria	-	-	-	-	-
Belgium	106 398	24 584	233 455	-	2 962 515
Brazil	2 703 350	2 812 085	2 812 085	3 197 635	3 197 635
Canada	4	-	-	-	-
China	75 297	75 297	-	-	-
Czechoslovakia	-	-	-	-	-
Denmark	-	-	-	-	-
France	-	-	-	-	-
German Democratic Republic	-	-	-	-	-
Germany, Federal Republic of	-	-	-	-	-
Iran (Islamic Republic of)	1 384 115	1 439 790	1 439 790	1 340 185	1 340 185
Italy	1 903 191	737 738	293 339	40 959	-
Japan	-	-	-	-	-
Mexico	38 321	3 775	-	140 243	401 453
Netherlands	-	-	-	-	-
Poland	2 638 470	2 744 595	2 736 925	1 669 355	1 669 355
Saudi Arabia	-	1 282 310	-	-	-
Spain	3 611 675	-	8 240	-	-
Sweden	-	-	-	-	-
Switzerland	-	-	-	-	-
Union of Soviet Socialist Republics	-	60	-	-	28 600
United Kingdom of Great Britain and Northern Ireland	-	-	-	-	-
United States of America	16 399 983	-	-	-	5 828 000
<b>Twenty-five largest contributors</b>	<b>28 860 804</b>	<b>9 120 234</b>	<b>7 523 834</b>	<b>8 034 217</b>	<b>17 073 583</b>
<b>II. Other Member States</b>	<b>2 355 692</b>	<b>4 178 550</b>	<b>3 803 452</b>	<b>6 247 029</b>	<b>4 153 657</b>
<b>III. All Member States</b>	<b>31 216 496</b>	<b>13 298 784</b>	<b>11 327 286</b>	<b>14 281 246</b>	<b>21 227 240</b>

## Appendix 2

CURRENT YEAR CONTRIBUTIONS TO THE EFFECTIVE WORKING BUDGET  
REMAINING UNPAID BY 31 DECEMBER OF EACH OF THE YEARS 1981 TO 1985  
(Expressed in percentages of assessed contributions)

Member State	Percentage of current year assessment unpaid at 31 December				
	1981	1982	1983	1984	1985
<b>I. <u>Twenty-five largest contributors</u></b>					
Argentina	-	-	-	100.00	100.00
Australia	-	-	-	-	-
Austria	-	-	-	-	-
Belgium	4.10	0.91	8.65	-	100.00
Brazil	100.00	100.00	100.00	100.00	100.00
Canada	-	-	-	-	-
China	2.19	2.11	-	-	-
Czechoslovakia	-	-	-	-	-
Denmark	-	-	-	-	-
France	-	-	-	-	-
German Democratic Republic	-	-	-	-	-
Germany, Federal Republic of	-	-	-	-	-
Iran (Islamic Republic of)	100.00	100.00	100.00	100.00	100.00
Italy	25.96	9.67	3.85	0.47	-
Japan	-	-	-	-	-
Mexico	2.36	0.22	-	6.94	19.85
Netherlands	-	-	-	-	-
Poland	100.00	100.00	99.72	100.00	100.00
Saudi Arabia	-	100.00	-	-	-
Spain	100.00	-	0.22	-	-
Sweden	-	-	-	-	-
Switzerland	-	-	-	-	-
Union of Soviet Socialist Republics	-	-	-	-	0.12
United Kingdom of Great Britain and Northern Ireland	-	-	-	-	-
United States of America	28.50	-	-	-	9.53
<b>Twenty-five largest contributors</b>	<b>14.61</b>	<b>4.43</b>	<b>3.68</b>	<b>3.75</b>	<b>7.97</b>
<b>II. Other Member States</b>	<b>13.38</b>	<b>22.77</b>	<b>20.73</b>	<b>32.85</b>	<b>21.84</b>
<b>III. All Member States</b>	<b>14.51</b>	<b>5.93</b>	<b>5.08</b>	<b>6.12</b>	<b>9.10</b>



## Appendix 3

CURRENT YEAR CONTRIBUTIONS TO THE EFFECTIVE WORKING BUDGET  
REMAINING UNPAID BY 31 MARCH OF EACH OF THE YEARS 1981 TO 1985  
(Expressed in percentages of assessed contributions)

Member State	Percentage of current year assessment unpaid at 31 March				
	1981	1982	1983	1984	1985
<b>I. <u>Twenty-five largest contributors</u></b>					
Argentina	100.00	100.00	100.00	99.82	100.00
Australia	50.00	50.00	50.37	50.00	50.00
Austria	-	-	100.00	91.29	80.84
Belgium	100.00	100.00	100.00	100.00	100.00
Brazil	100.00	100.00	100.00	100.00	100.00
Canada	-	-	0.16	-	-
China	100.00	100.00	96.63	100.00	100.00
Czechoslovakia	100.00	100.00	99.94	100.00	100.00
Denmark	-	-	-	-	-
France	100.00	-	-	100.00	100.00
German Democratic Republic	100.00	51.33	100.00	100.00	100.00
Germany, Federal Republic of	64.82	51.19	55.35	55.26	100.00
Iran (Islamic Republic of)	100.00	100.00	100.00	100.00	100.00
Italy	99.88	49.54	3.85	100.00	100.00
Japan	100.00	100.00	100.00	100.00	100.00
Mexico	100.00	100.00	99.91	100.00	100.00
Netherlands	-	100.00	0.29	-	50.00
Poland	100.00	100.00	100.00	100.00	100.00
Saudi Arabia	-	100.00	100.00	100.00	100.00
Spain	100.00	100.00	100.00	100.00	100.00
Sweden	51.70	72.18	57.86	-	-
Switzerland	100.00	-	100.00	100.00	-
Union of Soviet Socialist Republics	100.00	100.00	99.89	100.00	100.00
United Kingdom of Great Britain and Northern Ireland	100.00	100.00	99.96	100.00	100.00
United States of America	87.56	100.00	100.00	100.00	100.00
<b>Twenty-five largest contributors</b>	<b>84.09</b>	<b>78.56</b>	<b>77.67</b>	<b>87.48</b>	<b>91.29</b>
<b>II. Other Member States</b>	<b>66.34</b>	<b>75.03</b>	<b>75.74</b>	<b>85.93</b>	<b>72.90</b>
<b>III. All Member States</b>	<b>82.64</b>	<b>78.27</b>	<b>77.51</b>	<b>87.35</b>	<b>89.79</b>

## Appendix 4

CURRENT YEAR CONTRIBUTIONS TO THE EFFECTIVE WORKING BUDGET  
REMAINING UNPAID BY 30 JUNE OF EACH OF THE YEARS 1981 TO 1985  
(Expressed in percentages of assessed contributions)

Member State	Percentage of current year assessment unpaid at 30 June				
	1981	1982	1983	1984	1985
<b>I. <u>Twenty-five largest contributors</u></b>					
Argentina	-	100.00	-	100.00	100.00
Australia	50.00	50.00	50.37	50.00	50.00
Austria	-	-	-	23.84	68.99
Belgium	19.71	7.39	9.34	100.00	100.00
Brazil	100.00	100.00	100.00	100.00	100.00
Canada	-	-	-	-	-
China	2.19	2.11	2.11	-	-
Czechoslovakia	50.00	100.00	99.94	50.00	50.00
Denmark	-	-	-	-	-
France	100.00	-	-	-	-
German Democratic Republic	49.37	51.33	100.00	51.53	49.96
Germany, Federal Republic of	64.82	51.19	55.35	7.78	69.20
Iran (Islamic Republic of)	100.00	100.00	100.00	100.00	100.00
Italy	99.88	49.54	3.85	6.25	12.74
Japan	-	-	-	-	-
Mexico	100.00	100.00	-	6.94	100.00
Netherlands	-	-	-	-	25.00
Poland	100.00	100.00	100.00	100.00	100.00
Saudi Arabia	-	100.00	100.00	100.00	-
Spain	100.00	100.00	0.22	100.00	-
Sweden	51.70	72.18	57.86	-	-
Switzerland	-	-	56.84	-	-
Union of Soviet Socialist Republics	100.00	100.00	95.14	100.00	100.00
United Kingdom of Great Britain and Northern Ireland	-	-	-	-	-
United States of America	64.77	100.00	100.00	100.00	100.00
Twenty-five largest contributors	56.40	58.83	54.29	51.23	55.84
<b>II. Other Member States</b>	34.43	59.40	50.18	61.68	55.31
<b>III. All Member States</b>	54.60	58.88	53.95	52.08	55.80



## Appendix 5

CURRENT YEAR CONTRIBUTIONS TO THE EFFECTIVE WORKING BUDGET  
REMAINING UNPAID BY 30 SEPTEMBER OF EACH OF THE YEARS 1981 TO 1985  
(Expressed in percentages of assessed contributions)

Member State	Percentage of current year assessment unpaid at 30 September				
	1981	1982	1983	1984	1985
<u>I. Twenty-five largest contributors</u>					
Argentina	-	-	-	100.00	100.00
Australia	-	-	-	-	-
Austria	-	-	-	13.72	28.28
Belgium	19.71	4.16	9.34	15.90	100.00
Brazil	100.00	100.00	100.00	100.00	100.00
Canada	-	-	-	-	-
China	2.19	2.11	2.11	-	-
Czechoslovakia	50.00	50.00	49.94	50.00	50.00
Denmark	-	-	-	-	-
France	36.93	-	-	-	-
German Democratic Republic	-	-	51.43	51.53	-
Germany, Federal Republic of	64.82	51.19	55.35	7.78	36.96
Iran (Islamic Republic of)	100.00	100.00	100.00	100.00	100.00
Italy	25.96	27.82	3.85	6.25	12.74
Japan	-	-	-	-	-
Mexico	2.36	0.22	-	6.94	19.85
Netherlands	-	-	-	-	-
Poland	100.00	100.00	100.00	100.00	100.00
Saudi Arabia	-	100.00	-	-	-
Spain	100.00	-	0.22	-	-
Sweden	-	-	0.12	-	-
Switzerland	-	-	56.84	-	-
Union of Soviet Socialist Republics	78.81	59.26	95.14	58.91	58.91
United Kingdom of Great Britain and Northern Ireland	-	-	-	-	-
United States of America	64.77	74.84	100.00	100.00	100.00
Twenty-five largest contributors	43.57	39.09	50.67	41.46	45.04
II. Other Member States	27.67	33.52	32.39	47.04	30.34
III. All Member States	42.27	38.63	49.17	41.91	43.84

## ANNEX 8

### CHANGES IN THE PROGRAMME BUDGET FOR THE FINANCIAL PERIOD 1986-1987<sup>1</sup>

#### Report by the Programme Committee of the Executive Board

[EB77/4 - 7 November 1985]

1. The Programme Committee reviewed a report on changes in the programme budget for 1986-1987 (appended to this document). This report was submitted by the Director-General for the information of the Committee and of the Executive Board in accordance with resolution WHA35.2 of the Thirty-fifth World Health Assembly (1982) and with the procedures agreed upon for operating a mechanism, through the Director-General's Development Programme, for the adjustment of imbalances or deficiencies in the programme budget. The changes reported by the Director-General represented increases in the budgetary allocations for global and interregional activities in five programmes which had been identified by the Executive Board and the Health Assembly during their review of the proposed programme budget for 1986-1987 as meriting additional financial support. The Committee noted that any significant changes that might have been made in regional programmes would be reported upon directly by the Regional Directors to the Board at its seventy-seventh session in January 1986.
2. These increases, totalling US\$ 1 700 000, have been made by utilizing funds available for this purpose in the Director-General's Development Programme in accordance with the above-mentioned procedures. The five programmes and the amounts of the increases in their budgetary allocations for 1986-1987 are: (i) programme 2.4 (External coordination for health and social development) for emergency relief, US\$ 250 000; (ii) programme 3.3 (Health systems research), US\$ 500 000; (iii) programme 12.2 (Essential drugs and vaccines) for the Action Programme on Essential Drugs and Vaccines, US\$ 250 000; (iv) programme 13.16 (Cardiovascular diseases), US\$ 400 000; and (v) programme 13.17 (Other noncommunicable disease prevention and control activities) for integrated disease control and monitoring, US\$ 300 000.
3. Members of the Programme Committee noted that these increases responded in a highly satisfactory manner to the comments and suggestions made by the Board and the Health Assembly when they reviewed the proposed programme budget for 1986-1987. They expressed their full support for the increases in the budgetary allocations for the above-mentioned activities.
4. In reviewing the proposed activities for emergency relief operations, the Committee commended the emphasis being placed by the programme on strengthening national capacity for emergency preparedness. The Committee endorsed the Director-General's intention to use additional resources to accelerate the national programme on essential drugs in Zimbabwe, and to mobilize additional external resources for this purpose, as a working model of a successful essential drugs programme in a developing country.
5. It was explained that although the specific additional health systems research activities being developed for 1986-1987 were not presented in detail in the report at this stage, it was the intention of the Director-General to review and approve with care each specific proposal received from countries in the light of demonstrated absorptive capacity, and the detailed activities and their eventual outcome would be reported to the Executive Board.
6. It was noted that in the area of cardiovascular diseases WHO was following two lines of emphasis: (1) the epidemiological analysis of trends, determinants and effectiveness of community-based interventions (e.g. the WHO MONICA project); and (2) the development of the

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<sup>1</sup> See decision EB77(2).



operational means of integrating cardiovascular and other noncommunicable disease prevention and control functions as part of primary health care. The Director-General explained that he had been using other available funds and external resources for innovative activities in smoking and health. It was noted that additional resources were being used to strengthen a network of collaborating centres, and to develop methodology and demonstration projects for the integrated prevention and control of noncommunicable diseases. The Committee recommended that undue duplication in the activities of programme 13.16 (Cardiovascular diseases) and programme 13.17 (Other noncommunicable diseases prevention and control activities) should be avoided.

7. In concluding its review, the Committee commended the Director-General for the action taken, which was in line with the views and guidance of the Board and Health Assembly.

### Appendix

#### Report by the Director-General

[EB77/PC/WP/4 - 20 September 1985]

#### 1. INTRODUCTION

1.1 The Thirty-fifth World Health Assembly (1982) decided in resolution WHA35.2 that the brief review of the changes in the programme budget to be made by the Health Assembly in even-numbered years pursuant to resolution WHA28.69 should be undertaken by the Executive Board. The Health Assembly also requested the Director-General to report to the Board in even-numbered years any significant developments in respect of global and interregional activities, and important changes made in regional programmes, with major implications for the current biennial programme budget. In accordance with resolution WHA35.2, the present report is being submitted by the Director-General with respect to global and interregional activities. Any significant changes in regional programmes will be reported on to the Executive Board directly by the Regional Directors in their reports on significant regional developments, including regional committee matters.

1.2 This report is also submitted for information of the Programme Committee and the Executive Board in accordance with the procedures agreed upon for operating a mechanism, through the Director-General's Development Programme, for the adjustment of imbalances or deficiencies in the programme budget. This mechanism was referred to in paragraphs 4 and 5 under programme 2.2 of the proposed programme budget for the financial period 1986-1987<sup>1</sup> in the following terms:

4. The provision for the programme was increased in 1984-1985 in the light of the discussion held by the Executive Board in 1981 regarding a "programme reserve", which led the Board to adopt resolution EB68.R2. Although the Board requested the Director-General to include such a "programme reserve" in the proposed programme budget for 1984-1985, the Director-General subsequently concluded that the time was not propitious for this in view of the budgetary constraints resulting from the serious economic situation faced by many Member States. As an alternative, and in support of the principles suggested by the Board for the utilization of the proposed reserve, the Director-General made provision for a modest budget increase in the Director-General's Development Programme. Part of the funding for this programme (US\$ 1 600 000) is consequently being used in the 1984-1985 biennium, in response to the comments and suggestions made in the Board and the Health Assembly during their review of the programme budget proposals for 1984-1985, to increase the allocations to certain programmes, particularly at the global and interregional level, prior to implementation of the approved programme budget. Information on the planned utilization of these funds was presented to the Programme Committee of the Executive Board by the Director-General in November 1983.

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<sup>1</sup> Document PB/86-87, p. 60.



5. As regards the proposed programme budget for 1986-1987, the Director-General believes that, in line with the budgetary restraint exercised in all other parts of the proposals, it would be appropriate to maintain the provision for global and interregional activities under this programme at the same level as in 1984-1985. As in that biennium, he will use part of the resources of the programme to adjust the programme budget in the light of the review by the Board and the Health Assembly.

The approach suggested by the Director-General in this respect was endorsed by the Executive Board at its seventy-fifth session in January 1985 and by the Thirty-eighth World Health Assembly in May 1985.

1.3 When the Board and the Health Assembly reviewed the proposed programme budget for 1986-1987, a number of comments and suggestions were made concerning resource allocations to certain programmes. After discussing a number of such programmes the Board agreed to recommend additional funding for the purpose of intensifying activities in the following programmes: (i) programme 2.4 (External coordination for health and social development) for emergency relief, (ii) programme 3.3 (Health systems research), (iii) programme 12.2 (Essential drugs and vaccines) for the Action Programme on Essential Drugs and Vaccines, and (iv) programme 13.17 (Other noncommunicable disease prevention and control activities) for integrated disease control and monitoring. In the light of these recommendations and other comments made at the Executive Board and the Health Assembly, and after taking into account certain other factors as explained below, the Director-General has decided to use an amount of US\$ 1 700 000 from the Director-General's Development Programme approved for 1986-1987 to increase the allocations of the programmes referred to below.

## 2. INCREASES IN RESOURCE ALLOCATIONS TO THE PROGRAMMES CONTAINED IN THE APPROVED PROGRAMME BUDGET FOR 1986-1987

2.1 The increase in resource allocations to the programmes mentioned below will make it possible to undertake important new or additional activities which it had not been possible to accommodate within the budgetary ceilings established for them in 1986-1987. These activities are briefly described below.

2.2 The Organization's role in emergency relief operations was extensively discussed during the Executive Board and Health Assembly in 1985. The drought, famine and the "African crisis" in general in a large number of countries on the African continent and WHO's low profile compared with some other international bodies and nongovernmental organizations in dealing with the health emergencies of the crisis, have focused attention on the Organization's performance in disaster relief. Thus, 1985 was marked by a clearer definition of WHO's role and objectives in emergency relief and by the raising to a higher level of priority of certain elements in the strategy for reaching these objectives. With the evolving "African crisis" it has become more evident that greater attention needs to be paid to establishing and building up the information base in order to facilitate an adequate response to emergencies, and to intensifying training to improve national capacity for emergency preparedness. In the light of the comments of the Executive Board at its seventy-fifth session in January 1985 and the Thirty-eighth World Health Assembly in May 1985, during the review of the proposed programme budget for the financial period 1986-1987, the Director-General has decided to increase the 1986-1987 budget allocation to programme 2.4 (External coordination for health and social development) for emergency relief by up to US\$ 250 000.

2.3 Despite the considerable progress made in biomedical research and health technology development in recent years, the health care delivery system in many countries has not always been in a position to absorb such advances fully and make their benefits available to all. One important means of closing the gap between the development of new technologies and their application in countries is health systems research, which can be defined as research aimed at optimizing the utilization of the techniques and resources available in a country in order to promote health and health care delivery at all levels of the national health system. But realization of the full potential for health systems research has been slow because of a number of constraints. Thus both the Executive Board at its seventy-fifth session and the Thirty-eighth World Health Assembly, during the review of the proposed programme budget for the financial period 1986-1987, considered that additional funding should be made available for health systems research on the most critical issues in the reorientation of national



health systems towards health for all, in response to priority needs defined by countries. Accordingly, the Director-General has decided to make a total additional budgetary allocation of up to US\$ 500 000 to support these country-specific research and development activities.

2.4 The availability of drugs and vaccines is an integral and important component of virtually all national strategies for health for all based on primary health care; yet, especially in many developing countries, national drug policies, practices, and services regarding quality control, distribution and the utilization of drugs have not yet succeeded in ensuring that even a limited number of safe and effective drugs are generally available to the entire population for curative, preventive and diagnostic purposes. There is a need to accelerate implementation of the WHO Action Programme on Essential Drugs and Vaccines in countries, and in particular to demonstrate in a few developing countries that the approach of the Action Programme can be effectively and economically applied under local national conditions, thus providing successful models for consideration by other countries. In view of this situation, the Executive Board at its seventy-fifth session and the Thirty-eighth World Health Assembly, during the review of the proposed programme budget for the financial period 1986-1987, considered that the programme deserved additional funding, particularly with a view to mobilizing greater external resources for drug action activities in developing countries. Accordingly, the Director-General has decided to increase the 1986-1987 allocation to this programme by up to US\$ 250 000. It is proposed to use these resources to accelerate the national programme on essential drugs in Zimbabwe and also to mobilize additional external resources for this purpose.

2.5 The importance of cardiovascular diseases as causes of morbidity and death in virtually all industrialized countries and also their emergence as a public health problem in developing countries have been clearly recognized. These diseases cause 25% of all deaths in the world today; in developed countries they remain the leading cause of mortality, accounting for 48% of all deaths. What is possibly of even greater concern is the fact that in many countries cardiovascular diseases are occurring in ever younger age-groups, leading to premature morbidity and mortality. Appropriate technology now exists to prevent and control a growing number of these diseases, such as rheumatic heart disease in children, coronary heart disease and hypertension resulting in cerebrovascular accident, and the means are available for countries to formulate preventive strategies for implementation in entire populations. The Thirty-eighth World Health Assembly, when reviewing the proposed programme budget for 1986-1987, requested the Director-General in resolution WHA38.30 to intensify measures to promote the prevention of cardiovascular diseases and to ensure the availability of necessary resources.<sup>1</sup> Accordingly, the Director-General has decided to increase the 1986-1987 budget allocation for this programme by up to US\$ 400 000 for the prevention of coronary heart disease, the prevention of rheumatic fever/rheumatic heart disease, and a combined approach to prevention of cardiovascular diseases and other noncommunicable diseases.

2.6 Major noncommunicable diseases, such as cardiovascular diseases, cancers, diabetes, respiratory, rheumatic and oral diseases, impose a heavy burden in all societies, absorbing an unduly high proportion of health budgets of both developing and developed countries. The situation in the developing countries is even more serious since these countries, which have not yet conquered the bulk of communicable diseases, are already facing an epidemic of noncommunicable diseases. A careful scrutiny of existing knowledge accumulated in different noncommunicable disease programme areas suggests that there is strong potential for prevention and control of a group of these diseases, from the point of view of causative effects of unhealthy life-styles and environment, as well as from the health care delivery point of view. Although more and more evidence is coming from epidemiological studies that a number of life-style-related factors are common to several major noncommunicable diseases, there is so far little experience to prove that integrated risk factor control - an attractive concept - or, in even broader terms, integrated health promotive action in communities is feasible and more efficient than existing preventive practices oriented to a single disease. Consequently WHO has been actively involved in generating and stimulating this innovative approach to the prevention and control of major noncommunicable diseases. However, the Thirty-eighth World Health Assembly recognized that there was a clear need to further support and strengthen research and development in this area, and in resolution WHA38.30 requested the Director-General, inter alia, to foster and support community studies aimed at the joint control of a number of risk-related noncommunicable diseases.

<sup>1</sup> Document WHA38/1985/REC/1, p. 23.

Accordingly, the Director-General has decided to increase the 1986-1987 budget allocation for this programme by up to US\$ 300 000, with a view to stimulating the action called for in resolution WHA38.30.

### 3. SUMMARY

3.1 As outlined above, the changes in the programme budget for 1986-1987 at the global and interregional level have all been made as a result of increases in the resource allocation to certain programmes, utilizing funds available for this purpose in the Director-General's Development Programme. These increases are summarized below in the order of the classified list of programmes used in the programme budget for 1986-1987:

	<u>Programme</u>	<u>Amount</u> US\$
2.4	External coordination for health and social development	250 000
3.3	Health systems research	500 000
12.2	Essential drugs and vaccines	250 000
13.16	Cardiovascular diseases	400 000
13.17	Other noncommunicable disease prevention and control activities	300 000
	Total	US\$ 1 700 000



ANNEX 9

GUIDELINES FOR THE WHO REVIEW OF DEPENDENCE-PRODUCING  
PSYCHOACTIVE SUBSTANCES FOR INTERNATIONAL CONTROL<sup>1</sup>

[EB77/24, Annex - 13 November 1985]

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<sup>1</sup> See decision EB77(3). Text as amended in the light of the Board's discussions.

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## I. MANDATE

1. WHO is the specialized agency designated for the evaluation of the medical, scientific and public health aspects of psychoactive substances under the Single Convention on Narcotic Drugs, 1961, as amended by the 1972 Protocol; and the Convention on Psychotropic Substances, 1971. Pursuant to resolutions of the World Health Assembly and the United Nations Commission on Narcotic Drugs (CND),<sup>1</sup> WHO adopted a new procedure for the evaluation of these substances in January 1984.<sup>2</sup> In the terms of this procedure the WHO Secretariat is assisted by a Working Group on Programme Planning (PPWG) and by an Expert Committee on Drug Dependence (ECDD). This Annex sets out guidelines dealing with the underlying principles of the review procedure, the working arrangements within the secretariat as well as with external agencies, the functions of the different institutional mechanisms, the nature of the documentation to be prepared and the time schedules for the different activities. The guidelines cover WHO's responsibilities under Article 3 of the 1961 Convention and Article 2 of the 1971 Convention concerning whether or not to recommend international control of substances.

## II. UNDERLYING PRINCIPLES

2. The WHO review procedure should be made known through administrative decisions and formalized in its main parts. Its stages should be guided by PPWG and it should result in recommendations by the Director-General of WHO for international control formulated on the basis of proposals from ECDD.

3. The procedure should utilize relevant scientific knowledge, systematically collected and screened through continuing WHO collaboration with scientific institutions, industrial laboratories, health services and regulatory agencies, government health and law enforcement authorities, and relevant international agencies. Research-and-development information and expertise from the industry should be fully consulted.

4. At the end of the procedure, the relevant scientific information collected and analysed should be compiled and condensed for each psychoactive substance recommended for control. This material should be the basis for the final recommendation by the Director-General and summaries of it should be transmitted in English, French and Spanish, with his recommendation to the Secretary-General, for distribution to the governments in good time prior to the decision on international control by CND.

5. The procedure should give ample time for governments to study the WHO recommendations and their justification prior to the CND session, and for the collection and evaluation of information on legal, administrative, social and economic factors whenever required.

<sup>1</sup> The Commission on Narcotic Drugs is a functional commission of the United Nations Economic and Social Council. It is the central policy-making body of the United Nations system in respect of narcotic drugs and psychotropic substances. Decisions concerning the international control of substances are taken by the Commission.

<sup>2</sup> See: Report of a WHO working group on guidelines for the WHO review of psychotropic substances (WHO document MNH/83.13); and document EB73/1984/REC/1, resolution EB73.R11 and Annex 5.



Consistent with the principles of openness and visibility and of providing information and opportunity for comment to parties concerned, the information collected is generally made available for publication, particularly information contained in the reports of PPWG and ECDD. However, questions of confidentiality must be considered.

### III. PROVISIONS OF THE CONVENTIONS

6. The international drug control conventions entrust CND with the responsibility of taking the final decision concerning the international control of a psychoactive substance under the provisions of the treaties.<sup>1</sup> The Commission's decision is the consequence of a notification proposing control addressed to the Secretary-General either by a State Party to the Conventions or by WHO.

7. The basis for the decision in both cases is a recommendation made by WHO following an evaluation to determine whether specific criteria set forth in the Conventions have been met. Under the provisions of the Single Convention, the Commission must accept or refuse the WHO recommendation as a whole, whereas in the case of the Convention on Psychotropic Substances the Commission may accept a WHO proposal to include a substance even under a schedule other than that recommended by WHO. With respect to control under the Convention on Psychotropic Substances, WHO's assessment is decisive with respect to scientific and medical matters, but the Commission may also take into account legal, administrative, economic, social and other factors in reaching its decision. Under the provisions of both the 1961 and 1971 Conventions, a Party which disagrees with the Commission's decision may request a review of such a decision by the Economic and Social Council; the Council may confirm, alter or reverse the Commission's decision.

8. Although such action does not come within the scope of the guidelines, under the provisions of Article 3 of the Convention on Psychotropic Substances a State Party may, if certain conditions are met, exempt preparations containing psychotropic substances from specific control measures. In order to do so, it must address a notification to the Secretary-General of the United Nations who in turn sends a copy of the notification to other States Parties and to WHO. If a Party or WHO has information which it believes requires that the exemption of a preparation should be terminated, it should notify the Secretary-General of the United Nations accordingly and submit information in support of that decision. WHO should review the data submitted by States which wish to avail themselves of this provision of the 1971 Convention by applying specific guidelines<sup>2</sup> that have been approved by CND.

### IV. WHO REVIEW PROCEDURE

9. The time schedule and the steps in the WHO review of dependence-producing psychoactive substances for international control are set out in the table in Appendix 2 to this Annex.

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<sup>1</sup> The scheduling process is covered by the provisions of Article 3 of the Single Convention and Articles 2 and 17.2 of the Convention on Psychotropic Substances. The scheduling process is described in detail in the Commentaries on the Single Convention and the Convention on Psychotropic Substances published by the Secretary-General of the United Nations. The process is also described in more general terms in: Rexed, B. et al. Guidelines for the control of narcotic and psychotropic substances in the context of the international treaties. Geneva, World Health Organization, 1984.

<sup>2</sup> The specific WHO procedures for review of exempted preparations in accordance with CND guidelines are set forth in United Nations Economic and Social Council document E/1984/13 (E/CN.7/1984/13). The guidelines on exemption adopted by the Commission are largely based on recommendations which were made by WHO and are set out in Commission's resolution 1(S-VIII) (see United Nations Commission on Narcotic Drugs. Report of the eighth special session, 6-10 February 1984. Economic and Social Council, Official Records, 1984, Supplement No. 3. New York, 1984, pp. 43-44 (United Nations Economic and Social Council document E/1984/13 (E/CN.7/1984/13)).



Information collectionThe WHO Mental Health Programme

10. The review of dependence-producing substances to establish the degree of their usefulness in medical therapy as a pre-requisite to making recommendations concerning international control is a part of WHO's Mental Health Programme and is carried out in close collaboration with other WHO programmes. WHO's Division of Mental Health (MNH) is responsible for advising the Director-General<sup>1</sup> on the implementation of the task of the Organization under the international drug control treaties. This is a distinct function, "WHO's review of dependence-producing psychoactive substances", in the medium-term programme for mental health.

11. In addition to the review of psychoactive substances for possible international control, the medium-term programme (1984-1989) envisages three major projects of direct relevance, namely:

- (a) assessment of the efficacy and side effects of psychoactive drugs if consumed in combination with other drugs or alcohol;
- (b) assessment of the therapeutic usefulness and public health effects of widespread use of specific psychoactive drugs with a view to making recommendations to countries and United Nations bodies concerning their use and methods of control at national and international level; and
- (c) development of guidelines for use by countries in the implementation of activities related to international drug control treaties.

12. Project (a) is of particular importance in the context of recommendations concerning control (or exemption) of combinations of preparations and of drugs for which there is a significant interaction with alcohol. Project (b) seeks to develop methods appropriate for the assessment of dependence potential, abuse liability and actual abuse as well as therapeutic usefulness of individual drugs. Project (c) concentrates on ways in which WHO can facilitate countries' action concerning the implementation of treaties.

13. WHO's Mental Health Programme also obtains data through projects dealing with the management of drug dependence, and through work in the epidemiology of drug use and abuse, in the treatment of neurological and psychiatric disorders, and in mental health aspects of health care. Collaboration with the International Federation of Pharmaceutical Manufacturers Associations, the International Organization of Consumers Unions and the International Council on Alcohol and Addictions, as well as other groups able to provide relevant information, may be useful in view of the wide spectrum of issues which have a bearing on the need to make psychotropic substances available for therapeutic purposes whilst at the same time preventing their misuse or abuse.

Other WHO programmes

14. Within the WHO Secretariat, the Pharmaceuticals unit collaborates through the collection and analysis of data related to general acceptability of psychoactive substances at the time of registration at national level; information on adverse drug reactions in general and those related in particular to potential dependence on psychoactive substances; data on drug utilization; and liaison with drug regulatory agencies (for example, such agencies may be advised to include data on dependence-producing properties of drugs acting on the central nervous system for utilization in the WHO review procedure). The Traditional Medicine unit collaborates by obtaining data on dependence-producing properties of herbal remedies, especially those on the priority list of its programme. The Action Programme on Essential Drugs and Vaccines collaborates by undertaking educational efforts aimed at members of health teams to enable them to use psychoactive substances more rationally, and by making wide use of knowledge acquired in the WHO review procedure.

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<sup>1</sup> The Director-General represents WHO, in accordance with decisions of the WHO Executive Board and the World Health Assembly, for the purpose of receiving notifications under the international drug control treaties and for making recommendations concerning the international control of psychoactive substances under those treaties on the basis of recommendations and advice provided to him as described in these Guidelines.



15. Other programmes of the Organization in which the use of narcotic and psychotropic substances is an important concern should also be involved in collaboration in the review procedure. Collaboration with other programmes should, for example, help to identify consultants and members of ad hoc working groups for participation in the WHO review procedure decided upon by PPWG.

#### WHO regional offices and country programme coordinators

16. Through their contacts with national health authorities, WHO regional offices can obtain reports on governments' plans and programmes, identify types of drugs of abuse warranting international control, and call attention to possible formal notifications in appropriate cases. They may have regular contacts with regional drug control organizations to obtain scientific and other information. Through collaborating centres, country contacts and links with nongovernmental organizations, they can obtain information about new developments in psychopharmacology and results of epidemiological and other studies of relevance to the review procedure. Furthermore, through contacts with national drug regulatory agencies, the regional offices can obtain lists of registered drugs, information about changes in the control of individual drugs and results of clinical trials.

17. Close contact is maintained with WHO country programme coordinators, who may also receive relevant information enabling them to facilitate the governments' programmes in this area.

#### WHO collaborating centres

18. WHO collaborating centres can initiate studies and provide data for the screening process. They are also in a position to coordinate national contributions to the review procedure. Their investigations involve basic and clinical research and the epidemiology of use and abuse of drugs. Each collaborating centre evolves a work plan in cooperation with WHO, in which activities relevant to the WHO review procedure can be clearly identified.

#### United Nations Division of Narcotic Drugs

19. The Division of Narcotic Drugs (DND) functions under the direct authority of the Secretary-General of the United Nations. It acts as the secretariat to the Commission on Narcotic Drugs (CND) and performs the functions entrusted to the Secretary-General under the international drug control treaties. It collects, analyses and reviews developments in national drug control activities, illegal drug traffic and drug abuse, on the basis of reports from governments.

20. DND documents also contain special information on illicit drug traffic and drug abuse collected from governments, pursuant to requests by the Director-General of WHO, for a forthcoming evaluation of a psychoactive substance for possible international control. The reports to DND from governments on the national drug abuse situation usually originate from national health authorities, which generally rely on local clinical and epidemiological investigations.

#### National health services

21. Scientific data produced within national health services should be utilized in the WHO review procedure. The clinical evidence on the dependence-producing capacity of a psychoactive substance is an important part of WHO's evaluation. The clinical trials of psychoactive substances before registration generate important data. Epidemiological studies of drug use and abuse help to define the balance between therapeutic usefulness and liability in the context of public health and social problems. While evidence of many of these aspects is obtained from the current scientific literature, direct communication with the national drug regulatory agencies would be useful. Information should be collected regularly on new psychoactive substances subject to clinical trials, on new substances registered and their level of control, on changes in national controls of psychoactive substances, and on studies of drug utilization and abuse. If appropriate, this information may be collected by the regional offices, having close contact with the responsible professionals in the national regulatory agencies and ministries of health.



Other sources

22. Data on illicit traffic and concurrent drug use occurring in different contexts should be systematically collected for utilization in the review procedure. The International Criminal Police Organization (ICPO/Interpol) is an important collaborating agency in this respect in that its secretariat produces reports concerning international illicit drug trafficking based upon information from its member States. Regional and national organizations, which have, for example, both operational and regulatory responsibilities and which assemble and analyse data from large populations, are also requested to transmit relevant information for the WHO review procedure.

23. Other relevant information is the result of research conducted in universities and other scientific institutions, during operations of the biochemical and pharmaceutical industry, and in the clinical work of health services and their laboratories. The secretariat maintains contact with these entities; in particular, it contacts known producers of substances selected for review in order to obtain the maximum of relevant information.

24. Material from international congresses and symposia may be especially useful in helping to recognize new trends in psychopharmacology, to facilitate the collection of general information about psychoactive substances and to identify scientists who might assist in the review procedure.

Experts collaborating in the WHO review procedure

25. The selection of experts to collaborate in the WHO review procedure should be made from WHO expert advisory panels, fairly large groups whose members are chosen in advance with a view to collaboration with WHO and who come from all WHO regions, from industrialized and developing countries. WHO at present has three expert advisory panels with directly relevant specialization: those on drug dependence and alcohol problems, on mental health, and on neurosciences. The procedure for the selection and appointment of experts is set out in the WHO Regulations for Expert Advisory Panels and Committees<sup>1</sup> and the register of the panels is open for study by the WHO Executive Board.

26. The experts serving in the review procedure have a well-documented scientific career at a high level and professional background of international repute, and they represent all relevant behavioural, pharmacological, pharmaceutical, medical, biological and epidemiological disciplines, as well as public health and administrative science. Scientists in industrial research units may be asked to collaborate as consultants and as experts in WHO ad hoc working groups, as appropriate, for their special knowledge, but they should not serve as members of PPWG and ECDD.

27. The selection of experts to collaborate in the WHO review procedure should be given careful consideration so as to avoid conflict of interests. In this connection, the experts invited to participate in the WHO review and, in particular, in the work of PPWG and ECDD, should sign a statement confirming that no conflict of interests shall affect their participation.

Preparation of the "critical review"

28. The "critical review" is a summary prepared by WHO of available data on individual substances. The basis for the "critical review" of each substance is data about its pharmacological properties and clinical, public health and epidemiological data concerning its use and abuse.

29. As shown in the table in Appendix 2, the WHO Secretariat requests and organizes information and data on the substances selected for review, prepares the "critical review" and submits it to PPWG and to other parties having directly collaborated in its preparation (called interested parties). In preparing the "critical review", the Secretariat identifies, collates and analyses data from the various sources described earlier as a basis for the

<sup>1</sup> WHO Basic Documents, 36th ed., 1986, p. 93.



screening and evaluation of substances for review. Studies should, as far as possible, include the activities of the manufacturing industry. Clinical studies on the testing and on the use and abuse of psychoactive drugs are also taken into consideration. The resulting reports and other available material - for instance, those provided by the manufacturing industry - could be studied and analysed by WHO ad hoc working groups to help provide a critical and balanced evaluation. The input of relevant information on the substances should proceed from the relevant organizations through the Secretariat and PPWG to ECDD. To help to ensure that all material presented to ECDD is up to date, the Secretary to ECDD will circulate the agenda of the next ECDD meeting to the interested parties beforehand.

30. As to the formulation of the draft "critical review", the data for each substance should, where feasible, be organized under the following headings:

- (1) Substance identification by International Nonproprietary Name (INN); chemical or other common name; other identifying characteristics; Chemical Abstracts Service (CAS) registry number
- (2) Chemistry
- (3) General pharmacology
- (4) Toxicology - including adverse reactions in man
- (5) Pharmacokinetics
- (6) Dependence potential
- (7) Epidemiology of use and abuse, with an estimate of the abuse potential of the substance
- (8) Nature and magnitude of public health problems
- (9) National control
- (10) Therapeutic and industrial use
- (11) Production, consumption, and international trade
- (12) Illicit manufacture and illicit traffic, and related information.

31. The information under each heading, with salient references, should be limited to that which is essential and consistent with the need to facilitate the review by ECDD.

32. Not all the headings listed above may be covered in all instances or to the same extent. For example, it may not be possible to cover (4), (5), (7), (8), (10) and (11) for new hallucinogenic substances. Indeed, the production of data in such circumstances may not be justifiable on ethical grounds. Likewise, extensive epidemiological data may not be available. In such instances, ECDD would have to provide full justification for reaching a decision on incomplete (e.g., on preclinical) data.

33. The confidentiality of any information received by WHO for use in the review should be respected to the maximum extent possible. In preparing the "critical review", the secretariat should ensure that confidential information shall either be screened so as to avoid disclosure or, if appropriate, rearranged so as to protect the source. Thus, although the "critical review" should only be given a limited distribution, and only where the recipient accepts its confidential nature, it should nevertheless be prepared as if it were a public document. Subject to the need for certain information to remain confidential as provided above, appropriate arrangements should be made to provide access to the information used to prepare the "critical review" to interested persons as defined in paragraph 40.

#### Institutional framework for the WHO review procedure

34. To assist the secretariat in the planning and management of the review procedure, it was decided that a Programme Planning Working Group (PPWG) should be established, in addition to



and as a separate entity from the Expert Committee on Drug Dependence (ECDD). PPWG should have a general function in guiding the review procedure whereas ECDD should concentrate on the technical issues of the evaluation of substances for possible international control.

35. The Senior Medical Officer of WHO's Division of Mental Health (MNH) responsible for evaluation of psychoactive drugs should act as Secretary to PPWG and ECDD. The Directors of MNH and WHO's Division of Diagnostic, Therapeutic and Rehabilitative Technology (DTR), and the Chief of the Pharmaceuticals unit of DTR should be members of the PPWG and ECDD secretariat. Other headquarters divisions and regional offices should also be represented on the secretariat for the meetings of PPWG and ECDD as and when required. The secretariat should provide the necessary liaison between PPWG and ECDD.

#### Programme Planning Working Group

##### Membership

36. PPWG has up to 10 members selected from WHO expert advisory panels for their knowledge of the issues involved, including an understanding of government drug regulation. Exceptionally, other individuals may also be invited by the Director-General of WHO to be members of PPWG. To ensure technical expertise, a majority of the members should be scientists in experimental, clinical or epidemiological disciplines with international experience in fields related to the control of psychoactive substances. A balance in membership should be observed between industrialized and developing countries and between geographical regions. To ensure continuity, terms of office of members should not coincide; thus one-third of the members should be renewed every year. Since a three-year term of office is suggested, this should involve, for the first group, selection of one-third of the members for one year, one-third for two years, and the remainder for three years. Successive reappointments should not be the rule.

##### Attendance of non-members at meetings of the Group

37. The United Nations Division of Narcotic Drugs, INCB and Interpol, as well as collaborating centres whose activities are directly relevant to the review procedure, should be invited to send a representative to meetings of PPWG. Representatives of governments and representatives from competent nongovernmental organizations in official relations with WHO or in consultative status with the United Nations Economic and Social Council may be invited to attend a part of the meeting. The nongovernmental organization contingent from the pharmaceutical industry may include representatives of the pharmaceutical industry under the aegis of IFPMA or other interested persons as defined in paragraph 40. Experts or other special advisers or representatives may also be invited for a part of the meeting if the need arises.

##### Procedure

38. PPWG should meet annually, preferably during the latter part of February or early March after the sessions of the United Nations Commission on Narcotic Drugs. There may also be collaboration between its members between sessions. The PPWG should follow the rules of procedure established for WHO expert committees.<sup>1</sup>

##### Functions

39. The principal functions of PPWG are to make recommendations regarding:

- (a) the acceptability of the "critical review" as a summary of all available relevant data on a substance prepared by the secretariat for review by ECDD later in that year;
- (b) psychoactive substances for review by ECDD in the following year(s);
- (c) establishment of ad hoc groups, involvement of consultants, support of development of collaborating centres or other matters concerning the infrastructure for the conduct of activities relevant to the review process at international and national levels;
- (d) long-range planning of the WHO review procedure; and
- (e) procedure for the WHO review procedure.

<sup>1</sup> WHO Basic Documents, 36th ed., 1986, p. 99.



40. As to item (a) above, PPWG screens for completeness and organization the data available on the various substances for review and forwards the "critical review" of data for each such substance to ECDD for evaluation. If there is additional information which PPWG wishes to have added to the "critical review", the secretariat should compile such additional information in the form of an addendum, which should then be forwarded with the "critical review" to ECDD. The addendum should also be forwarded by the secretariat to relevant interested parties. Any enterprise, organization or government which may itself, or through its members or nationals, be affected by the eventual decision whether or not to adopt control measures in respect of any of the reviewed substances (called an interested person), may submit additional information to the "critical review" and addendum before the meeting of ECDD for its consideration.

41. As to item (b) above, the following considerations should be used in the selection of a substance for review:

- (1) there is a notification from a State Party;
- (2) there is a request from the United Nations Commission on Narcotic Drugs (CND); or
- (3) information is brought to WHO's attention that the substance may fulfil the criteria for inclusion in either of the two international drug control conventions.

42. In the planning of the review procedure high priority should be given to those substances that were notified by a State Party or requested by CND, according to the degree of urgency indicated in the notification or request. If priorities for the selected substances have to be established, the following factors should be considered:

- (1) the extent of public health and social problems;
- (2) the extent of medical use (substances used most widely have highest priority);
- (3) probability of abuse liability and/or related public health and social problems;  
and
- (4) the number of countries for which there is evidence of abuse and public health and social problems.

43. If a government notifies an abuse problem of extreme urgency requiring immediate international action, the evidence should be reviewed at the next PPWG meeting, which should determine the priority of ECDD review according to the above considerations.

44. The report of each PPWG session, with the draft agenda and plans for the future, should be transmitted to DND for presentation to the following CND session for information and comment. The PPWG report should contain a list of governments' notifications transmitted by the Secretary-General of the United Nations, CND's latest proposals concerning substances for review and those still under consideration by WHO, as well as listing such additional substances as WHO considers warrant evaluation. The PPWG report would thus have a twofold use: first, it would serve the Secretary-General as a basis for the DND questionnaire to governments eliciting data at the request of the Director-General of WHO; secondly, the report would inform CND about the work in progress in the WHO review procedure; this, in turn, would permit CND to indicate its own preferred priorities with respect to the WHO review. CND's comments on the programme would be an important contribution to the deliberations of the next PPWG meeting, which would take place a few weeks after the CND session. As in the past, the report of CND would convey to WHO its views on the thoroughness, range, timeliness and documentation of the WHO review.

#### Expert Committee on Drug Dependence

##### Membership

45. ECDD should have a membership of 11, chosen by the Director-General of WHO from WHO expert advisory panels. The experts should be known for their integrity and scientific eminence, and the composition of ECDD should reflect equitable geographic representation. A member of ECDD may be a member of PPWG only under exceptional circumstances.



Attendance of and meetings with non-members

46. Representatives of the United Nations Division of Narcotic Drugs (DND), INCB and Interpol should be invited to attend meetings of ECDD. Other representatives specified in paragraph 37, as interested persons, may be invited to have a meeting with the members of ECDD before the start of the ECDD meeting to present additional information concerning the reviewed substances and to clarify written submissions. Such requests should be submitted at least a week before the ECDD meeting commences and should be accompanied by reasons for the request and the relevant new information to be submitted. Representatives of DND, INCB and Interpol should also be invited to this information meeting.

Procedure

47. ECDD should, as a rule, meet annually, preferably during the latter part of April, in order to provide sufficient time to enable the Director-General of WHO to make his decision on possible recommendations on international control and to transmit notifications incorporating those recommendations to the Secretary-General of the United Nations by about the end of May. Except as otherwise provided in these Guidelines, ECDD should observe the regulations and rules for expert committees.<sup>1</sup>

Functions

48. ECDD can make its own suggestions (as well as comments on the urgency of review) regarding substances for review. These comments and suggestions, as well as any other information ECDD wishes to be transmitted, should be forwarded to PPWG together with the report of each session of ECDD.

49. The primary function of ECDD is to review and evaluate information available to it on substances under review and to make recommendations to the Director-General of WHO on the international control of psychoactive substances. The recommendations of ECDD concern scientific, medical and public health matters and must apply the criteria set down in the conventions.

50. ECDD bases its deliberations and recommendations mainly on the documents provided by PPWG and the secretariat; these should consist of the "critical review", the addendum, if any, and any replies of interested persons concerning the "critical review" and addendum. They should be forwarded to the members of ECDD at least three weeks, if possible, prior to its meeting. In addition, ECDD may, if it so desires, consider additional information presented in accordance with the procedure set forth in paragraph 46. All the information on which the "critical review" is based should be available to ECDD members for further evaluation where necessary, keeping the provisions of paragraph 33 in mind.

51. ECDD, when deciding whether to recommend international control after completion of its discussions, should first decide, with regard to the 1961 Convention, whether the substance has morphine-like, cocaine-like, or cannabis-like effects or is convertible into a substance having such effects. If so, it should then determine if the substance:

(1) is liable to similar abuse and productive of similar ill effects as the substances in Schedule I or Schedule II;

(2) is convertible into a substance already in Schedule I or Schedule II.

52. In the case of either (1) or (2) above, ECDD should recommend to the Director-General of WHO to communicate that finding to the Secretary-General of the United Nations. If it finds that the substance cannot be appropriately controlled under the Single Convention, it should then make its recommendations in terms of the 1971 Convention.

53. In accordance with the instructions for WHO in Article 2, paragraph 4, of the 1971 Convention (see Appendix 1), ECDD should determine whether:

(1) the substance has the capacity to produce (a) a state of dependence and (b) central nervous system stimulation or depression, resulting in hallucinations or disturbances in motor function or thinking or behaviour or perception or mood; or

<sup>1</sup> WHO Basic Documents, 36th ed., 1986, pp. 93-101.



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(2) the substance has the capacity to produce similar abuse and similar ill effects as a substance in Schedule I, II, III or IV; and

(3) there is sufficient evidence that the substance is being or is likely to be abused so as to constitute a public health and social problem warranting the placing of the substance under international control.

54. If either (1) and (3) or (2) and (3) above are found to be the case, ECDD should advise the Director-General of WHO to communicate to the Secretary-General of the United Nations a recommendation for international control, supported by a summary review as described below.

55. ECDD should prepare a summary review on each substance reviewed, giving a succinct description of its findings on the extent or likelihood of abuse, the degree of seriousness of the public health and social problems, and the degree of usefulness of the substance in medical therapy, together with recommendations on the control measures, if any, that would be appropriate in the light of its assessment.

56. In the event of a request for a review of a recommendation of ECDD, the Director-General should consult the Chairmen of ECDD and PPWG, ensuring that full information concerning the request is available to them, with a view to deciding whether there is justification for changing the recommendation. Because of the severe time constraints under which the review process operates, such requests must be received within one week from the date on which the recommendations of ECDD have been made available to the interested parties having assisted in the review procedure.

#### V. STATUS OF THE GUIDELINES

57. These guidelines have been formulated and revised by PPWG and submitted to the Director-General of WHO. Experience in their use may necessitate modifications in the future, and PPWG should advise the Director-General concerning such modifications as and when necessary.

Appendix 1

## 1. CONVENTION ON PSYCHOTROPIC SUBSTANCES, 1971 (EXTRACT)

Article 2

## SCOPE OF CONTROL OF SUBSTANCES

.....

4. If the World Health Organization finds:

(a) That the substance has the capacity to produce

(i) (1) A state of dependence, and

(2) Central nervous system stimulation or depression, resulting in hallucinations or disturbances in motor function or thinking or behaviour or perception or mood, or

(ii) Similar abuse and similar ill effects as a substance in Schedule I, II, III or IV, and

(b) That there is sufficient evidence that the substance is being or is likely to be abused so as to constitute a public health and social problem warranting the placing of the substance under international control,

the World Health Organization shall communicate to the Commission an assessment of the substance, including the extent or likelihood of abuse, the degree of seriousness of the public health and social problem and the degree of usefulness of the substance in medical therapy, together with recommendations on control measures, if any, that would be appropriate in the light of its assessment.

.....

## 2. SINGLE CONVENTION ON NARCOTIC DRUGS, 1961,

AS AMENDED BY THE 1972 PROTOCOL

AMENDING THE SINGLE CONVENTION ON NARCOTIC DRUGS, 1961

(EXTRACT)

Article 3

## CHANGES IN THE SCOPE OF CONTROL

1. Where a Party or the World Health Organization has information which in its opinion may require an amendment to any of the Schedules, it shall notify the Secretary-General and furnish him with the information in support of the notification.

2. The Secretary-General shall transmit such notification, and any information which he considers relevant, to the Parties, to the Commission, and, where the notification is made by a Party, to the World Health Organization.

3. Where a notification relates to a substance not already in Schedule I or in Schedule II,

(i) The Parties shall examine in the light of the available information the possibility of the provisional application to the substance of all measures of control applicable to drugs in Schedule I;

(ii) Pending its decision as provided in subparagraph (iii) of this paragraph, the Commission may decide that the Parties apply provisionally to that substance all measures of control applicable to drugs in Schedule I. The Parties shall apply such measures provisionally to the substance in question;



(iii) If the World Health Organization finds that the substance is liable to similar abuse and productive of similar ill effects as the drugs in Schedule I or Schedule II or is convertible into a drug, it shall communicate that finding to the Commission which may, in accordance with the recommendation of the World Health Organization, decide that the substance shall be added to Schedule I or Schedule II.

4. If the World Health Organization finds that a preparation because of the substances which it contains is not liable to abuse and cannot produce ill effects (paragraph 3) and that the drug therein is not readily recoverable, the Commission may, in accordance with the recommendation of the World Health Organization, add that preparation to Schedule III.

5. If the World Health Organization finds that a drug in Schedule I is particularly liable to abuse and to produce ill effects (paragraph 3) and that such liability is not offset by substantial therapeutic advantages not possessed by substances other than drugs in Schedule IV, the Commission may, in accordance with the recommendation of the World Health Organization, place that drug in Schedule IV.

6. Where a notification relates to a drug already in Schedule I or Schedule II or to a preparation in Schedule III, the Commission, apart from the measure provided for in paragraph 5, may, in accordance with the recommendation of the World Health Organization, amend any of the Schedules by:

(a) Transferring a drug from Schedule I to Schedule II or from Schedule II to Schedule I; or

(b) Deleting a drug or a preparation as the case may be, from a Schedule.

7. Any decision of the Commission taken pursuant to this article shall be communicated by the Secretary-General to all States Members of the United Nations, to non-member States Parties to this Convention, to the World Health Organization and to the Board. Such decision shall become effective with respect to each Party on the date of its receipt of such communication, and the Parties shall thereupon take such action as may be required under this Convention.

8. (a) The decisions of the Commission amending any of the Schedules shall be subject to review by the [Economic and Social] Council upon the request of any Party filed within ninety days from receipt of notification of the decision. The request for review shall be sent to the Secretary-General together with all relevant information upon which the request for review is based;

(b) The Secretary-General shall transmit copies of the request for review and relevant information to the Commission, the World Health Organization and to all the Parties inviting them to submit comments within ninety days. All comments received shall be submitted to the Council for consideration;

(c) The Council may confirm, alter or reverse the decision of the Commission, and the decision of the Council shall be final. Notification of the Council's decision shall be transmitted to all States Members of the United Nations, to non-member States Parties to this Convention, to the Commission, to the World Health Organization, and to the Board;

(d) During pendency of the review the original decision of the Commission shall remain in effect.

9. Decisions of the Commission taken in accordance with this article shall not be subject to the review procedure provided for in article 7.

Appendix 2STEPS IN THE PREPARATION OF WHO RECOMMENDATIONS ON  
INTERNATIONAL CONTROL OF PSYCHOACTIVE SUBSTANCES (WHO REVIEW PROCEDURE)

<u>Time schedule</u>			<u>Responsible</u>
Step 1	February*	Identification of substances	PPWG
Step 2	March	Request for information	Secretariat
Step 3	August	Information received	Secretariat
Step 4	September (end)	Information organized and categorized	Secretariat
Step 5	September/October/ November	Information critically reviewed and a draft critical review produced	Secretariat
Step 6	December	Draft critical review sent to interested parties and selected experts	Secretariat
Step 7	January	Finalization of critical review	Secretariat
Step 8	January	Finalized critical review sent to PPWG and to interested parties	Secretariat
Step 9	February/March	Decision on completeness and quality of critical review	PPWG
Step 10	April	Supplementary information, if any, may be added in the form of an addendum	PPWG/Secretariat
Step 11	April	Addenda forwarded to interested parties	Secretariat
Step 12	April	Replies received from interested persons	Secretariat
Step 13	April	Critical review, addendum and replies sent to ECDD members and interested parties	Secretariat
Step 14	April	Meeting of ECDD to produce recommendations + <u>summary review</u> (each substance)	ECDD
Step 15	May	Recommendations and summary review to Director-General of WHO	Secretariat
Step 16	May	Report of ECDD prepared and submitted for publication	Secretariat
Step 17	May/June	Recommendations to Secretary-General of United Nations	Director-General of WHO

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\* The procedure may be initiated prior to February.



Appendix 3

## ABBREVIATIONS

CND	United Nations Commission on Narcotic Drugs
DND	United Nations Division of Narcotic Drugs
ECDD	WHO Expert Committee on Drug Dependence
ICPO (Interpol)	International Criminal Police Organization
INCB	International Narcotics Control Board
MNH	WHO Division of Mental Health
PPWG	Programme Planning Working Group, WHO
Review procedure	Procedure for the WHO review of dependence-producing psychoactive substances for international control

## DEFINITIONS

Dependence-producing substance	A narcotic drug, a psychotropic substance or a psychoactive substance liable to induce repeated use as a result of a psychological and/or physiological state of want or need.
International control	The various control measures applicable to substances scheduled under the international drug control conventions.
International drug control conventions (or treaties)	The Single Convention on Narcotic Drugs, 1961, and that Convention as amended by the 1972 Protocol; and the 1971 Convention on Psychotropic Substances.
International Narcotics Control Board	A control organ entrusted with functions assigned to it by international drug control treaties. One of these functions is the monitoring of licit trade of drugs brought under international control.
Narcotic drug	Any of the substances in Schedules I and II of the Single Convention on Narcotic Drugs, 1961, and that Convention as amended by the 1972 Protocol.
Notification	A formal communication addressed to the Secretary-General of the United Nations by a State Party to an international drug control treaty or by WHO pursuant to a provision of that treaty requiring the communication, or such a communication from the Secretary-General of the United Nations to a State Party or to WHO. In the context of the present Guidelines, reference to a notification means a notification relating to the scheduling of a substance either under the provisions of Article 3 of the Single Convention or Article 2 of the Convention on Psychotropic Substances.

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Psychoactive substance	Any substance, natural or synthetic, or any natural substance material, which has psychoactive properties. In this Annex the term psychoactive substance is used for those substances which are at present not under international control.
Psychotropic substance	Any substance, natural or synthetic, or any natural material in Schedule I, II, III or IV of the 1971 Convention on Psychotropic Substances.
State Party	A State which has become a Party to an international drug control treaty, through signature, ratification, accession, or succession.

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## ANNEX 10

GLOBAL STRATEGY FOR HEALTH FOR ALL BY THE YEAR 2000: POLITICAL DIMENSION<sup>1</sup>

[EB77/17 - 24 October 1985]

### Discussion paper by the Director-General

"Politics is the art of the possible" (Bismarck)

The purpose of this paper is to facilitate agreement by Member States on a frame of reference for WHO's political activities. It was prepared in response to the agreement in the Executive Board at its seventy-sixth session in May 1985 to consider at its seventy-seventh session in January 1986 how to deal with political matters in ways conducive to the fulfilment of the policy of health for all by the year 2000 and to make suggestions to the Health Assembly to that end.

### Introduction

1. In May 1985 the President of the Thirty-eighth World Health Assembly stated in his presidential address: "Because of the unique technical and social mandate of our Organization, we should strive hard to avoid - or at least minimize - the spending of the precious time of the Assembly on extraneous political issues which perhaps are best discussed elsewhere".<sup>2</sup> At the subsequent session of the Executive Board the question of the politicization of the Organization was considered during the review of the report of the Board's representatives at the Thirty-eighth World Health Assembly.<sup>3</sup> It was agreed that at its session in January 1986 the Board would consider how to deal with political matters in ways conducive to the fulfilment of the policy of health for all by the year 2000, and would make suggestions to the Health Assembly to that end.

### Politics and policies

2. In resolution WHA33.17 adopted in 1980 the Thirty-third World Health Assembly decided unanimously - by consensus, without the need to vote - "to concentrate the Organization's activities over the coming decades, as far as is possible in the light of all its constitutional obligations, on support to national, regional and global strategies for attaining health for all by the year 2000". Any consideration of the political involvement of the Organization therefore has to take place with the attainment of that goal first and foremost in mind. It has been made clear in numerous policy statements that to attain that goal governments would need to display strong political will and to take firm political action, individually with respect to domestic health matters, and collectively in WHO with respect to international health matters that could guide and support national health ones. The purpose of that political action has also been made clear, namely, to define or implement health policy.

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<sup>1</sup> See decision EB77(7).

<sup>2</sup> Document WHA38/1985/REC/2, p. 11.

<sup>3</sup> Document EB76/1985/REC/1, pp. 32-44.

3. To identify the nature of such political action it is first necessary to clarify certain semantic problems that give rise to confusion. The word "politics" has to be clearly distinguished from the word "policy". "Policy" implies a course of action adopted by a government, other national entities such as interest or pressure groups, industrial or commercial enterprises and the like, as well as by intergovernmental organizations such as WHO or other international bodies. It is often expressed in the form of a statement.

"Politics" is the art or science of government. It usually involves competition for power between interest groups, pressure groups or individuals, and the use of such power. The word "political" is correctly used as an adjective with reference to the word "politics"; it is incorrectly used and therefore misleading if it is used with reference to the word "policy".

4. The power of government or of interest groups such as political parties may be applied - "political action" - to shape policy, that is to give rise to a course of action; or it may be used to enforce the implementation of such a course of action. For example, national health policy is a course of action aimed at achieving defined goals for improving health, including the priorities among these goals. Political action may be required to define or implement a health policy, such as the commitment of government to the policy of health for all by the year 2000, or a decree by the head of state or the signing of an international charter to that end.

5. The nineteenth century statesman Bismarck stated that politics is the art of the possible. This paper will outline what is possible and what is not possible with respect to defining and enforcing policies for health for all in Member States and in WHO.

#### National policies for health for all

6. In order to understand the potential scope as well as the limits of political action to define and implement policies for health for all, it is necessary to identify what such policies might consist of and what measures might be required to give effect to them. These have been amply outlined in the report on the International Conference on Primary Health Care<sup>1</sup> held in Alma-Ata and in the Global Strategy for Health for All by the Year 2000.<sup>2</sup> The following is a brief summary of them:

- Health is a fundamental human right.
- Inequality in the health status of people must be drastically reduced; an equitable distribution of health resources is therefore fundamental.
- People have the right and duty to participate individually and collectively in the planning and implementation of their health care; community involvement is therefore a key factor.
- Governments as a whole, and not just ministries of health, have a responsibility for the health of their people; this commitment to the policy of health for all is therefore crucial.
- Countries must become self-reliant in health matters, but not necessarily self-sufficient.
- The human energy generated by improved health should be channelled into sustaining economic and social development, and economic and social development should be harnessed to improve the health of people; this implies the mutual reinforcement of health development policy and socioeconomic development policy.
- Fuller and better use should be made of resources to promote health and development and thus help to promote peace.

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<sup>1</sup> Alma-Ata 1978. Primary health care. Geneva, World Health Organization, 1978 ("Health for All" Series, No. 1).

<sup>2</sup> Global Strategy for Health for All by the Year 2000. Geneva, World Health Organization, 1981 ("Health for All" Series, No. 3).



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- Coordinated efforts will be required by the health and other social and economic sectors whose policies can contribute to health development.
  - The health system should use appropriate technology for health, that is, technology which is scientifically and technically sound, socially sound in that it is acceptable to those on whom it is used and to those who use it, and economically sound in that it can be afforded by people, the community and the country.
  - Primary health care is the key to attaining the goal of health for all as part of development in the spirit of social justice.
  - Primary health care, the first level of contact between people and the health system, should be the system's central function and main focus; it should also be an integral part of the overall social and economic development of the community.
  - Governments should explore the possibility of delegating responsibility, authority and, where applicable, budgets to communities to organize their own primary health care, as well as to intermediate levels of the health system to provide support to primary health care.
  - All opportunities should be seized to gain support for the health policy from the health professions and economic planners and institutions.
  - Action should be taken to disseminate the kind of information that is likely to influence various target audiences to support the health policy.
  - Human resources should be developed by fostering individual and community responsibility for health, enlightening people on health matters, encouraging them to take part in shaping health policy and in controlling the health infrastructure and the programmes it delivers, and training health personnel to work as teams to provide people with the services and support they need.
  - Financial resources should be mobilized by reallocating existing resources as necessary, or, if this proves impossible, at least allocating any additional resources to primary health care; attempting to secure additional funds only after making the best use of existing ones; considering alternative ways of financing the health system; identifying activities that might attract external grants or loans, in developing countries taking action to seek such grants or loans, in developed countries taking action to influence the provision of such grants and loans; and preparing a masterplan for the use of all financial resources.
  - Countries should cooperate with one another for the attainment of their health goals; this includes technical cooperation among developing countries, among developed countries, and among developing and developed countries.
  - Monitoring and evaluation are essential to assess progress in the implementation of health policies and their effectiveness in improving the health status of people; governments should report periodically to WHO on the outcomes of such monitoring and evaluation.

#### National political action for health for all

7. Political action is normally required to lead to decisions to introduce much of the above policy and to overcome resistance to its implementation. Such decisions may be taken in a variety of ways, depending on the country's prevailing political ideology, economic system and administrative pattern, all of which influence the political system. Social, cultural and religious patterns may also influence decisions, for example, the ways in which decisions are reached (by voting or by less formal means), industrial and commercial influences, community organizations, consumer movements, traditional custom, tribal influences, and guidance by religious leaders. Different groupings, mixes and superimpositions of the above factors may influence political decisions. Whatever the pattern of decision-making, the following are some examples of political action by which it may be possible or may prove not to be possible to define and implement the policies outlined in the preceding section.



8. Political action may be required to arrive at the very decision to have a health policy, and in particular the kind of policy needed to attain health for all. The prevailing ideological or socioeconomic system or internal balance of power may favour the adoption of such a policy. On the other hand, it may disfavour it if its adoption implies introducing drastic reforms to the health system and thus disturbing the status quo. Moreover, political action may be needed to convert the written word of the policy statement into operational action to carry out the policy - either partially or wholly, all at once or progressively. Once that has been done the issue becomes managerial rather than political, although political action may still be needed to ensure that operational action is indeed taken.

9. It may be necessary to take tough political decisions with regard to the content of a health policy, for example, the recognition of health as a fundamental human right or the reduction of health inequalities; the country's economic situation may make such decisions particularly problematic. Political action may also be required to give rise to decisions to delegate responsibility and authority to communities, to foster the organization by them of their own primary health care, to encourage people to take part in the social control of the health system, and even to accept people's right and duty to participate in their health care. Such initiatives may go counter to prevailing ideology; fear may arise that they will disrupt the existing social organization of the country. On the other hand, governments may feel that the assumption by them of responsibility for the health of their people will place too heavy a burden on them, or they may emphasize individual responsibility as part of their political philosophy.

10. National self-reliance in health matters may appear at first sight to have universal appeal, but difficult political decisions may have to be taken in order to break away from past dependency relationships and to overcome the fear that efforts to attain health independence may bring in their wake the withdrawal of external financial support for health. Strenuous political action may be required to convince the government to request external support for health since this may have to compete with similar requests in other more influential fields. Indeed, considerable powers of persuasion may have to be exercised to have health considered as a contribution to human development and not as a mere consumption of resources; without such persuasion it may not be possible to ensure the political commitment of government to the health policy and the support of economic planners and institutions.

11. In most countries mobilizing financial resources will require determined political action and decision, as this may involve taxation, obligatory social security, or cost recovery for items of service or for drugs; it may also involve finding solutions for poor people for whom the above measures are out of the question. The art of government may well have to be fully displayed in the face of the limits to the acceptance of the policy of a more equitable distribution of resources for health, or a related need to add resources, when such policy hurts people's pockets. Moreover, the political consequences may have to be considered of reallocating national resources for health to primary health care instead of, for example, to teaching hospitals, which often have inadequate budgets too. In like manner it may be necessary to take firm action to allocate any additional resources, let alone existing ones, to the above ends. And even when resources have been allocated, the art of government may have to be displayed to the full to overcome the resistance of cabinet ministers to having "their sector" interfered with for the sake of a common health goal.

12. Political action may be needed to gain acceptance of the concept of primary health care in the face of vested professional interests. This applies equally to the use of appropriate technology whose introduction may meet with the resistance of industry, for example with respect to the limitation of the number of drugs on the market or the advocacy of reduced consumption of alcohol and cigarettes. It may also meet with the resistance of the agricultural sector, for example with respect to reducing the quantity of dairy products and eggs, rearing livestock for lean meat, and limiting the extent of tobacco growing. In addition, in order to introduce appropriate technology it may be necessary to take action to overcome the pressure of the urban elite for sophisticated and costly medical care, particularly if they are supported by influential medical specialists.

13. Political action may be needed to ensure the presence of health personnel in rural areas, particularly areas that are distant from urban centres. Such action may include legislation or may depend on financial incentives with all the problems raised by this procedure, since similar incentives may then have to be provided to attract other professions



to rural areas. Determined action may also be required to persuade the mass media to support a policy for health for all since this may go counter to the tendency to highlight sensational but often costly medical news such as the use of artificial hearts.

14. Harmonious political relationships among countries, or at least the absence of serious political antagonism, are a prerequisite for constructive cooperation in health matters. Even when friendly political relationships exist, account has to be taken of economic interests, for example with respect to drug production, as well as of questions of prestige, for example the desire of each country to have scarce specialist facilities located in it so that it may become recognized as a centre of excellence. Consummate political skill may be required to overcome these obstacles.

15. Finally, a high degree of political courage is required to monitor and evaluate honestly the health situation and divulge the outcomes to other countries, even through WHO, since this may damage the country's image, its exports, its tourist trade, and the self-confidence of its people.

16. The possibility or otherwise of successful political action regarding issues such as the above depends in each country on the complex interaction of the kind of factors mentioned at the beginning of this section - the political system and form of government, the economic system and situation, the social organization, and the cultural patterns. Within these constraints it is possible for governments to take decisions concerning domestic health matters. Political action among countries ranges from mutual support to open antagonism and even armed conflict. Such relationships, or in other words "foreign policy", as well as affinities of language and culture, obviously affect the possibility or otherwise of fruitful intercountry cooperation for the attainment of health for all; but it is within the power of governments to decide. No power other than a superior one, if it exists, can decide for them or act for them by proxy.

#### Political action by WHO: the possible

17. WHO is not a supranational power, it is an intergovernmental organization. It can support governments so that they can take action to devise and implement policies for health for all, but it cannot take that action in their place by proxy. It has no jurisdiction whatsoever over the political ideology, economic system, administrative set-up or social, cultural or religious preferences of its Member States.

18. What political action is it possible for WHO to take to support national political action in favour of the policy of health for all? In all the fields mentioned in the previous section WHO can use its constitutional role as coordinating authority on international health work to lead to the definition by Member States of collective policy which can then act as a frame of reference for corresponding national policy. In doing this, the Organization has the sacred obligation to promote the health of people in all countries as demanded by the Constitution, which underlines cooperation among Member States and with others "to promote and protect the health of all peoples" and which states that "the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition". The Thirty-fourth World Health Assembly reiterated the importance of people when it referred to "the solemnly agreed, combined efforts of governments, people and WHO" to attain the goal of health for all, and when it invited Member States "to enlist the involvement of people in all walks of life, including individuals, families, communities, all categories of health workers, nongovernmental organizations, and other associations of people concerned" (resolution WHA34.36, May 1981).

19. The following are some examples of ways by which it is possible for WHO to support the governments and people of its Member States to take political action in favour of policies for health for all.

20. The Organization can take and has taken action to enlist top-level political support for health for all and to encourage governments to define and implement policies and strategies for the attainment of that goal by the year 2000. It does so through the medium of the World Health Assembly, the regional committees, the Executive Board, the United Nations General Assembly, the United Nations Economic and Social Council and the statements of the Director-General in these and other bodies. The Organization uses its influence in various



groupings of Member States such as the Non-Aligned Countries, the Organization of African Unity (OAU), the Organization of American States (OAS), the Andean Pact Countries, the Caribbean Community (CARICOM), the Association of South-East Asian Nations (ASEAN), the Council for Mutual Economic Assistance (CMEA), the European Economic Community (EEC) and the like. It acts in similar fashion to promote action for health for all by nongovernmental organizations and universities. It has lost no opportunity to point out that improvements in health can be a lever for social and economic development, can thus contribute to diminishing social unrest and related political unrest, and in this way can have a positive influence on the promotion of peace. It has also pointed out that, since good health is a fundamental human aspiration, efforts to promote it are greatly appreciated by people and are therefore a good political investment.

21. In 1977 the Director-General made it clear to the Thirtieth World Health Assembly, before it decided on the goal of health for all by the year 2000 in resolution WHA30.43, that to attain that goal governments would have to take decisive political action to bring about the reforms required in the health system and to reinforce international health solidarity. He added that these efforts would require the support not only of WHO through its international leadership role in health matters but also of the United Nations system and other intergovernmental organizations. At the Health Assembly in 1978 he stressed the importance of persuading the world's political leaders to support health for all by the year 2000 and pleaded with them to make it the world's social goal for the end of the twentieth century. He added, however, that only if delegates to the Health Assembly had the political guts to set priorities and make the health dollar work far more effectively than it did would there be a real chance of success.

22. Later that year he asked the participants in the International Conference on Primary Health Care if they were ready to fight the political battles required to overcome any social and economic obstacles and professional resistance to the universal introduction of primary health care. The adoption of the Declaration of Alma-Ata at that Conference and its subsequent endorsement<sup>1</sup> by the Thirty-second World Health Assembly in 1979 clearly demonstrated that governments understood their political commitment to the new health policy. The Director-General then addressed personal appeals to political leaders throughout the world. He subsequently reported to the Health Assembly that the results were most encouraging and that very deep appreciation had been expressed of the way Member States of WHO had been able to put aside their ideological differences and work together to improve people's health. World-wide publicity was given to this appreciation of the world's political leaders when the Thirty-fourth World Health Assembly adopted<sup>2</sup> the Global Strategy for Health for All in 1981 and acknowledged that the new health policy of WHO's Member States transcends political ideology and national ambitions and strikes at the very root of the desire of people not only to survive but to enjoy survival. At the Thirty-fifth World Health Assembly in 1982 it was emphasized that a striking way of harnessing the political commitment of governments was to use every opportunity to remind them that WHO's Member States have a well-defined policy, a carefully worked-out strategy and a practical plan of action, and that in all of these it has been clearly illustrated how health and development go hand in hand.

23. The regional committees too have been the scene of WHO support to national political action for health for all. As far back as 1976 it was pointed out that national political will is the most crucial element in launching reforms for health development. It was stressed that it was not WHO's intention to put on politicians' hats in order to use political weapons directly for attaining health goals, but that the Organization could have a great influence on national political decision-making for health development. The regional committees were encouraged to act as appropriate forums to that end, deriving their political energy from the health doctrines that had been elaborated collectively in WHO. It was made clear at the regional committees that responding to the imperatives of contemporary history that had been forcibly and eloquently articulated by Member States and taking political action to attain health goals did not mean that the Organization had become politicized in any negative sense. The great sanitary reforms of the latter half of the nineteenth century, which provided the industrializing countries with clean water and safe sewage, and which did so much to promote health in these countries, had been brought about by vigorous political action. The great health reforms which WHO had launched in the latter half of the twentieth century would have to be brought about too by no less vigorous political action.

<sup>1</sup> Resolution WHA32.30.

<sup>2</sup> Resolution WHA34.36.



24. The Organization was also active in promoting the policy of health for all in the United Nations Economic and Social Council and General Assembly. This led to the adoption by the General Assembly of two important resolutions concerning health. In resolution 34/58, adopted in 1979, the General Assembly endorsed the Declaration of Alma-Ata, welcomed the efforts of WHO and UNICEF to attain health for all by the year 2000, and called upon the relevant bodies of the United Nations system to coordinate with and support the efforts of WHO by appropriate actions in their respective spheres of competence. In resolution 36/43, adopted in 1981, the General Assembly endorsed the Global Strategy for Health for All by the Year 2000. It urged all Member States to ensure its implementation as part of their efforts to implement the International Development Strategy for the Third United Nations Development Decade and to cooperate with one another and with WHO to ensure that the necessary international action is taken. The General Assembly also requested all appropriate organizations and bodies of the United Nations system - including UNICEF, FAO, ILO, UNDP, UNEP, UNESCO, UNFPA and the World Bank - to collaborate fully with WHO in carrying out the Global Strategy.

25. WHO has also been active in backing up at the international level national efforts to ensure economic support for the policy of health for all. Thus, it emphasized this policy when it contributed to the report of the Independent Commission on International Development Issues (The "Brandt Commission").<sup>1</sup> It was also instrumental in persuading the World Bank that health could make an important contribution to social and economic development. This led the Bank to include health projects in its lending activities. In a recent publication on development in sub-Saharan Africa,<sup>2</sup> the Bank placed health on the list of top priorities together with only a few other sectors such as agriculture and education.

26. The Health Assembly, the Board and the regional committees are exerting their powers of persuasion in attempts to mobilize resources to implement health-for-all policies in developing countries. Thus in resolution WHA34.37, adopted in 1981, the Health Assembly urged all Member States to allocate adequate resources to strategies for health for all and urged those that are in a position to do so to increase substantially their voluntary contributions for that purpose. It also invited the United Nations system and other bodies concerned to provide financial and other support to developing countries to help them implement their strategies for health for all. Private foundations and philanthropic bodies have been approached to the same end. In 1985 the Thirty-eighth World Health Assembly adopted resolution WHA38.20 by which it requested the Director-General to prepare a report on the repercussions of the world economic situation on the efforts of Member States to achieve the goal of health for all and to transmit it to the Secretary-General of the United Nations for circulation to all its Member States.<sup>3</sup> The Organization has also set up mechanisms for rationalizing the international flow of resources for health for all, and through these mechanisms has emphasized what it has termed "enlightened bilateral support", namely direct support to developing countries to implement policies that Member States have agreed to collectively in WHO. This makes it possible for external partners to maintain their identity and their visibility while at the same time respecting collectively agreed health policy.

27. The Organization is engaged daily in complex relationships with international groups involved in such varied issues as the implementation of the International Code of Marketing of Breast-milk Substitutes; the Action Programme on Essential Drugs and Vaccines; the transfer of information on drugs moving in international commerce; the modification of practices in the agricultural and food sectors aimed at providing healthier food; influencing industry to manufacture effective, safe, low-cost radiodiagnostic machines whose specifications were worked out by the Organization and influencing the medical profession to use them; and persuading an international group of physicians for the prevention of nuclear war to take up the challenge of health for all, particularly through supporting immunization as part of primary health care. Moreover, the Organization has been fearless in providing objective information on the dangers to health of smoking. Such international action has as its purpose support to governments and their people to take the necessary action domestically.

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<sup>1</sup> North-South: A programme for survival. Report of the Independent Commission on International Development Issues. London, Pan Books, 1980.

<sup>2</sup> Toward sustained development in sub-Saharan Africa. A joint program of action. Washington, D.C., World Bank, 1984.

<sup>3</sup> Document WHA38/1985/REC/1, p. 15.



28. The Organization has also been active in promoting support for the policy of health for all on the part of various nongovernmental organizations and other international groups, such as, to mention only a very few examples, the International Council of Nurses regarding the role of nursing in primary health care, the International Federation of Surgical Colleges and the International College of Surgeons with respect to essential surgery, the International Society and Federation of Cardiology in relation to strategies to prevent cardiovascular disease, the International Federation of Pharmaceutical Manufacturers Associations and consumers' groups in connection with medicinal drugs, and associations of universities and deans of schools of medicine and public health with a view to introducing the concept of health for all into the curricula of the different faculties concerned.

29. The Technical Discussions held during two consecutive Health Assemblies in 1984 and 1985 led to the adoption of resolutions on the role of universities in the strategies for health for all by the year 2000 and on collaboration with nongovernmental organizations in implementing them. In the former (resolution WHA37.31), the Thirty-seventh World Health Assembly urged Member States to encourage universities and other higher learning institutions to include the social and technical concepts of health for all in the education and training of all categories of students and postgraduates and to acquaint the general public with these concepts. It invited universities throughout the world to ensure that students and postgraduates in all faculties are adequately acquainted with the goal of health for all and actively support the measures for attaining it. In resolution WHA38.31, the Thirty-eighth World Health Assembly called on national nongovernmental organizations to commit themselves in practice to the implementation of the strategies for health for all and urged international nongovernmental organizations to further collaboration between their national counterparts and Member States to this end, and to collaborate with WHO and other international organizations in supporting health-for-all activities. At the same time it called on Member States to foster partnership by involving nongovernmental organizations in health-for-all strategies. These are but two examples of how political action by WHO can help to influence national action for health for all. Moreover, the Technical Discussions at the Thirty-ninth World Health Assembly in 1986 will deal with the promotion of intersectoral action, once more using the international level to promote action at the national level.

30. The Organization has formulated clear collective policies concerning such matters as national self-reliance in health matters, decentralization of responsibility and authority, community involvement, generation and use of appropriate health technology, and development of health manpower that is technically competent and socially attuned to provide people with the services and support they require; it has lost no opportunity to promote these policies in a wide variety of forums.

31. In many of the above activities the Organization has had to face political pressures from many different interest groups. It has made it clear to them that it cannot act as a subjective supporter of any one of them, nor can it act as a neutral pacifier among the parties concerned. WHO's role on these matters is that of an objective pathfinder marking out for every one the best ways of complying with the health policies adopted collectively by Member States in their World Health Organization.

32. As for the monitoring and evaluation of the policy and strategy for health for all, Member States have expressed themselves frankly and fearlessly in the regional committees and the World Health Assembly and have demonstrated that they are not afraid of self-evaluation and even of self-criticism if these help to lead to the introduction of better measures for attaining the goal. They have thus demonstrated to the world at large their political determination to attain that goal.

#### Political action by WHO: the impossible

33. It can be seen that it is possible for WHO to support governments and people to take political action in support of policies for health for all and that it does so extensively. But while the Organization can firmly advocate compliance with health-for-all policy because that was agreed to collectively, it cannot enforce such compliance, nor can it enforce compliance with any other policy or with ethical or commercial codes of any kind. Even if the Health Assembly were to adopt regulations in accordance with its constitutional powers, these would only come into force for those Members that accepted them; others have the right to reject them or express their reservations simply by notifying the Director-General (Article 22 of the Constitution).



34. It is not possible for WHO to interfere in internal national political debates or struggles, no matter what their nature - debates on the nature or scope of national policy, or the struggles of interest groups of various kinds, political parties, or social and ethnic groups. Nor can it interfere in internal national social unrest, for example as manifested by strikes of health workers for better pay or improved conditions of work, even if the outcomes of such struggles are likely to affect health. What it can and does do is to advocate collectively adopted policy such as that enshrined in health for all by the year 2000; this may go a long way to solving some of these issues, but not all of them.

35. It is not possible for WHO to enforce intercountry cooperation for health against the desires of the governments concerned since it is not a supranational organization but an international one.

36. It is not possible for WHO to interfere in the foreign policy of governments, in ideological differences or political controversies between them, in economic battles or sanctions between Member States, or in military conflict opposing them. Other forums exist within the United Nations system to deal with such issues, and in particular the Security Council and the General Assembly. In a recent public statement the Secretary-General of the United Nations said the following: "The Security Council and the General Assembly were both established to promote the resolution of political problems... The functional agencies, on the other hand, were not created for the pursuit of political objectives. A principal reason why the United Nations system was established on a highly decentralized basis was so that the operational agencies and offices would be separated from the political controversies to be dealt with in the political organs". What WHO can and does do is to provide health support within its constitutional mandate to the people affected by such political issues.

#### Political action by WHO: the possible and the impossible

37. Of course people's health often depends to a large extent on political decisions and the measures deriving from them; but these are national decisions, national measures that affect national health policy and national health status. In the final analysis it is at national level, within countries, that the challenging goal of health for all will be attained. It can be seen that it is possible for WHO to take political action at the international level to support Member States to take such action at the national level in order to carry out the daring collective policy of health for all. There is a great difference between that and the problems of international political differences. It is not possible for WHO to deal effectively with these even if it is possible for it to provide health support to the people affected by them. It is not possible for the Organization to interfere in policy that is foreign to the Organization's mandate as defined in its Constitution as a specialized agency of the United Nations system - a specialized health agency. This implies that the Organization will have to display a high degree of maturity in handling political matters in such a way that it will not only continue to survive but that it will do so with the degree of tolerance and tranquillity required to permit it to devote its efforts to the main focus of its activities which, as decided by the Health Assembly, is at this juncture the attainment of health for all by the year 2000.

#### Consensus

38. Any political influence that WHO might have on health policy depends on consensus among its Member States. Collective policy decided unanimously binds Member States together. On the other hand, policy decisions decided by majority vote cannot lead to the consensus that will make it possible to use WHO correctly, that is as the world's collective health conscience whose policy inspires national health policies. This applies to any kind of voting by majority, including weighted voting by such criteria as population size, scale of assessments with respect to the regular budget, or size of voluntary extrabudgetary contributions to WHO or directly to developing countries to carry out agreed WHO policy. Moreover, it applies irrespective of the issue involved, whether that be health policy, programme principles or intercountry cooperation for health. The very nature of collective decisions by WHO's Member States, and of individual and collective moral responsibility for their implementation, makes decisions by majority vote a contradiction in terms. For decisions taken in WHO are morally binding rather than legally binding on Member States; they represent the desire of Member States to collaborate in order to improve people's health. As a corollary of such national sovereignty, without consensus only those Member

States in favour of decisions taken by majority vote will consider themselves bound by them and therefore committed to carry them out domestically and in their intercountry relationships. Member States in the minority will not feel committed to these decisions. Such fragmentation of efforts will spell the doom of health for all by the year 2000.

#### Conclusion

39. The above criteria regarding what it is politically possible for WHO to do and what it is politically not possible for it to do could act as a frame of reference for the Organization's political activities - their potential usefulness, and it can be seen that many of them are useful, as well as their limitations. Within that framework WHO could well reinforce the kind of action by means of which it is possible for it to support governments in their political action in favour of health for all by the year 2000; it would have to avoid the kind of action by means of which it is not possible to support governments to that end. To fulfil its constitutional function as directing and coordinating authority on international health work in that way over the next 15 years, WHO will have to display supreme political wisdom or "art of government".

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ANNEX 11

RELATIONS WITH NONGOVERNMENTAL ORGANIZATIONS<sup>1</sup>

At its sixty-first session, in January 1978, the Executive Board decided (resolution EB61.R38) to spread its triennial review of nongovernmental organizations in official relations with WHO over the three-year period, reviewing one-third of the organizations each year. The following 52 nongovernmental organizations were accordingly reviewed by the Standing Committee on Nongovernmental Organizations at its meetings on 13 and 15 January 1986. They relate to programmes 2.3 to 9.4 inclusive.

African Medical and Research Foundation International	International Federation of Health Records Organizations
Aga Khan Foundation	International Federation for Hygiene, Preventive and Social Medicine
Biometric Society	International Federation for Information Processing
Christian Medical Commission	International Federation of Medical Student Associations
Commonwealth Medical Association	International Federation of Surgical Colleges
Council for International Organizations of Medical Sciences	International Hospital Federation
International Academy of Legal Medicine and Social Medicine	International Organization for Standardization
International Air Transport Association	International Paediatric Association
International Association for Accident and Traffic Medicine	International Planned Parenthood Federation
International Association of Agricultural Medicine and Rural Health	International Society for Burn Injuries
International Centre of Social Gerontology	International Sociological Association
International College of Surgeons	International Union of Architects
International Commission on Occupational Health	International Union of Biological Sciences
International Committee of Catholic Nurses	International Union for Health Education
International Committee of the Red Cross	International Union of Nutritional Sciences
International Confederation of Midwives	International Union of School and University Health and Medicine
International Council on Jewish Social and Welfare Services	League of Red Cross and Red Crescent Societies
International Council of Nurses	Medical Women's International Association
International Council of Scientific Unions	Medicus Mundi Internationalis (International Organization for Cooperation in Health Care)
International Council on Social Welfare	Population Council
International Council of Women	World Federation for Medical Education
International Dental Federation	World Federation of Public Health Associations
International Epidemiological Association	World Federation of United Nations Associations
International Ergonomics Association	World Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians
International Federation on Ageing	
International Federation of Chemical, Energy and General Workers' Unions	
International Federaton of Fertility Societies	
International Federation of Gynecology and Obstetrics	

<sup>1</sup> See decision EB77(8) and resolution EB77.R16.

## ANNEX 12

### EVALUATION OF THE AFRICAN EXPERIENCE OF USING NATIONALS AS WHO PROGRAMME COORDINATORS<sup>1</sup>

[EB77/11 - 19 November 1985]

The Director-General has the honour to present to the Executive Board a report by the Regional Director for Africa on the evaluation of the African experience of using nationals as WHO programme coordinators.

#### Report of the Regional Director for Africa

##### Background and policy basis

1. In May 1978 the Thirty-first World Health Assembly considered the Executive Board's organizational study on "WHO's role at the country level, particularly the role of the WHO representatives". By resolution WHA31.27 it noted with appreciation the findings, conclusions and recommendations of that study and endorsed the need to utilize better all the resources that WHO can mobilize, and in this context to experiment further with the employment of national personnel as WHO programme coordinators and project managers, and with national coordinating committees. However, the organizational study also pointed out numerous difficulties that can arise in using nationals as WHO programme coordinators.

2. Given the historical context and the evolution of the concept of technical assistance into that of cooperation, many Member States of the African Region followed the example of Guinea and Congo, which appointed national WHO programme coordinators in 1976. By 1983, 22 Member States were using national coordinators (see Appendix 1).

3. In 1983 the Global Programme Committee<sup>2</sup> requested the Regional Director for Africa to evaluate the experience. A preliminary evaluation was carried out and presented in turn to the Seventh Regional Programme Meeting in November 1983, the fourteenth session of the Global Programme Committee in January 1984, the African Advisory Committee for Health Development in June 1984 and the thirty-fourth session of the Regional Committee in September 1984. The Regional Committee considered that the experiment had been useful and that another evaluation report should be presented to the thirty-fifth session. It also called for the setting up of a working party to review the special services agreement concluded between WHO and the national WHO programme coordinators.

##### The evaluation

4. The evaluation of the experiment continued in accordance with the directive of the Regional Committee. This continuation was in the form of:

- extension of the opinion survey regarding coordinators used in the preliminary evaluation to all national WHO programme coordinators, WHO programme coordinators, and all WHO regional and field staff;
- an administrative evaluation that compared the regularity with which national and international coordinators send in their technical and financial reports;

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<sup>1</sup> Report presented under agenda item 9.

<sup>2</sup> Comprising the Director-General, the Deputy Director-General, the Regional Directors and the Assistant Directors-General.



- consultation on the matter during the Regional Director's official visits to Member States.

#### Results and recommendation

5. From the evaluation it was clear that the experiment has had positive results in some countries. It was equally clear that the experiment has come up against the following major difficulties:

- (i) the original purpose of promoting self-reliance would appear to have been lost sight of, as national WHO programme coordinators have not become an integral part of the national health managerial mechanisms;
- (ii) problems with remuneration, supervision of WHO personnel, dual allegiance and consequent failure sometimes to provide WHO with essential epidemiological data call the whole experiment into question;
- (iii) international coordinators appeared to be more experienced than national coordinators, better trained in public health and WHO programme management, and more conversant with the implementation of primary health care;
- (iv) the new guidelines of the Executive Board on national programme budget policy<sup>1</sup> emphasize the role of the coordinator as a person authorized to decide on the use of WHO resources, and to work with other government departments and international agencies - points in favour of an international rather than a national coordinator.

6. Indeed, in times of crisis some countries have asked for a high-ranking WHO staff member to support the national coordinator's office, thus confirming the inadequacy of the whole concept, at least at present. In practice, nationals are subject to constraints which make it difficult for them to manage WHO's resources to the satisfaction of both WHO and their own countries. Accordingly, it was proposed to bring the experiment to an end in the countries where it has been undertaken, without compromising the interests of any serving staff or of the countries in question.

#### Discussion of the report by the Regional Committee

7. At the beginning of the discussion of the report<sup>2</sup> at the Regional Committee's thirty-fifth session (September 1985), the Deputy Director-General reminded the Committee of the circumstances under which the experiment had been introduced. He also recalled the enthusiasm and courage shown by the Director-General and Regional Director in attempting to surmount the difficulties inherent in the innovation. He urged the Committee to consider the matter with an open mind and acknowledge an error if there were one.

8. Some of the representatives who took the floor insisted on the positive aspects of the experiment and mentioned (i) the promotion of national self-reliance in health; (ii) the better integration of the national coordinators into the health administration; and (iii) the better knowledge of the country and hence of the problems and the possible ways of solving them.

9. Some representatives compared the services of the national coordinators with those of the international coordinators used previously; in their view the comparison favoured the nationals. Speakers tended not to draw general conclusions but to analyse specific cases.

10. Some members of the Committee wondered whether the experiment had from the outset been a basic error of legal procedure on the part of WHO, since staff of this type did not exist elsewhere in the United Nations system. The means required by the coordinator for carrying out his duties as manager of the resources allocated by WHO should be guaranteed by some measure of independence from the government, which the national coordinators did not have.

11. The only way to give them that guarantee would be to grant them international status, which was not possible within the framework of the international civil service.

<sup>1</sup> Document WHA38/1985/REC/1, Annex 3, Appendix.

<sup>2</sup> Document AFR/RC35/22.



12. In response, the Regional Director suggested that the Regional Committee should consider the views of the three parties involved in the experiment: (i) the countries; (ii) the national coordinators; and (iii) WHO. Most speakers had mentioned only the favourable aspects of the experiment, but in some cases their views might not correspond with those of all national authorities.

13. Many coordinators were themselves not satisfied with their conditions of work; they considered themselves too dependent on the national authorities, and at the mercy of political changes.

14. WHO for its part was not satisfied with the experiment. It was true that some international coordinators were also out of place, but in the course of his restructuring of the African Region the Regional Director would be able to take action to optimize the use of WHO resources at country level. The coordinator was expected to represent the Organization as a whole in the country concerned following the directives of the Regional Director. He should therefore be directly responsible to him, with no possibility of refusing to obey as had occurred in the past.

15. Moreover, thorough knowledge of the country was not in itself sufficient experience; it was necessary to be familiar with other countries and be able to make comparisons. Within the TCDC concept it was necessary to share experiences. Finally, in no other region had any developing country, even the largest, thought it worthwhile to try the experiment. It was difficult for a national to manage WHO's resources and mobilize those of organizations outside the country, so necessary if Africa is to achieve health for all by the year 2000.

16. The intervention by the Regional Director and the additional information that he gave convinced the representatives and made them see the problem in a new light. Thus the following main points were made in the subsequent discussion:

- (i) the national coordinator cannot be regarded as having the status of an international civil servant;
- (ii) that status will invariably be open to dispute and lead to difficulties, since there is no solution to the legal problem;
- (iii) WHO, and particularly the African Region, cannot and ought not to dissociate itself from other United Nations agencies by utilizing a category of manpower whose status is not that of international civil servants;
- (iv) the positive aspects of the experiment in some countries (although negative in others) cannot fully compensate for the drawbacks linked to the status of the national coordinator, which has led to "trade-unionist" claims on the part of such coordinators;
- (v) there should be no obstacle to communication between the Regional Director and the Organization's representative in the country;
- (vi) the really negative aspects could only be hinted at publicly, since they might be damaging to individual or national interests;
- (vii) the country can always request the Regional Director to transfer the international coordinator if the latter does not carry out his role;
- (viii) the concept of TCDC favours the use of nationals from the countries of the Region as international coordinators, while it is possible for the countries to appoint a national counterpart on their side;
- (ix) the countries should trust the Regional Director implicitly so that, in the framework of the new structure of the African Region, WHO's cooperation with the countries may be strengthened with a view to making optimal use of the Organization's resources; they should provide the Regional Director with the means to implement his key ideas on behalf of the countries of the Region.



Conclusion

17. In conclusion, the Regional Committee adopted resolution AFR/RC35/R7 (Appendix 2). This resolution invites the Regional Director gradually to bring the experiment to an end. It also requests him to promote self-sufficiency and self-reliance in countries by increasing the involvement of nationals in the implementation of technical programmes.

Appendix 1MEMBER STATES OF THE AFRICAN REGION USING  
NATIONAL WHO PROGRAMME COORDINATORS

<u>Country</u>	<u>Date national coordinator appointed</u>
Algeria	*
Angola	15 March 1981
Benin	19 October 1981
Burkina Faso	2 September 1982
Central African Republic	1 August 1979
Comoros	23 March 1982
Congo	1 August 1976
Ethiopia	1 April 1978
Ghana	12 September 1979
Guinea	1 March 1976
Kenya	1 October 1979
Liberia	1 February 1981
Mali	13 November 1981
Mauritania	1 January 1983
Mauritius	1 January 1980
Mozambique	December 1982
Niger	1 December 1981
Nigeria	1 February 1982
Sao Tome and Principe	1 March 1981
Senegal	15 October 1982
Sierra Leone	11 October 1978
Togo	1 July 1983
Zambia	1 January 1982

Appendix 2RESOLUTION AFR/RC35/R7 OF THE REGIONAL COMMITTEE FOR AFRICA  
AT ITS THIRTY-FIFTH SESSIONEvaluation of the African experiment of using nationals  
as WHO programme coordinators

The Regional Committee,

Having examined the Regional Director's report on the evaluation of the African experiment of using nationals as WHO programme coordinators;

Recalling resolution WHA33.17 on the study of the Organization's structures in the light of its functions;

Recalling resolutions WHA31.27, EB75.R7 and WHA38.11 on regional programme budget policies, which request regional committees in particular to facilitate the rational and optimal use of all national and external resources, and to monitor and evaluate the implementation of these policies;

\* Algeria joined the African Region in 1984.

Considering the guidelines laid down in document DGO/83.1 entitled "Managerial framework for optimal use of WHO's resources in direct support of Member States";

Aware of the gravity of the socioeconomic crisis in Africa and the need to mobilize greater extrabudgetary resources;

Convinced of the usefulness of involving nationals in the management of WHO cooperation programmes;

Recognizing the positive results of the experiment in some countries, notwithstanding the difficulties inherent in this innovation,

1. THANKS the Regional Director for his report;
2. EXPRESSES ITS SATISFACTION that nationals have been given the opportunity to take part in the management of WHO programmes at the country level;
3. TAKES NOTE of the positive and negative aspects of using nationals in certain countries as WHO programme coordinators and of the managerial difficulties encountered at the Regional Office;
4. REITERATES the need for stricter application of the Organization's directives on the management of WHO programmes at the country level;
5. RECOGNIZES the urgent need to mobilize and to improve the management of the extrabudgetary resources essential for implementing national health development programmes;
6. INVITES the Regional Director gradually to bring the experiment to an end and to take all appropriate steps to eliminate any inconvenience which may result from this action for the countries and the coordinators in question;
7. REQUESTS the Regional Director:
  - (i) to ensure greater involvement of nationals in the implementation of technical programmes, so as to promote self-sufficiency and self-reliance in countries;
  - (ii) to transmit this resolution to the Director-General.

(Ninth meeting, 17 September 1985)

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ANNEX 13

VERBATIM RECORDS OF THE WORLD HEALTH ASSEMBLY<sup>1</sup>

[EB77/28 - 10 October 1985]

Report by the Director-General

Verbatim records of the Health Assembly

1. During the seventy-first session of the Executive Board in January 1983, in the course of the discussion on the programme budget proposals for health information support, some members of the Board queried the need to produce verbatim records of plenary meetings of the Health Assembly and wondered whether their cost was justified.<sup>2</sup> The opinion was expressed that, unlike the summary records, the verbatim records are not widely read or consulted, and they could be dispensed with and, for instance, replaced by a tape recording of the meetings. At the Thirty-sixth World Health Assembly (May 1983), however, some delegates opposed the notion.<sup>3</sup> The Director-General undertook to report on this matter so that the Board could consider alternatives. Since members did not question the usefulness of the summary records of the committees of the Health Assembly, as opposed to verbatim records of the plenary meetings, this report is concerned solely with the verbatim records.

2. The verbatim records are governed by the sections of the Rules of Procedure of the Health Assembly relating to languages and records. The relevant Rules are reproduced in Appendix 1 to this report. Appendix 2 outlines the current status, production procedure, and purpose of the verbatim records. The total cost of producing the verbatim records during the biennium 1984-1985 was US\$ 307 200. Appendix 3 gives a breakdown of this cost.

3. Tape recordings of plenary sessions could certainly be provided instead of verbatim records. Also, the written records could be issued in many alternative ways that would be less costly than the existing methods. Four alternatives to the present procedure, together with costs, are indicated below. Variants of these are of course possible. For a breakdown of the costs, see Appendix 3. In all cases except alternative 1 (the issue of tape recordings instead of verbatim records), the existing procedure of circulating the multilingual provisional verbatim records to the participants for clearance would be maintained.

Alternative 1 (cost: US\$ 152 900). To produce no verbatim records, and to make copies of the tape recording of the plenary meetings available to all those who, in accordance with Rule 94 of the Rules of Procedure of the Health Assembly, have been entitled to receive the verbatim records. The tape recordings could be offered in both a multilingual version (the original-language or "floor" channel) and in the single-language version of the recipient's choice, much of which would be a recording of the interpretation. A synopsis containing a list of speakers in consecutive order, arranged by agenda item, and with procedural notes would be issued with the tapes;<sup>4</sup> this would be the only written record of the plenary meetings.

Alternative 2 (cost: US\$ 89 700). To issue the definitive verbatim records in a single multilingual document containing the texts of each speech in its original language without translation, i.e., the present multilingual provisional verbatim document revised to take account of corrections submitted by participants.

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<sup>1</sup> Report presented under agenda item 19.

<sup>2</sup> See document EB71/1983/REC/2, p. 222.

<sup>3</sup> See document WHA36/1983/REC/3, pp. 195-199.

<sup>4</sup> As, for example, in the present Health Assembly Journal, or along the lines proposed in WHO Official Records, No. 238, 1977, pp. 229-232.



Alternative 3 (cost: US\$ 216 500). To issue the definitive document as in alternative 2, but in addition to issue separately complete translations into English and French.

Alternative 4 (cost: US\$ 181 500). To issue the definitive verbatim records in English and French only, after translation of the corrected multilingual provisional record.

4. The replacement of the printed verbatim records by tape recordings (alternative 1) has implications relating to the accessibility of the record, the duration of the general debate, and depreciation of plenary meetings; these implications are outlined in Appendix 4. The maintenance of the verbatim records as documents, but in changed form, as in alternatives 2, 3 and 4, would meet most of the possible objections to their replacement by tape recordings. However, for certain of these alternatives the saving would be substantially less.

5. The rationale underlying alternatives 3 and 4, with their emphasis on English and French, is that over 70% of the verbatim records is accounted for by speeches that were originally delivered in one or other of those two languages, so that the greater use of them in the records would considerably reduce the translation and other costs detailed in Appendix 3. All the alternatives proposed would involve discontinuing the existing single-language verbatim records in Russian and Spanish. Single-language records are not in any case produced in Arabic or Chinese.

6. Solutions involving the reproduction of all statements in the original language together with translation into one other official language have not found favour in the past. For example, the Board's proposal (resolution EB60.R7, part III) that speeches in other languages should be accompanied by a translation only into English was rejected by the Thirty-first World Health Assembly in 1978, which called for the maintenance of the status quo but for savings through the abolition of the Official Records series of publications and its replacement by records in the form of documents, in order to reduce the number of copies printed (resolution WHA31.13).

7. The cuts made following that decision in 1978 resulted in a reduction from 4500 to 2800 in the number of copies of the verbatim records produced in all languages. Appendix 3 shows that savings could be made by further changing the practice with respect to verbatim records. If the Board feels that such changes are necessary and timely, it will no doubt wish to make appropriate recommendations to the Health Assembly. Amendments would be needed to the Rules of Procedure of the Health Assembly in consequence.

#### Appendix 1

##### RULES OF PROCEDURE OF THE HEALTH ASSEMBLY AS REGARDS LANGUAGES AND RECORDS<sup>1</sup>

##### LANGUAGES

Rule 87. Arabic, Chinese, English, French, Russian and Spanish shall be both the official and the working languages of the Health Assembly.

Rule 88. Speeches made in an official language shall be interpreted into the other official languages.

Rule 89. Any delegate or any representative of an Associate Member or any representative of the Board may speak in a language other than the official languages. In this case he shall himself provide for interpretation into one of the official languages. Interpretation into the other official languages by interpreters of the Secretariat may be based on the interpretation given in the first such language.

Rule 90. Verbatim and summary records and the Journal of the Health Assembly shall be drawn up in the working languages.

Rule 91. All resolutions, recommendations and other formal decisions of the Health Assembly shall be made available in the working languages.

<sup>1</sup> See WHO Basic Documents, 36th ed., 1986, pp. 130-131.



## RECORDS OF THE HEALTH ASSEMBLY

- Rule 92. Verbatim records of all plenary meetings and summary records of the meetings of the General Committee and of committees and subcommittees shall be made by the Secretariat. Unless otherwise expressly decided by the committee concerned, no record shall be made of the proceedings of the Committee on Nominations or of the Committee on Credentials other than the report presented by the Committee to the Health Assembly.
- Rule 93. The summary records referred to in Rule 92 shall be sent as soon as possible to delegations, to representatives of Associate Members and to the representatives of the Board, who shall inform the Secretariat in writing not later than forty-eight hours thereafter of any corrections they wish to have made.
- Rule 94. As soon as possible after the close of each session, copies of all verbatim and summary records, resolutions, recommendations and other formal decisions adopted by the Health Assembly shall be transmitted by the Director-General to Members and Associate Members, to the United Nations and to all specialized agencies with which the Organization has entered into effective relations. The records of private meetings shall be transmitted to the participants only.
- Rule 95. Verbatim and summary records of public meetings and the reports of all committees and subcommittees shall be published.
- Rule 96. The Director-General shall issue for the convenience of participating delegations and organizations, in the form of a daily Journal of the session, such summary account of the proceedings of plenary meetings, committees and subcommittees as he may consider practicable.

Appendix 2

## THE CURRENT STATUS OF THE VERBATIM RECORDS

The Health Assembly's decision in 1978

1. The most recent decision of the governing bodies on the subject of the verbatim and summary records was in 1978, when the Thirty-first World Health Assembly considered the question of documentation and languages of the Health Assembly and the Executive Board. Following the discussion in Committee B,<sup>1</sup> the Health Assembly accepted the Board's recommendation<sup>2</sup> that the Official Records series should be discontinued and replaced by a number of separate volumes. However, it rejected the Board's further recommendations for cuts in the translation and publication of the verbatim and summary records, deciding that the status quo should be maintained (resolution WHA31.13).

Definitions

2. Verbatim records are a formal, word-for-word record of the proceedings of meetings arranged in chronological order by agenda item, and including the details of voting. The practice in WHO is to prepare verbatim records only for the plenary meetings of the Health Assembly; the records of the discussions in the Executive Board and the main committees of the Assembly are in the form of summary records, which indicate in reported speech the salient points of what was said and show all the decisions taken, but are not a word-for-word account.
3. The record of each plenary meeting of the Health Assembly is first produced in the form of a provisional verbatim record. The provisional verbatim records are in due course corrected, translated and edited, and issued together to form the definitive verbatim records.

<sup>1</sup> WHO Official Records, No. 248, 1978, pp. 555-558, 561-565.

<sup>2</sup> WHO Official Records, No. 242, 1977, Part I, resolution EB60.R7 and Annex 2 (Report of the Ad Hoc Committee on Documentation and Languages of the Health Assembly and the Executive Board).

Production procedure

4. Provisional verbatim records of each plenary meeting are produced in a six-language version, including each statement in the language in which it was delivered (Arabic, Chinese, English, French, Russian or Spanish). On the first or second day after the meeting they cover, the provisional verbatim records are circulated to participants so that speakers can make any corrections they wish. With the necessary translation and editing, definitive verbatim records are then compiled in four separate single-language versions (English, French, Russian and Spanish), which are printed and distributed.

Purpose of verbatim records

5. The verbatim records serve various purposes. The supreme governing body of WHO is the World Health Assembly meeting in plenary. The agenda of the Health Assembly is divided among the plenary and the two main committees. Some of the most important items are discussed only in plenary, and all final decisions are made by the plenary. The items considered in plenary include the election of officers of the Health Assembly and of Members entitled to designate a person to serve on the Executive Board, the general debate on the reports of the Executive Board and the Director-General's annual or biennial report on the work of WHO, the adoption of resolutions (see paragraph 7), the presentation of awards, the report of the General Chairman of the Technical Discussions, and items of particular importance, examples of which have been the study of the Organization's structures in the light of its functions and the declaration of the global eradication of smallpox. The verbatim records provide an accurate and complete record of these proceedings.

6. A large part of the plenary proceedings is taken up by the general debate. It is there that heads of state and ministers of health make their policy statements, that the Director-General introduces his annual or biennial report, and that the representatives of the Executive Board formally report to the Health Assembly. The verbatim records ensure that all these statements are printed and circulated to participants. The statements by chief delegates on this item, which often include a description of the health status of the country concerned and its progress towards achieving health for all, have been deemed to fulfil Member States' obligation to report annually to WHO in accordance with Articles 61 and 62 of the Constitution. The plenary proceedings also contain Members' policy proposals and comments on the Organization's work and programmes. If those views, expressed in the various languages, are to be studied and taken into account by the Director-General, they need to be translated and made available in writing. Similarly, delegations may wish to study the comments of other Members and, as sometimes happens, to ensure that the record formally shows their reply to remarks of a political nature.

7. All resolutions and decisions of the Health Assembly are adopted in plenary. The voting on the adoption of resolutions, as opposed to preliminary approval in the main committees, is recorded only in the verbatim record, which also shows formal reservations and explanations of vote.



## Appendix 3

BIENNIAL COSTS INVOLVED IN THE PRODUCTION OF VERBATIM RECORDS<sup>a</sup>

	Current costs	Alternatives			
		1	2	3	4
	US \$	US \$	US \$	US \$	US \$
Typing	88 400	5 100	42 600	75 300	66 400
Editing	38 200	-	8 400	27 600	27 600
Translation	51 200	-	-	29 000	29 000
Layout	9 300	200	1 700	7 300	6 400
Typesetting (for covers)	700	200	200	700	400
Printing and binding (including cost of paper)	57 600	900	29 400	61 700	44 300
Distribution <sup>b</sup>	7 400	42 300 <sup>c</sup>	7 400	14 900	7 400
Supplies (cassettes and additional recording equipment)	-	94 200 <sup>c</sup>	-	-	-
Temporary staff	-	10 000	-	-	-
Subtotals	<u>252 800<sup>d</sup></u>	<u>152 900</u>	<u>89 700</u>	<u>216 500</u>	<u>181 500</u>
Russian version	<u>54 400<sup>d</sup></u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
TOTAL	<u>307 200<sup>d</sup></u>	<u>152 900</u>	<u>89 700</u>	<u>216 500</u>	<u>181 500</u>

<sup>a</sup> All costs are biennial and are based on 1984-1985 prices and salaries.

<sup>b</sup> Swiss postal rates are expected to rise by roughly 55% in 1986, thus increasing distribution costs.

<sup>c</sup> Distribution and supplies for alternative 1 (the provision of cassettes and a synopsis) are costed on the assumption that 200 recipients are each provided with a 64-cassette set in the language of choice and a 64-cassette set of the floor channel: a total of 25 600 cassettes weighing over 2 tonnes, with packing (the current initial print-run of the verbatim records is 1550 for Member States and other non-Secretariat recipients, plus 400 for recipients within the Secretariat). In addition to these direct costs, it should be noted that the tapes themselves have commercial value, regardless of what is recorded on them, and would possibly be subject to delays and customs duties in many countries, unlike the printed verbatim records, which are not.

<sup>d</sup> The figure of US\$ 252 800 refers to the provisional (six-language) version and to the final English, French and Spanish versions of the verbatim records. The definitive verbatim records in Russian are produced under contract, and their cost during the biennium 1984-1985 was US\$ 54 400. The total cost during the biennium for the four languages was therefore US\$ 307 200.

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Appendix 4IMPLICATIONS OF REPLACING THE PRINTED VERBATIM RECORDS  
OF THE HEALTH ASSEMBLY BY TAPE RECORDINGS

1. Accessibility of the record. There would no longer be an easily accessible record of the plenary meetings of the Health Assembly. Records in the form of tape recordings would be much more difficult and inconvenient to consult and compare. Instead of a complete word-for-word printed record in one of four of the official languages, Member States would have a tape recording of the original interventions (in a mixture of six languages) and a tape recording of the (inevitably imperfect) simultaneous interpretation into one of the six languages. Special equipment would be required for using the recordings, and in some countries the importation of tapes would probably be more complicated than receiving documents by post.
  2. Duration of the general debate. Resolution WHA20.2 encourages delegates to limit to 10 minutes their speeches in the general debate in plenary. It also permits them, if they so wish, not to deliver their speeches but to hand in prepared texts of not more than 20 typewritten double-spaced pages for inclusion in extenso in the verbatim records. This procedure has the advantage of shortening the debate and eliminating the need for tape-recording, interpreting, and transcribing the speech. A modification of the resolution WHA20.2 procedure is also used: the delegate delivers his or her speech in a shortened form, but submits the full text for inclusion in the verbatim records. The proportion of the total text of the verbatim records supplied under these two kinds of procedure has in recent years averaged 16%. If there were no written records and delegates wished to make the same length of contribution as before, they would have to do so orally instead of in writing, and the time taken by the plenary meetings would be increased proportionately.
  3. Depreciation of plenary meetings. All resolutions and decisions of the Health Assembly are adopted in plenary meetings, and the verbatim records show the voting, together with any formal reservations or explanations of vote. If it were not possible for delegations to state their position for the record, compromise might be harder to achieve, and more time might be required in committee to settle differences. Indeed, if the verbatim records were discontinued, statements for the written record would have to be made in the main committees, with the anomalous implication that, since detailed summary records are prepared for these subsidiary bodies, they would have higher status than the plenary meetings, in which heads of state and ministers speak.
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LEARNING FROM DOING  
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## INTRODUCTION

This collection of papers<sup>a</sup> analyses what is being increasingly recognized as a fundamental means of attaining Health for All by the Year 2000 - Health Services Research (HSR). The importance of HSR, much underestimated in the past, stems from the increasing recognition in WHO and elsewhere, that however well health plans are designed a vital element is the effectiveness of health services, and there is a constant need to study and evaluate health care systems.

In HSR the problems of Maternal and Child Health (MCH) care, including family planning, are most urgent. Mothers and children are, after all, amongst the most deprived groups and in primary health care and health development, MCH is a key element. Despite this MCH is often the Cinderella of the health system. If MCH care is to be upgraded it is vital to know the problems that MCH care faces.

This publication illustrates some of the problems of actual MCH care and suggests possible solutions. There is, first of all, a great shortage of information or at least relevant usable information especially about developing countries. A general value of these papers is that national experiences, especially in developing countries, are presented. A particular value of these papers is that they present concrete cases of wide ranging content that might well stimulate others to carry out similar research and to test the findings in different environments, aiming at improved coverage and quality of care.

It is important to emphasize that among different forms of information the in-depth information of the kind that small-scale anthropological research can produce, such as the Congolese study, is useful. The studies in the Upper Volta have shown how difficult it is to integrate participatory observation with other kinds of surveys which may produce different kinds of answers.

What is revealed are the deficiencies of some qualitative and quantitative techniques. The Philippines' study shows the problems encountered where results come too late. Then there is the problem of computers which is likely to be of major concern in many developing countries. The new computer technology can be both a blessing and a curse. Too often researchers can become drowned in a flood of data when such quantification may neither be necessary nor desirable and sometimes may produce misleading results. In some cases the computers simply might break down and there is not an adequate back-up and the researcher loses motivation and the vital time in obtaining rapid research results or to implement self-reliant objectives.

One point is clear though. Studies should not be "top-down" but should involve as much as possible the people themselves, the maximum, that is, of community participation, a feature of the Cuban and Chinese studies to guarantee the maximum of relevance and use for planning. The studies must relate to community needs and expectations. The Swedish study frankly admits that too often studies are too much for the sake of studying. The studies must also include a strong training component; a feature of the Burmese work.

Another value of the studies is that there are many illustrations of intersectoral approaches, problems and possibilities in poverty situations (including refugees, e.g., Gaza). The Philippines' evidence shows how artificial the division between maternal and child health care and family planning can be. The Cuban and Swedish studies show how there can be unexpected and beneficial spin-offs to and from other sectors. The Chinese study is a good example of how the success of a programme depends on not only all the sectors but even all the individuals in a family or street. Intersectoral articulation must be complemented by interpersonal cooperation. The different sectors must work together and in the communities there need to be ways of ensuring that individuals and group conflicts are kept to a minimum.

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<sup>a</sup>Presented at the Sixth Session of the Advisory Committee on Medical Research (ACMR) Subcommittee on Health Services Research, Addis Ababa, 18-21 November 1980.



Finally, it is clear from the studies that many obstacles exist in the health sector, e.g., inappropriate technology and its transfer; inadequate coordination between training, research and health services; insufficient infrastructure and support systems, inequities in coverage. The major application of these studies is to promote a whole range of reforms; better ways of planning; more appropriate, more logical coordination sequences in research and development; better methods of training research workers; better information and a better use of it; more appropriate technology; better ways of involving communities in their own research and consciousness-raising; better use of the media and communication generally; closer relationships between the sectors; greater recognition of cultural and social differences; better coordination of health and development services at the top, and greater encouragement of initiatives from the bottom. Of course these problems are not peculiar to MCH, but mothers and children are more exposed to the abuses which result from inappropriate technology and to the inhumanities of ineffective bureaucracies.

These are some of the challenges and urgent tasks that health services research in MCH will face in the immediate future. This publication is addressed primarily to those concerned with and engaged in MCH and HSR. But it deserves a much wider audience. Pasteur once said (or so it is claimed) that there is no such thing as applied science, only applications of science. At the moment there is an unfortunate tendency for health research to divide into exclusive camps: biomedical (the doctors) and health service (the social scientists). The reasons for this counterproductive schism may be no more than intellectual snobbery, surely an unnecessary and unattractive situation. And the net could be cast wider still to those involved in the much neglected and, for the future, critical area of development services research.





WHO SUPPORT TO HEALTH SERVICES RESEARCH  
IN MATERNAL AND CHILD HEALTH<sup>a</sup>

INTRODUCTION

This paper deals mainly with health services research (HSR) with which WHO has been associated in support of national, regional and global programmes designed to promote the health of women and children. These include the contribution of maternal and child health (MCH) in the context of primary health care, and of HSR in MCH as part of research in support of health for all by the year 2000. This wide scope encompasses the HSR elements of many technical and special research programmes insofar as they relate to MCH.

MCH is much more than a natural concern for WHO: it is a constitutional obligation. One of the functions of the Organization, as outlined in its Constitution, is to "promote maternal and child health and welfare and to foster the ability to live harmoniously in a changing total environment". WHO Expert Committees on MCH have published six reports outlining the ways of implementing this constitutional mandate. Throughout there has been a call for research closely related to action. At its December 1975 meeting<sup>b</sup> the Committee stated:

- "
- the main problem is not so much lack of basic knowledge as the difficulty in applying existing knowledge and implementing care for all mothers and children;
  - ...the need for applied research for developing appropriate and more effective methods of MCH care delivery;
  - ...the need to develop appropriate adapted technologies in MCH care;
  - intersectoral activities for improving the status of women and their participation in health and development programmes are of particular significance for the health of mothers and children."

POLICY BASIS

The Alma-Ata Conference in 1978 stated that MCH including family planning (FP) is one of eight essential elements of primary health care. In 1979 the World Health Assembly (WHA) urged Member States: "to promote the development of primary health care programmes with concrete plans for maternal and child health care as its essential component that includes care during pregnancy and childbirth, family planning, infant and child care with appropriate focus on improvement of nutrition, prevention of infections, promotion of physical and psychological development of the child, and education for family life" (WHA32.42).

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<sup>a</sup>Prepared by the Maternal and Child Health Unit, WHO, Geneva

<sup>b</sup>World Health Organization. New trends and approaches in the delivery of maternal and child care in health services. Technical Report Series, No. 600, Geneva 1976.

The governing bodies of WHO have often endorsed resolutions and recommendations of relevance to MCH and its research component. However, in 1978 and 1979 specific resolutions on MCH were passed, namely WHA31.55 and WHA32.42, referred to above, entitled "WHO long-term programme for Maternal and Child Health". The following are paragraphs relevant to research:

"The Thirty-second World Health Assembly:

1. URGES Member States:

(10) to support research and development as well as evaluation in the area of maternal and child health as part of health services research.

2. REQUESTS the Director-General:

(6) to further develop the Organization's activities for the development of appropriate technology in maternal and child health care and promote health service research in this field;

(7) to intensify efforts for providing additional support for the Organization's programme in maternal and child health and to mobilize scientific and financial resources in this field."

WHO's Global Advisory Committee on Medical Research (ACMR) in 1979 endorsed a proposal of the Subcommittee on Health Services Research that primary health care, and, within it, MCH, should be considered a particularly relevant topic (ACMR/HSR.3.79).

The establishment of Regional ACMRs in the late 1970s (PAHO's ACMR has met annually since 1960) brought into focus new concerns. By 1979 four RACMRs had stressed the MCH aspect of family health as a most important substantive area of HSR in primary health care.

The most recent report on activities of the Regional ACMRs has emphasized comprehensive health services, family planning, immunization, nutrition, diarrhoeal diseases, and appropriate technology as major areas for HSR in respect of primary health care.

The UNICEF/WHO Joint Committee on Health Policy (1979) recommended (and this recommendation was later endorsed by the governing bodies of the two organizations) that, in promoting the establishment of national health development networks, WHO and UNICEF should:

"Identify and strengthen existing national and regional institutions involved in various aspects of maternal and child health, in particular, national research, development and training centres, and support the development of new institutions where required. The work of these institutions could include: (a) teacher-training in appropriate MCH care including modern educational methods; (b) health services research on the development and implementation of MCH care and relevant technology, including appropriate research training; (c) studies in family self-care and community participation in MCH care including childbearing and childrearing



patterns; (d) systematic exchange of information among workers from various disciplines in health and other sectors involved in the health and social wellbeing of mothers, children and families"<sup>a</sup>.

The policy basis of other programmes affecting the health of mothers and children is equally important for MCH/HSR, but is not dealt with here.

#### CURRENT STATUS OF MATERNAL AND CHILD HEALTH (MCH)

The health status of mothers and children and the trends in MCH care within the health care system have been described recently<sup>b</sup>. The appalling hardships faced by two-thirds of the world's people affect most severely women of childbearing age and children. Of the total world population, 24% are women of reproductive age and 36% are children below 15 years of age. More than one-third of the world's population in the year 2000 has yet to be born. More than 2500 millions of the projected population of more than 6000 millions will be under 20 years of age.

The basic principle underlying MCH care is that there are specific biological and psychosocial needs inherent to human growth, which must be met to ensure the survival and healthy development of the child and future adult. MCH care is not a form of "service" conveniently "packaged" to fit the age and sex characteristics of a population group, nor is it an activity designed to deal with a specific disease. It is, rather, a type of care concerned with the total process of growth and development, which is the foundation of human life.

Family health, although concerned with the health of the family as a whole, is specially concerned with pregnant women, mothers and young children, because of their special biological and social vulnerability. In caring for these groups MCH programmes as part of the health services have met similar problems as other programmes - low coverage, under-utilization of services, inappropriate technology, etc. However, the concept of vulnerability has implications for any type of health care. It calls for preventive care, continuity of care for all, individual monitoring, and specific actions when deviations from normal progress are detected. In an attempt to contribute to the solution of these problems many small- and a few large-scale HSR projects have been carried out over the years by individuals, universities, research institutions and lately also by government ministries and WHO.

#### National MCH/HSR activities

The extent of current HSR in countries is not known, but the available information indicates that there is a growing number of projects. In some countries (e.g. Canada, Egypt, India, Malaysia, Czechoslovakia, New Zealand, Norway, Sweden, UK, USA) national medical research bodies have emphasized HSR and promoted HSR in relation to MCH. They illustrate how health services try to meet the needs of mothers and children and to overcome the problems they encounter. The subjects for research cover a wide spectrum, and the methods used show great variation, but whether or how the results are applied is not always known.

The following is one possible classification of health services research in relation to MCH:

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<sup>a</sup>Training in Maternal and Child Health. JC22/UNICEF-WHO/79.4

<sup>b</sup>Maternal and Child Health. (Doc.A32/9) Report by the Director-General presented to the 32nd World Health Assembly. May 1979.



1. HEALTH SYSTEMS ORGANIZATION BASED ON PRIMARY HEALTH CARE - (a) development and testing of alternative patterns of organization and management of care, with emphasis on population coverage, continuity of care for all, and effective and efficient care; (b) development and testing of alternative concepts concerning the functions, levels and training of health workers, including the development of self-care and active family and community participation; (c) improvement of the management information system and its use at all levels of the health service, including feed-back to the community.
2. HEALTH TECHNOLOGY ADAPTATION - Simplification and adaptation of existing or emerging specific techniques and procedures to local circumstances and resources. The technology will have to deal with those important to all age groups but be particularly adapted to the growing individual and, furthermore, with those needed for the specific problems of pregnancy, childbirth and childhood. Special emphasis has to be given to promotional technology.
3. HEALTH STATUS INDICATORS - Identification and quantification of health status, health problems and health needs, as perceived not only by the health worker(s) but equally by the people themselves.

#### Regional MCH/HSR activities

In all regions there are WHO-supported projects in MCH/HSR and its related areas. A summary of regional activities in FHE/HSR follows below:

In the African Region, there is emphasis on nutrition in the PHC context, particularly maternal undernutrition and low birth-weight. A three-year project covering most countries in the region has been proposed, to promote infant and young child nutrition. Two small-scale national projects have been funded.

In the Region of the Americas one area of emphasis has been an action-oriented research, development and training programme in nutrition. Another much-supported area is perinatal care, including appropriate technology. Studies coordinated by the Latin American Centre for Perinatology (CLAP)\* are in progress and have led to results already incorporated in health care systems.

The Eastern Mediterranean Region emphasizes HSR training aspects and conducts courses. A coordinated study of health service coverage has been carried out in three countries. Maternal mortality and morbidity, diarrhoeal diseases, and infant and young child malnutrition have been identified as priority problems. Protocols are being prepared for many MCH/HSR studies such as the evaluation of TBAs, incidence and prevention of low birth-weight, and incidence of maternal mortality and of neonatal tetanus. A protocol for a study of the incidence of hypertensive disorders of pregnancy has been completed as part of a global collaborative study.

The Regional Office for Europe is planning HSR projects in three priority areas. The first comprises four aspects of perinatal services: prenatal care, neonatal intensive care, registration and collection of birth-weight data, and characteristics of the perinatal service in relation to parent-infant attachment. A description of the existing services is under preparation and intervention studies based on the risk approach are being designed. The second is the care of children with chronic diseases and handicap, in institutions and in the family. The third is the design and evaluation of innovative approaches to the school health services.

The Regional Advisory Committee for Medical Research (RACMR) for the South-east Asia Region, in 1979, recommended priority support for a comprehensive regional research-cum-action programme in nutrition. The recommendations of a consultative meeting on the requirements for

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\*CLAP - Centro Latino Americano de Perinatologia y Desarrollo Humana



research in family-planning aspects of family health programmes have been endorsed. The research needs for "Health for all by the year 2000" are being reviewed and a strategy is being elaborated. WHO is supporting several MCH/HSR projects, in the following areas:

- outcome of pregnancy, including perinatal mortality and morbidity, with emphasis on low birth-weight (five countries); the risk approach in MCH care (three countries); a simplified MCH data-collection card (one country); strengthening of basic immunization programmes in urban communities (one country); diarrhoeal disease control (planned).

Priorities in the Western Pacific Region are primary health care, financing of health services, and use of technology. The Regional Office is developing an information system and generating funds for external support of national efforts. There is a growing awareness in the region of the need for research on alternative ways of strengthening the delivery of MCH care services, with particular interest in integrating MCH care with PHC, making the best use of manpower, and studying different means of financing services.

Related programmes such as immunization, control of acute respiratory infections and diarrhoeal diseases, and family planning are considered in the PHC perspective. Several WHO-supported research activities are in progress in the region; the following are some examples:

- the risk approach in MCH care; a MCH/population project emphasizing community participation and using the risk approach; MCH and PHC with focus on the mobilizing and restructuring of health manpower resources and on the integration of family planning with MCH; use of oral rehydration salts; HSR in family planning as part of the Special Programme of Research, Development and Research Training in Human Reproduction:

- (a) use of non-physicians to provide clinical family planning care (two countries)
- (b) cost-effectiveness in family planning in relation to (a);

perinatal care studies (two countries); acute respiratory infections in childhood (two countries).

#### Global MCH/HSR activities

The global effort is directed at problems and priorities identified at national levels and there is full collaboration with national authorities and with the WHO Regional Offices. There are four major foci of effort: research methodology; training for research and for the strengthening of national institutions; utilization of results and information exchange; and technical cooperation with countries, regions and other programmes.

Examples of MCH/HSR activities in progress follow:

#### i. Risk approach in MCH/FP care

The risk approach can be considered a managerial tool for developing local strategies and determining the content of maternal and child health and family planning care by means of a flexible and rational distribution of resources, based on measurements of levels of individual and community risks. Its aim is to give special attention to those in greatest need within a framework of improved health care for all.

National study groups define risk indicators and levels of risk by means of epidemiological studies of health problems and analysis of the health care system. On this basis intervention strategies are formulated to be tested by matching levels of risk with levels of resources. Studies on the Risk Approach in MCH Care have been launched in Malaysia, Turkey, Cuba, Burma, Thailand and India and in the Gaza Strip. It is expected that by 1982/83 about 15 countries will be making systematic use of the method in managing MCH care. The development of the collaborative study is illustrated in Table 1. The studies are undertaken over a three-year



period, and are carried out by national groups in which ministries of health, universities and other organizations are represented. The first comprehensive results are expected, from Turkey and Malaysia, in 1981.

Regional task forces meet when necessary to monitor, support and set up national studies. A Global Scientific Advisory Group meets regularly to further develop scientific methods and support national studies and regional task forces. National workshops are to be organized in connexion with yearly meetings of "mini" task forces for the purposes of organizing the study, training national staff and reviewing findings. So far some 50 research workers have taken part in the systematic application of the risk approach.

The conceptual framework of the risk approach, published in 1978<sup>a</sup>, is to be revised in 1981 on the basis of the experience gained from the first national studies. There is special emphasis on a "risk methodology" to study the interface between the health care system and self-care. A handbook on how to plan and carry out risk research studies is being prepared, for use particularly in national and regional workshops for national groups who wish to learn methods of risk-approach studies.

An annotated bibliography covering 1975-80 has been prepared and is now available.

ii. Reproductive health in adolescence

Collaborative studies on the biomedical and psychosocial aspects of reproductive health in adolescence are designed to reduce the risk attached to teenage pregnancy. As a basis for the HSR component of these studies, cross-cultural surveys were carried out in 14 countries in 1978 under a programme entitled Reproductive Health of Adolescents: Educational and Service Aspects. A Global Task Force, formed in 1975, has been assisting in the development of the studies. Regional meetings have been held in the European, South-east Asian and Western Pacific Regions to promote service-oriented research and action programmes, and have already resulted in three country projects. The development of the programme is illustrated in Table 2. Over 25 investigators have had project support from WHO. The information obtained from the research activities will be made available to policy-makers and administrators to increase their awareness of adolescent reproductive health so that this problem area may be emphasized in national programmes.

iii. Perinatal care

The high level of maternal mortality and morbidity, and the similarly extremely high figures for perinatal mortality and morbidity, are of great concern to most developing countries. Low birth-weight is the main factor related to high perinatal mortality and subsequent morbidity in all countries of the world<sup>b</sup>, and their prevention most probably depends mainly on action outside the scope of the health care system. However, an appropriate organization of MCH services is needed, including child-spacing advice to individuals as part of primary health care, immediate action when pregnancy abnormalities are detected, and the use of appropriate techniques at delivery and in the neonatal period.

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<sup>a</sup>WHO Offset Publication No. 39, Risk Approach for Maternal and Child Health Care, Geneva 1978.

<sup>b</sup>The incidence of low birth weight: A critical review of available information.  
World Health Statistics Quarterly 33(3): 197-224 (1980).



A number of surveys have been undertaken to contribute to the solution of these problems. Epidemiological studies of the incidence of hypertensive disorder of pregnancy are in progress in 11 countries. A protocol has been drawn up for assessing the incidence and main causes of low birth-weight. An inventory and evaluation of perinatal technology has been made. A strategy of action based on community concern and priorities is under discussion in a few countries. The possibility of establishing regional centres, similar to the Latin American Centre for Perinatology, is under discussion.

#### iv. Education and planning

In strengthening national capacity for teacher-training in MCH care, it became evident that more information and experience had to be gained on simple, useful, relevant approaches to education and planning, and therefore a service research project has been set up to deal with the following issues:

- methods of selecting candidates for training in MCH care;
- methods of defining MCH tasks for different categories of health workers;
- instruments for assessing performance;
- methods of supportive supervision of field workers in relation to MCH tasks.

The project deals particularly with countries which are short of resources, manpower and research capacity.

#### Other relevant programmes

Health education. WHO is collaborating with countries in health education research projects designed to find the most effective ways of educating the public to adopt healthful habits. Projects include the role of health education in reducing infant morbidity and mortality (Jamaica), the impact of primary health centres as seen by the consumer (India), the role of volunteers in health promotion (Sri Lanka), and the testing of a model of adoption of health practices (Korea).

A Task Force on Research in Health Education in Family Health, which was convened in Geneva in 1978, was the first of a series of task forces, regional and interregional, organized to devise regional strategies and determine the need for research in health education and community participation. Its recommendations stressed the importance of research in ways of promoting the people's involvement in, and responsibility for, their own health care, and their collaboration with primary health care workers; the need for decentralized responsibility for research to meet the needs of particular institutions or programmes; and the training in health education methods of all levels of health worker.

Nutrition. MCH and nutrition programmes have mainly the same target groups: pregnant women, mothers and young children. The major objective of nutrition programmes in primary health care is to show how community resources can be used by the people to prevent protein-energy malnutrition. The central issue is the improvement of the nutrition of pregnant women and young children by the more effective use of a country's food. Operational research has begun at country level to identify "nutrition components" of primary health care programmes.

Part of the contribution to nutrition research has been the WHO Collaborative Study on Breastfeeding, which had two parts: the first, an epidemiological survey of prevalence and duration of breast-feeding; and the second, a study on volume and composition of breast milk. Critical factors affecting breast-feeding behaviour were identified within the health care system in all nine participating countries. The following hypothesis is to be tested by HSR: that the prevalence and duration of breast-feeding can be increased by systematic health education messages, particularly during the prenatal period, and by designing health care facilities to make possible early initiation of breast-feeding and rooming-in for feeding on demand.



Communicable diseases. The expanded programmes on immunization (EPI), diarrhoeal diseases control (CDD) and acute respiratory infections (ARI) have the very important objective of reducing mortality and morbidity in a community. These programmes have a common target group: young children and pregnant women.

Specific recommendations for integrated health care, beginning with support for family self-care, were made in a report of a scientific working group on child care practices related to diarrhoeal diseases (WHO/DCC/79.4). Similarly, a recent meeting on acute respiratory infections underlined the primary health care approach including the importance of studying beliefs, practices and behaviour<sup>a</sup>.

As the child's nutritional status affects his response to these diseases the importance of breast-feeding and feeding during disease episodes has to be emphasized. National studies have revealed new facts which must be incorporated in all national health care programmes.

Other WHO programmes of significance for MCH care are the Special Programme of Research Development and Research Training in Human Development, Strengthening of Health Services, Health Manpower Development, and Health Statistics Information.

Examples of MCH collaboration with these programmes are: studies to determine the social costs of MCH/PHC programmes; to understand the degree of intersectoral collaboration at various levels which has the best effect on health status; and, in school health, to find out how pupils and teachers can effectively promote health, how school health curricula can be designed, and how screening for deviations in physical, emotional and social health can be made effective and efficient; national maternal and perinatal mortality studies; the establishment of information systems at the peripheral level of the health care system; and the comparison of "take-home" family records with records of the existing system.

#### National efforts in MCH/HSR

These seem to be rather limited, and even the industrialized countries are only at the beginning. However, there is enough evidence that major results have been used for the changing of health policies or the improvement of services<sup>b</sup>. Another example is provided by operational research with emphasis on family health in Korea, Malaysia and the Philippines in the early 1970s, which has resulted in major changes in the health care delivery system. In respect of perinatal technology, for example, CLAP has conducted extensive physiological studies on the optimal position of the mother in childbirth and found it to be the erect position. This result has been applied in many Latin American countries.

Studies on the risk approach have resulted in a number of improvements in services. The training programmes for TBAs have been revised in Malaysia and Turkey, the cooperation between midwives and physicians improved substantially in Turkey, and the hospital referral system and its financing have been changed in Malaysia. Furthermore, in spite of geographic limitations and the availability of only preliminary results, the risk approach has been included as a main strategy for MCH care in the newly endorsed plan for Malaysia.

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<sup>a</sup>Clinical Management of Acute Respiratory Infections in Children: A WHO Memorandum. WHO Bulletin, 59, No. 5, pp 707-716, 1981.

<sup>b</sup>A general note of caution on the criteria for the use of HSR in decision-making must be added. Policy decision-making situations rarely fit the assumptions of rational problem-solving models. Research may point out issues, measure their extent and seriousness, suggest the likely effects of alternative interventions, and influence the context and quality of policy debate. It cannot, however, be substituted entirely for the political process through which value choices and judgements about possible outcomes are explicitly and implicitly incorporated into policy decisions (Report of a study on HSR, Institute of Medicine, National Health Sciences, Washington, D.C., 1979).



## IMPLICATIONS FOR MANAGEMENT

MCH care, concerned as it is with healthy growth and development of every human being, demands a great degree of participation at all levels of society. A spectrum of HSR has been outlined and there has to be a spectrum of locally adapted organizational arrangements. A main challenge is to include those usually without decision-making power, namely the poor and women. Involvement of sectors other than health in defining problems and suggesting solutions is essential for any substantial progress to be made.

## RESOURCES - MANPOWER

It is fundamental that health workers at all levels take part in efforts to develop national MCH/HSR. They should also be ready to involve the community in problem identification, planning of research and data gathering. It is first a matter of developing a scientific attitude of rational, critical and challenging enquiry and scrutiny of the evidence. But, because some may view the scientific attitude as western and ethnocentric, there must also be an evaluation of the appropriateness of research for each culture and community.

Additional knowledge is needed which relates to the use of evidence to introduce innovation and change. So far, very few countries have a cadre of people, whether physicians or administrators, concerned with MCH who have acquired this skill. A focal point, or better still a core group, would therefore be needed in most countries.

However, MCH and family health professionals, because of the nature of their training and work, ought to have an understanding of family and community needs. This would facilitate their HSR engagement for PHC and health for all. But their postgraduate training rarely includes systematic exposure to problem-solving or research methods. They work full-time in governmental and/or private services, where there are few opportunities for study or innovation. Potential leaders in the MCH/HSR field who might work with other sectors, particularly with social and behavioural scientists, are fully engaged as clinicians, and are further constrained by shortages of time and opportunity. As MCH/HSR lacks, and will lack, the highly respected institutional basis (such as laboratories), it is fundamental that national authorities and WHO endorse the right of clinicians to undertake HSR and make time and resources available for such studies. Because of its "soft" nature, health research in family health rarely has the support of national research councils.

In some industrialized countries, but by no means all, research on MCH problems has become well established, and there are a number of HSR experts in the western world. The skewed distribution of the availability of the experts is, however, a major problem. In the developing world, scientists who concentrate on MCH problems are very scarce. Family planning programmes, however, have improved the position. Very few countries have as yet planned HSR activities in general and fewer have translated the MCH/family planning emphasis into action.

Table 1. TIMETABLE OF ACTIVITIES IN THE DEVELOPMENT OF  
WHO COLLABORATIVE STUDY ON RISK APPROACH IN MCH/FP CARE

Year	MEETINGS / WORKSHOPS			NATIONAL STUDIES
	Global	Regional	National	
1975	Development of concept and methods			Turkey
1976				Malaysia
1977			"Mini"-task force meeting, Turkey	
1978	Meeting of task force & principal investigators, Geneva			
1979		EURO perinatal study group meeting, Athens	"Mini"-task force meeting, Malaysia	Cuba
1980	Educational workshop, Nottingham		"Mini"-task force meeting, Turkey Korea	Burma, India, Thailand
		EURO perinatal study group meeting, Oxford		
		AMRO regional workshop, Bogota		
1981	Meeting of a scientific advisory group Geneva Educational workshop, Geneva	AFRO/EMRO workshop, Nairobi AMRO workshop, Dominican Republic WPRO workshop, Manila	"Mini" -task force meeting, Cuba	



TABLE 2

TIMETABLE FOR DEVELOPMENT OF THE PROGRAMME:  
REPRODUCTIVE HEALTH IN ADOLESCENCE

MEETINGS/WORKSHOPS		SURVEYS/STUDIES	
GLOBAL	REGIONAL	TITLE/SUBJECT	COUNTRY
		1974	
Meeting on PREGNANCY AND ABORTION IN ADOLESCENCE (Geneva 24-28 June)			
		1975	
Consultations on: CONTRACEPTION IN ADOLESCENCE (Geneva 8-10 September)			
		1976	
Meeting of TASK FORCE ON REPRODUCTIVE HEALTH IN ADOLESCENCE (RHA) (Geneva 4-6 August) Expert Committee on: HEALTH NEEDS IN ADOLESCENCE (Geneva 24 September - 4 October)		Production of a core Protocol for the study of menstrual and ovulatory patterns in adolescent girls	
		1977	
Meeting of the TASK FORCE ON MENSTRUAL AND OVULATORY PATTERNS IN ADOLESCENT GIRLS Meeting of STEERING COMMITTEE OF TASK FORCE ON RHA (Geneva, 6-9 December)		Survey of FAMILY LIFE EDUCATION AND SERVICES (interregional study)  Initiation of Studies on: (a) Growth and Development (b) Other Biomedical Studies (c) Service Oriented Research	16 Countries
		1978	
Consultation on: STUDIES OF EFFECTS OF HORMONAL CONTRACEPTION IN ADOLESCENTS (Geneva, 3-5 May) Consultation on: STUDIES ON FACTORS AFFECTING CONTRACEPTIVE CHOICE AND USE IN ADOLESCENTS (Geneva, 22-24 May)	<u>EURO</u> Meeting on: SERVICE-ORIENTED RESEARCH IN ADOLESCENT FERTILITY (Warnermunde 24-27 April) (Copenhagen 28-29 April)	(a) Start of: MENSTRUAL AND OVULATORY PATTERNS IN ADOLESCENT GIRLS (interregional study) Longitudinal study to be finished 1982.  (b) Pilot study on AMENORRHOEA AFTER ORAL CONTRACEPTION IN ADOLESCENTS	Israel, Sweden, Switzerland, Hong Kong, Nigeria, Sri Lanka, Hungary  Finland
		1979	
Meeting of the TASK FORCE ON MENSTRUAL AND OVULATORY PATTERNS IN ADOLESCENT GIRLS Meeting of STEERING COMMITTEE of TASK FORCE ON RHA (Geneva 9-13 July)	<u>WPRO</u> Meeting on: RESEARCH NEEDS IN RELATION TO REPRODUCTIVE HEALTH IN ADOLESCENCE IN SOME COUNTRIES OF THE WESTERN PACIFIC REGION (Kuching, Sarawak 11-16 June)	(a) DETERMINATION OF THE ONSET OF SPERM EMISSION  (c) FACTORS AFFECTING THE CHOICE AND USE OF CONTRACEPTION BY ADOLESCENTS (interregional study)  (b) IDENTIFICATION OF RISK FACTORS TO MATERNAL AND FETAL CHILD HEALTH IN ADOLESCENT MOTHERS  (b) OUTCOME OF ADOLESCENT CHILDBIRTH  (a) MALNUTRITION AND PUBERTAL DEVELOPMENT	Israel  Yugoslavia, Nigeria  Turkey  South Korea  Kenya

TABLE 2 (cont.)

TIMETABLE FOR DEVELOPMENT OF THE PROGRAMME:  
REPRODUCTIVE HEALTH IN ADOLESCENCE (continued)

MEETINGS/WORKSHOPS		SURVEYS/STUDIES	
GLOBAL	REGIONAL	TITLE/SUBJECT	COUNTRY
		<u>1980</u>	
<p>Working Group on Processing and Analysis of Data of Menstruation Study (Geneva, 3-7 February)</p> <p>Meeting on ADOLESCENT SEXUALITY AND REPRODUCTIVE HEALTH; EDUCATION AND SERVICE ASPECTS (Mexico 28 April - 2 May)</p>	<p><u>WPRO</u> Regional Working Group on HEALTH NEEDS OF ADOLESCENTS (Manila 12-18 March)</p>	(c) ADOLSCENTS' UTILIZATION OF MCH/FP SERVICES (5 sub-studies)	Malaysia
	<p><u>SEARO</u> Meeting on: REPRODUCTIVE HEALTH OF ADOLESCENTS IN SOME COUNTRIES OF THE SOUTH-EAST ASIA REGION OF WHO (Bangkok 28 July - 2 August)</p>	(c) FACTORS AFFECTING CHOICE AND USE OF CONTRACEPTION IN ADOLESCENT GIRLS	Sri Lanka
	<p><u>EURO</u> Working Group on: RESEARCH NEEDS AND APPROACHES IN ADOLESCENT REPRODUCTIVE HEALTH IN DEVELOPING COUNTRIES OF THE WHO EUROPEAN REGION (Lisbon 4 - 8 August)</p>		
	<p><u>WPRO</u> Working Group on: ADOLESCENT FERTILITY MANAGEMENT (Manila 13 - 17 October)</p>		
		<u>1981</u>	
<p>Meeting of Principal Investigators of Studies on MENSTRUAL AND OVULATORY PATTERNS (Geneva 5 - 7 August)</p> <p>Meeting of STEERING COMMITTEE OF TASK FORCE ON RHA (Geneva 8 - 9 August)</p>		(c) DEVELOPMENT OF TEACHING PROGRAMME IN HUMAN REPRODUCTIVE HEALTH FOR SCHOOL CHILDREN	Sri Lanka
		(c) ADOLESCENT KNOWLEDGE AND BEHAVIOUR IN RELATION TO REPRODUCTION	Portugal
		(c) ADOLESCENTS' UTILIZATION OF MCH/FP SERVICES	Portugal



THE RISK APPROACH IN MCH CARE IN BURMA

U Tin U<sup>a</sup>

Maternal and child health care (MCH) is a major part of Burma's People's Health Programme (Country Health Programme). Burma's cooperation in the WHO Collaborative Study on Perinatal Mortality (1978) helped to define the country's MCH problems. The baseline data were intended to be the basis for devising intervention strategies for maternal and child health care. This paper discusses only the perinatal component of those strategies: first, the more pertinent findings of the perinatal project, which permitted the identification of the characteristics of a high-risk mother (experiencing a perinatal death); and second, the protocol design for the project on the risk approach. The latter project is an important aspect of health services research for evaluating some of the base programmes, and if successful the strategy being investigated may be incorporated in the country's health plan.

THE PERINATAL PROJECT

Few data were available on pregnancies and outcomes at the community level. Previous vital statistics were hospital-based and showed either over-reporting of morbidity and mortality if the data were from a referral centre, or under-reporting if the data were gathered by basic health staff. Consequently, a working group was formed of staff members of the health teaching institutes and health services to study the epidemiology of maternal and child health in Burma. The working group designed a study with two objectives:

1. To obtain information on pregnancy and its outcomes in one or more rural and urban areas associated with a medical school.
2. To define in depth the problem of perinatal mortality and morbidity of low birth-weight babies in one or more teaching hospitals as well as in the urban and the rural communities.

Method: two areas were selected, one urban and one rural, of 50 000 population each, for a house-to-house survey. Household data were collected on demographic aspects and socioeconomic status in the sample areas and a retrospective interview was carried out on the vital events that had occurred in the households over the previous 12 months. Pregnant women in the population were identified and followed up for a period of 12 months. The deliveries in two teaching hospitals were studied and data were collected comparable to those collected in the survey. All perinatal deaths were investigated and as many as possible had autopsies performed. The mortality data were reviewed in a multidisciplinary clinico-pathological conference.

Results: the perinatal mortality rate (PMR) in the study area was found to be 48/1000 births (Table 1). This differed from the rate expected from previously published data.

In the two areas 22% of all deliveries were of less than 2500 g. Rural and urban differences were greatest in the 2000-2499 g weight group. The highest weight-specific perinatal mortality rate occurred in the group of less than 2000 g. Although the birth-weight-specific PMR for the 2000-2499 g group was significantly lower than the lowest weight group, it was nearly twice that of infants weighing 2500 g or more.

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Knowing the maternal age, the birth attendant, the presentation, the parity and the residence increased the ability to predict which women were at risk of experiencing a perinatal death.

Fifty percent of all neonatal deaths occurred on the first day (Fig. 2). However, 50% of all rural deaths occurred after two days, a significant difference from the urban areas. A review of the perinatal deaths showed that 62% of the deaths were associated with low birth weight (Table 2).

#### THE RISK APPROACH PROJECT

The risk approach is a managerial tool for the organization of health care designed to identify high-risk women and ensure that they attend the proper level of care. It is a mechanism for the flexible and rational distribution of resources, because it ensures that those who most need services will receive them. As a result of the perinatal project a proposal for a project to test the risk-approach was accepted. The essence of the project is redeployment and reallocation of existing resources, manpower, physical facilities and financial support. The Ministry of Health and the Department of Health have decided to carry out the project and to evaluate the use of the strategy. Eventually the strategy will be extended to the whole country if it is found relevant and applicable under the terms of the projected National Plan.

Background: In Burma the basic health administrative unit headed by a medical graduate is the township. Under each township are various quarters or wards of the town and rural village tracts. In the project being planned the risk strategy is to be applied at the village tract level, i.e., a group of villages served by the most basic part of the health care system in Burma - the rural health unit. The rural health units consist mainly of a main rural health centre, manned by a health assistant and co-workers, together with four or five subcentres each run by a midwife.

Under the Government's self-help scheme two categories of voluntary health worker have been trained to augment the health services so as to achieve greater coverage of the population. These are:

- a) The auxiliary midwife (AMW), with six months' training in midwifery. Most are from the villages they will serve, where there is no midwife. They are supervised by a midwife from a subcentre.
- b) The voluntary health worker, with 21 days' training mainly in environmental sanitation, public health activities and collection of vital and health statistics.

On an average, one rural health unit serves from 15 000 to 30 000 people. Each midwife is assigned to 3000 to 5000 people, and each voluntary health worker to about 1000.

The study area: Two townships, Hlegu and Hmawbi, have been chosen for the project. These towns, although of similar size, have very different health service facilities. Hlegu has 12 rural health centres and Hmawbi only four. One of the criteria for choosing the study area is that not only must it be representative but also it must allow easy communication for optimal supervision and control.

Hlegu, about 50 km north of Rangoon, was the study area for the rural phase of the perinatal project, and the present project is thus a logical extension of that work. Of its 12 rural health centres two pairs were selected. They are similar in population size as well as in having both malarious and non-malarious regions in both the study and control group areas. The study and the control groups were chosen randomly as follows:



Study group:	Indaing	-	population	15 255)	20 637
	Gyogone	-	population	5 382)	
Control:	Phaungyi	-	population	13 412)	18 617
	Kalihtaw	-	population	5 205)	
				Total population:	39 254

Hmawbi is about 50 km north-west of Rangoon, with four rural health units. One has been converted into a 16-bedded station hospital. Thus, for the present project, two of the remaining three rural health centres and the villages served by each were randomly selected as well as randomly allocated to the study and control groups as follows:

Study group:	Yegkyaw	-	population	16 380)	33 602
Control:	Myaungtaga	-	population	17 222)	

It was originally planned to study a population of about 100 000 but, because the rural health centres were used as sampling units, the population coming under the study will be 72 856.

The limitations of manpower and other resources determined that the project area and the size of population had to be confined to villages covered by six rural health centres. Consequently, the findings cannot be said to be representative of the whole country, but the sampling was designed to make them representative of lower Burma, and it is possible that the strategies will be replicated in other parts of lower Burma.

For the two-year period of study the following is an estimate of key statistics:

Total population covered:	-	72 856
Number under five years old:	-	18 214 (25% of the total population)
Expected births per year:	-	2 688 (36.9/1000 population)
Expected perinatal deaths:	-	137 (51/1000 deliveries)
Expected infant deaths:	-	188 (70/1000 live births)
Expected under fives' deaths:	-	208 (11.4/1000 age group population)

#### RISK PROFILE DEVELOPMENT

Based on the identification of the common MCH problems, the various indicators and methods of intervention have been decided on by the panel of research workers.

The risk indicators during pregnancy include:

Age: below 20 and above 35 years of age  
 Parity: primigravida and para 6 and above  
 Height: less than 140 cm  
 Weight: pre-pregnancy weight of less than 40 kg  
 Serious organic disease either before or during pregnancy, e.g. rheumatic heart disease, hypertension  
 Previous fetal loss: abortion or previous stillbirth or early neonatal death  
 Previous loss of child in early childhood  
 Previous history of antepartum or postpartum haemorrhage or hypertensive disorders of pregnancy  
 Previous history of complicated delivery needing intervention or operation  
 Pregnancy interval less than 24 months  
 Anaemia less than 9g/dl in the third trimester  
 Illiterate mother  
 Low socioeconomic status, e.g. husband hired farmhand  
 Multiple pregnancy  
 Malpresentations

The risk indicators at or after delivery:

- Prolonged labour of more than 24 hours
- Delay in the delivery of placenta, i.e. over 30 minutes
- Early rupture of the membranes
- Prolapse of the cord
- Signs of infection in the mother

The risk indicators for the newborn include:

- Birth weight less than 2500 g
- Length less than 46 cm
- Multiple pregnancy
- Cyanosis at birth
- Congenital malformation
- Development of jaundice within two days of birth
- Failure to feed
- Convulsions
- Failure of breast-feeding
- Diarrhoea during neonatal period

The intervention strategies to be used include:

- Detection, referral and appropriate management of complicated and high-risk pregnancies
- Detection of anaemia, correction by iron supplementation
- Detection, referral and management of hypertensive disease of pregnancy
- Reduction of workload of mother during last four weeks of pregnancy
- Immunization of all married women (20-35 years) against tetanus. Pregnant women in control areas will be routinely immunized
- Regular prophylaxis of malaria during pregnancy in the endemic area

#### STUDY DESIGN AND METHOD

The rationale for choosing the design is that in Burma, where the population is mainly rural and coverage by health services is not optimal, this kind of project is a suitable "test case" for testing innovative strategies at the peripheral level.

Alternative designs using management sciences, systems analysis, time and motion studies, and ad hoc and multi-round surveys were suggested and considered before the present research technique was selected for in-depth study of delivery of health care especially in MCH.

Accurate data on morbidity and mortality as well as on patterns of health service utilization are not available. Therefore the study has two phases: a community survey, and a follow-up of all pregnant women for a two-year period.

#### THE COMMUNITY PHASE

The community survey is now under way to obtain baseline data on a rural population of over 70 000. Retrospective data have been collected on the health status of mothers and children in the study community. Data on utilization of health services have also been collected. Five questionnaires (or cards) will be used to collect information in both the study and the control areas: the household information card, the married women card, the card for children under five years, the card for data on delivery within the past 12 months (this card will also be used for the prospective study, for comparison), and the card for information on early childhood deaths (also to be used in the follow-up phase).



Data collection: The basic data are being collected during the community survey by means of house-to-house visits. Regular reporting systems will be established so that the required information on the health status, health care delivery system and vital events may be obtained regularly. The information will come from the basic health staff and the voluntary health workers (auxiliary midwives and community health workers) under the supervision of the project's medical officer.

From January 1981 to December 1982, prospective data on the vital events, service utilization, and health care delivery will be collected from the control and study areas. The efficacy of using the risk approach as a health care strategy in MCH and the effectiveness of the various intervention strategies will be analysed.

#### THE FOLLOW-UP PHASE

All pregnant women and their offspring will be followed up until the end of the first year of life. The outcomes of the pregnancies and the related intervention strategies will be analysed. The data from the control and study areas will be compared.

In the study areas the basic health staff will receive manuals and be trained as a means of reallocating resources for the benefit of the groups at risk. In the control areas the routine MCH care stipulated by the People's Health Programme will be provided.

To ensure that the project is implemented as planned the investigators will have complete administrative control over the basic health staff in the project area. The project will involve changing the staff's work routine.

The experience of the perinatal project brought to light various constraints and difficulties associated with computer analysis of data. Data retrieval was difficult and there was delay in obtaining data for feedback. Therefore, in this project the data are being analysed both manually and by computer.

The basic demographic findings and the data on the under-fives collected during the Community Survey Phase have been partially collated and tabulated. On the completion of the project the information obtained and an evaluation of the various intervention strategies will be made available for the planning of the People's Health Programme.

The research methods and findings, and the information on the outcome of the various intervention strategies, may be applicable to other developing countries with poor rural populations.

#### THE RESEARCH WORKERS

The project is being carried out by the Ministry of Health in collaboration with WHO. The core group of research workers is comprised of those who took part in the perinatal project - staff of the teaching institutions and the Department of Health, postgraduate students in child health and other medical postgraduate students. The staff of the Rangoon Health Division and of the two townships chosen cooperate in the project.

Under the guidance of the Project Director, postgraduate paediatric students participated in the formulation of the project, in designing and sampling, and in the organization of field research work in the community. These students are the country's future paediatricians and, with their research training in this project, will be expected to undertake similar projects in their future posts.

Table 1.

DISTRIBUTION OF OUTCOME OF PREGNANCY  
ACCORDING TO MODE OF DELIVERY  
(ALL DELIVERIES)

Mode of delivery	Total delivery	Stillbirth rate	Early neonatal death rate	Perinatal mortality rate
Normal	5 293	14 (84)	28 (150)	44 (234)
Caesarean section	217	51 (11)	88 (19)	138 (30)
Others	167	24 (4)	12 (2)	36 (6)
Total	5 677	18 (99)	30 (171)	48 (270)



Table 2.

## THE PERINATAL MORTALITY RATES ACCORDING TO BIRTH WEIGHT

Area	2 000 G			2 000 G - 2 499 G			2 500 and above			Total		
	Total	Perinatal deaths	PMR	Total	Perinatal deaths	PMR	Total	Perinatal deaths	PMR	Total	Perinatal deaths	PMR
Rural	98	46 (25+21)	469	205	11 (4+7)	54	1 455	32 (18+14)	22	1 758	89	51
Urban	80	34 (27+7)	425	255	4 (4+0)	16	952	10 (5+5)	10	1 287	48	37
Community total	178	80 (52+28)	449	460	15 (8+7)	33	2 387	42 (23+19)	18	3 025	137	45
N.O.G.H.	110	43 (34+9)	391	270	7 (5+2)	26	963	27 (17+10)	28	1 343	77	57
C.W.H.	62	31 (23+8)	500	191	8 (6+2)	42	1 056	17 (7+10)	16	1 309	56	43
Hospital total	172	74 (57+17)	430	462	15 (11+4)	32	2 018	44 (24+20)	22	2 652	133	50
Grand total	350	154 (109+45)	440	922	30 (22+8)	33	4 405	86 (47+39)	20	5 677	270	48

Table 2.

Figure 1. THE PERINATAL MORTALITY RATES ACCORDING TO BIRTH WEIGHTS

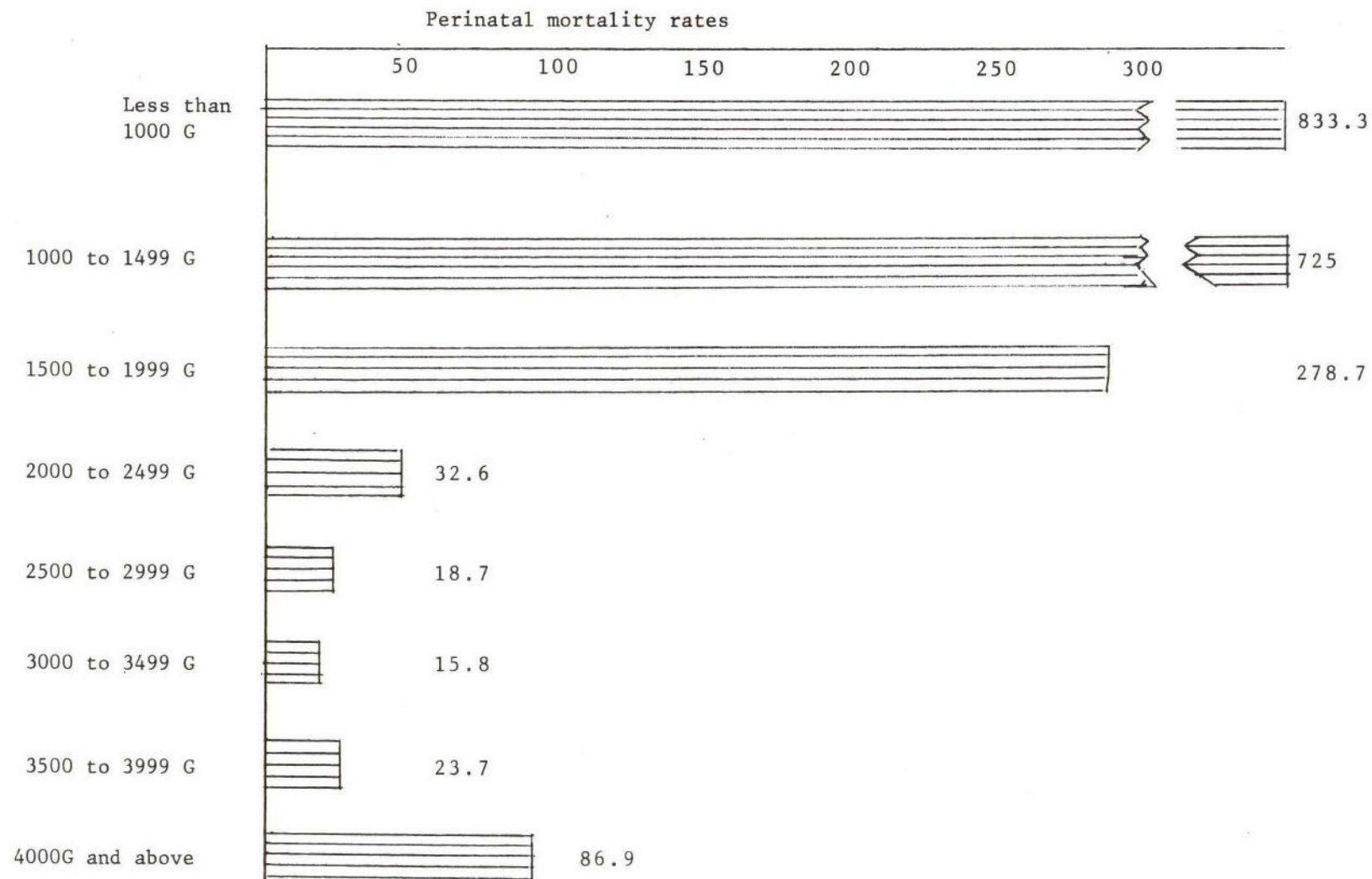
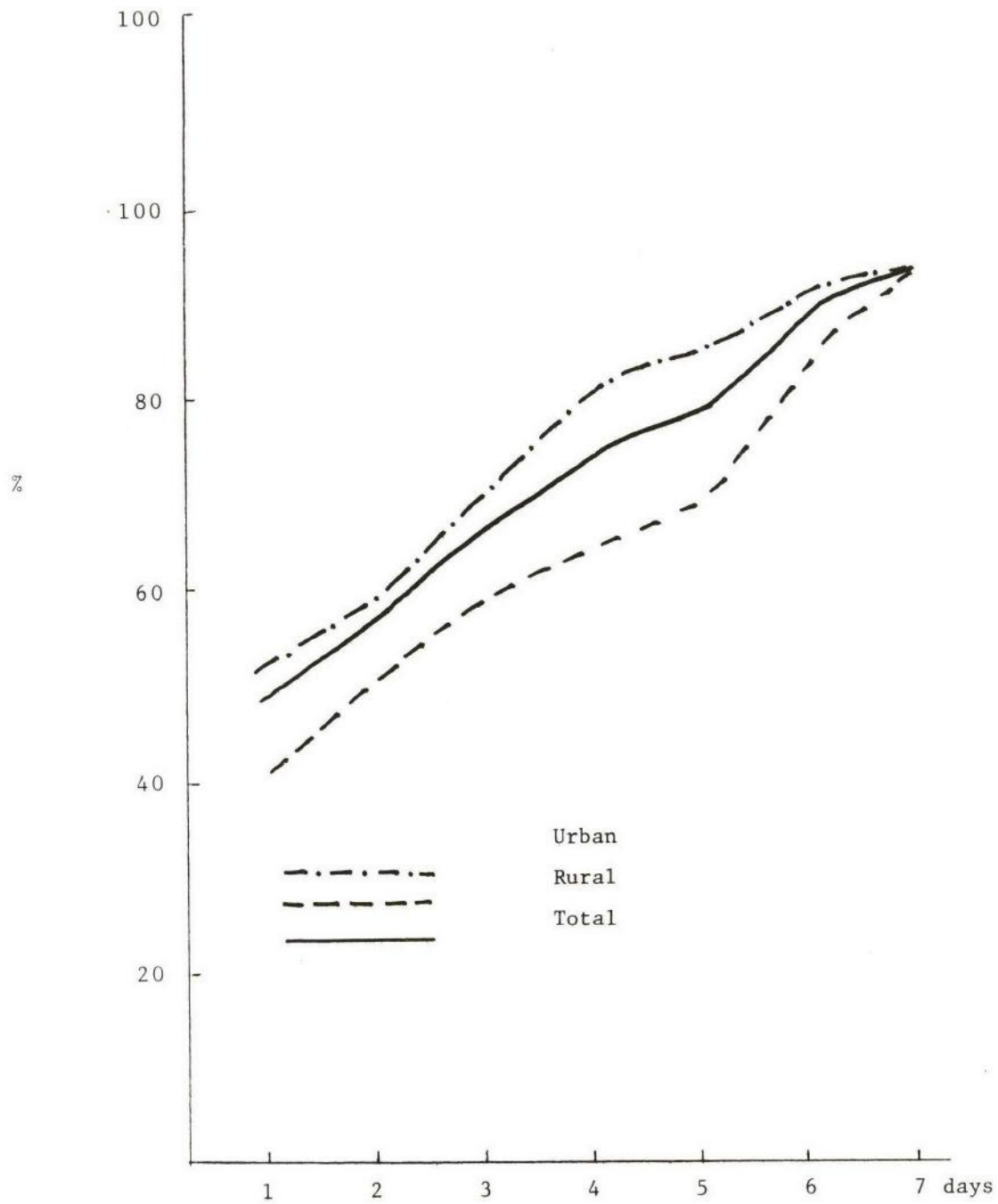




Figure 2. THE TOTAL CUMULATIVE NEONATAL DEATHS IN PERCENTAGE AT THE END OF EACH DAY







COMMUNITY-BASED HEALTH SERVICES RESEARCH IN  
MATERNAL AND CHILD HEALTH IN SHANGHAI

Chen Mei-Pu<sup>a</sup>

The People's Republic of China is divided into 30 administrative districts, consisting of 22 provinces, two autonomous districts and three cities under the jurisdiction of the central government. Shanghai is one of the three cities and is divided into ten urban districts, and ten rural counties, with a total area of 6 100 km<sup>2</sup>. It has a population of 11 million and is the most densely populated city in the country.

In 1949 at the time of liberation the maternal mortality rate was 3.2 o/ooo, and the neonatal mortality rate 20.3%. In 1950 a Maternal and Child Health Division was organized under the Shanghai Municipal Health Bureau with the objectives of making safe deliveries widely available, and generally organizing and training MCH teams. By 1955 it dealt with 95.4% of the births, and the maternal mortality rate was reduced to 0.68 o/oo.

In 1957 a three-level MCH network was established, and the obstetrical care of the whole city was divided and regionalized on the basis of districts and counties. Referral systems and technical supervision were available in hospitals at three levels. Routines and procedures, equipment, registration forms and information systems were unified. However, between 1966 and 1976, MCH organizations at different levels were dispersed, and the obstetrical and gynaecological routines neglected.

1977-1978 was a period of recovery and improvement in MCH services. The MCH network, including the MCH centres and units at different levels, was reorganized and fully staffed. At present there are nine maternity hospitals and 42 general hospitals at municipal or district levels, with a total of 4 794 obstetrical and gynaecological beds. In the adjoining rural areas there are 1 614 obstetrical and gynaecological beds, in 24 county hospitals and 100 commune hospitals. At the production brigades level there are 1 329 cooperative health station units, each staffed with one or two female "barefoot doctors" and 557 birth attendants. All deliveries in the urban areas take place in hospital.

As a result of the reorganization of the MCH network, the reorientation of the training and education of MCH personnel at all levels, and the improved health care system there was a definite decline in both the maternal and the fetal-neonatal mortality rates in 1979.

Maternal mortality	27.9/100 000
Neonatal mortality	9.37/1 000
Urban districts	7.65/1 000
Rural counties	10.24/1 000
Perinatal mortality (12 hospitals)	13.10/1 000

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At present the aims of the MCH services as issued by the Ministry of Health are: to elevate the quality of obstetrical care, to develop perinatal health care, to lower the maternal mortality rate, and to advocate prenatal fetal health diagnosis. All this is designed to improve the health status of the people.

To attain this ultimate objective, we have in the past two to three years begun applied research to develop suitable and more effective methods for MCH care delivery. This involves MCH education of the public, the establishment of a maternal liaison card system to ensure systematic perinatal care, and the introduction of self-monitoring systems. The details of these schemes follow.

1. MOBILIZATION OF MCH SERVICE WORKERS AT ALL LEVELS TO PROPAGATE AND IMPLEMENT MCH SERVICES

1.1 Mass education

Education of pregnant women and their family members lays special emphasis on:

1.1.1 Importance of premarital health care. This includes:

- (1) Premarital examination. Premarital examination is advocated for detection of any disease in the female or the male which might not permit marriage at all, such as physiological defects which interfere with sexual activity, and leprosy, as well as the detection of any disease or condition which might delay marriage, e.g., acute or chronic infectious diseases or organic diseases which are liable to be aggravated after marriage.
- (2) Premarital counselling and family planning education, in which sex knowledge and the anatomy of the reproductive organs of both female and male are briefly presented. At the same time, basic knowledge is given on fertilization, family planning and contraception, including the various contraceptive methods. Clinics for premarital examination have been set up in all ten districts of Shanghai. MCH centres and relevant medical personnel of the hospitals participate in this service.

1.1.2 The importance of early antenatal care and the role of the maternal liaison card.

Emphasis is placed on the significance of early antenatal care (at 3-4 months gestation) for:

- (1) the assessment of basal blood pressure for the prevention and management of toxæmia of pregnancy;
- (2) antenatal diagnosis of women with a family history of genetic abnormalities, or with an obstetrical history of certain congenital diseases or defects;
- (3) early diagnosis of medical diseases complicating pregnancy or preventing adequate health care. If the pregnancy is contraindicated, termination is advised.



The importance of keeping the maternal liaison card is emphasized. The liaison card is a record of the important information on the woman's history and antenatal examinations, available as a reference to the pregnant woman, her family and the MCH workers of the working unit, so that all those concerned can cooperate in promoting health protection in pregnancy.

## 1.2 Antenatal health care and instruction

The priorities of antenatal health care and instructions are given in a number of lessons arranged according to the needs of the different periods of pregnancy. The purpose of this educational component is to enable the pregnant woman and her family to fully realize the need for health care during pregnancy, and the importance of self-monitoring and of knowledge of infant and child health care. In our hospital, information and instructions are given in four lessons, as follows:

Lesson 1 - given before 28 weeks of gestation:

- (1) importance of antenatal visits and examinations;
- (2) nutrition during pregnancy and lactation.

Lesson 2 - given between 28-38 weeks of gestation:

- (1) instructions on fetal movement count;
- (2) exercises for lessening of pain during labour.

Lesson 3 - given at 38 weeks of gestation:

- (1) importance of breast-feeding in nutrition and for protection against infection in infants;
- (2) early postpartum ambulation and exercises;
- (3) importance of postpartum examination.

Lesson 4 - this is a special lesson for expectant fathers and other members of the family. The purposes are:

- (1) further inquiries into the past history of the pregnant woman and the family history;
- (2) seeking the cooperation of family members in
  - reminding the pregnant woman to attend regular antenatal examinations;
  - providing adequate nutrition in pregnancy;
  - supervising daily fetal movement counts.

Selected families are given instructions to participate in family monitoring and self care of the expectant mother.

## 2. MATERNAL LIAISON CARD

Since July 1978 a special maternal liaison card has been used in the urban districts to facilitate contact and coordination between hospitals and primary MCH service workers, thus enforcing the health care control of the pregnant woman. The liaison card is designed to study an outstanding problem in the MCH service at a particular period. For instance, the liaison card of 1978 was designed for a study of the prevention and treatment of toxæmia of pregnancy. The card now in use is mainly concerned with perinatal health care.

## 2.1 Circulation of the liaison card

The liaison card is first given to the pregnant woman by the MCH centre of the district or the primary MCH unit of the street-neighbourhood hospital. At the same time, history and blood pressure are taken, and antenatal health education is given. The liaison card is kept by the pregnant woman during the entire antenatal period. Special information on every antenatal examination by the hospital is recorded on the card, so that important information is available to the MCH service workers during their antenatal visits.

Pertinent information on delivery is filled in by hospital staff. After discharge from the hospital the liaison card is sent to the street-neighbourhood hospital, thus enabling the MCH service workers at this level to make postpartum visits in time. After the third postpartum visit the card is sent to the hospital for the postpartum examination.

Finally all the cards are collected by the MCH centres for statistical analysis.

## 2.2 Evaluation of the liaison card

By using the liaison card, the quantity and quality of the MCH service, the nature of the prevailing problems, and the vital statistics can be collected at definite intervals and channelled to the district and municipal levels.

### DATA FROM MATERNAL LIAISON CARDS

	<u>1978</u>	<u>1979</u>
Total number of parturients	4554	5027
Percentage of primipara	72.66	77.52
Antenatal care at 3-4 months gestation (%)	-	30.12
Average number of antenatal visits/person	7.90	9.00
Percentage of postpartum examination		
mother	88.55	87.65
baby	82.02	86.61
Incidence of toxæmia of pregnancy (%)	7.80	7.62
Incidence of prematurity and low birth-weight (%)	4.59	4.01
Stillbirth rate ( <sup>0</sup> /100)	8.10	4.50
Perinatal mortality rate	18.30	11.50
Neonatal mortality rate ( <sup>0</sup> /100)	8.60	6.30



### 3. IDENTIFICATION OF HIGH-RISK PREGNANCY

#### 3.1 Development of a scoring system

Since 1979 the Xin Hua Hospital of the Shanghai Second Medical College, the First Maternity Hospital of Shanghai, and the International Peace Maternity and Child Health Hospital have collaborated in designing a scoring system. The risk factors are grouped into four categories: (1) demographic and social factors, (2) past obstetrical history and mode of delivery, (3) present pregnancy and complications, (4) medical, surgical and gynecological complications of pregnancy.

Scorings are made in the antenatal, intrapartum and neonatal periods. Each risk factor is allotted 0, 5 or 10 according to its relative "weight". A total score of 10 or above is considered as high-risk, and the case is referred to a special high-risk antenatal clinic.

In period I (1 Feb. - 31 May 1979) a total of 2 380 cases were scored, constituting 76.04% of the number of cases admitted for delivery. A more complicated form of scoring system was used for the antenatal, intrapartum and neonatal periods.

In period II (20 Jan. - 29 Feb. 1980) a total of 1 350 cases used a revised scoring system; the percentage of cases scored was 94.54%.

#### 3.2 Validity of the scoring system

The validity of the scoring system is tested by the retrospective study of the cases. Dystocia, asphyxia of the newborn, birth-weight of less than 2 500 g or over 4 000 g, and fetal and neonatal deaths are taken as conditions for the prediction of outcomes. It was found that with a score of 10 as a dividing line, the prediction of a high-risk group is 25-30% in Period I and 15% in Period II. The risk factors in order of frequency are: toxæmia of pregnancy, prematurity, bad obstetrical history, malpresentation of the fetus, medical and surgical complications.

There were 4 600 deliveries during the periods under study. The perinatal mortality rate was 11.08<sup>0</sup>/oo. All the fetal and neonatal deaths were included in the scored groups.

From the preliminary study we feel that for the scoring system to be effective and acceptable the scheme should be simple. Antenatal scoring is more significant than intrapartum and neonatal scorings. The suggested periods for scoring are:

- (1) first antenatal visit in early pregnancy
- (2) 28-37 weeks of gestation
- (3) 38 weeks - delivery.

The purpose of setting up a scoring system is to permit the classification of groups into different risk categories. The number of points allocated for each risk factor is based on experience.

More work needs to be done to develop a more specific and sensitive method of scoring. (Copies of the Perinatal Scoring Record and the Family Self-Care Monitoring Record may be obtained from the author).

### 4. FETAL MOVEMENT MONITORING IN THE SUPERVISION OF PREGNANCY

It has been reported that fetal movement monitoring is a diagnostic parameter in the evaluation of feto-placental function and management of high-risk pregnancy. It is a simple method.

#### 4.1 Method

Since the beginning of 1979 instructions are given in the antenatal lesson to keep fetal movement counts at regular intervals during the day. This monitoring system has been popularized in the clinic and obstetrical wards. The expectant mothers are requested to count fetal movements in the morning, noon and evening for one hour each time, from the 22nd week of gestation. The sum of the three counts multiplied by 4 is taken as the number of fetal movements/12 hours. In the clinic, the antenatal cases vary the time of monitoring according to their working hours. About 25% of the antenatal cases can cooperate to keep intermittent records of continuous daily monitorings. The records are kept, together with the MCH liaison cards, to be shown to the medical staff at each antenatal visit. In the wards, at definite hours of the day, the expectant mothers are notified to start counting for one hour. The daily fetal movement count is recorded on the temperature sheet. If the fetal movement count is low, continuous fetal movement counting for a longer period is advised.

A low fetal movement count in high-risk pregnancy is an indication of possible fetal distress and the level of urinary or serum oestriol should be assessed. An hourly count of less than 3 is considered to be a critical value.

This method has been found to be acceptable to the MCH service workers and commune members in the nearby county. When there are marked changes in the fetal movement, the expectant mothers are requested to report to the hospital for further evaluation of the fetal condition.

#### 4.2 Applied research on fetal movement count

Substantial work on the fetal movement count has been carried out in many of the district and municipal hospitals in Shanghai. As an example, the work of the Maternity Hospital of Lu Wen District is described below.

4.2.1 From August 1978 to April 1979, fetal movement records of 240 cases of high-risk and normal pregnancies were analysed in the Maternity Hospital of Lu Wen District (Table 1).

The suggested classification of the fetal mobilograms are:

- (1) normal type - fetal movement count over 30/12 hours;
- (2) intermediate type - fetal movement counts of 20-30/12 hours;
- (3) abnormal types - fetal movement count less than 20/12 hours.

Sub-types are suggested based on the variations of the counts:

- type A - repeated fetal movement counts under 20/12 hours, with recovery to normal.
- type B - fetal movement counts less than 20/12 hours without recovery.
- type C - fetal movement counts of less than 10/12 hours without recovery.
- type D - fetal movement counts of 0.



#### 4.2.2 Results

- (1) Incidence of abnormal fetal mobilogram (Table 2).

In the high-risk group 27.42% of the cases had an abnormal fetal mobilogram. In the normal pregnancy group the incidence was 5.55%. The difference is statistically significant ( $p < 0.05$ ).

- (2) Abnormal fetal mobilogram and Apgar scores at birth (Table 3).

An Apgar score of 8 or more at birth is considered normal, and a score of 7 or less abnormal. The incidence of abnormal fetal mobilograms is markedly higher in the group with abnormal Apgar scores ( $p < 0.01$ ).

- (3) Fetal mobilogram and amniotic fluid (Table 4).

Cases with meconium-stained amniotic fluid have a higher incidence of abnormal fetal mobilogram than those with clear amniotic fluid.

In the group studied there were seven fetal and neonatal deaths. Four of the seven had decreased fetal movement counts in the antenatal period. Of the remaining three with normal fetal mobilograms in the antenatal periods, two died of lethal anomalies and one as a result of abruptio placentae. Thus the causes of death cannot be attributed to chronic fetal asphyxia.

Case illustration: Para 1, gravida 1, admitted at 37 weeks of gestation for pre-eclampsia with subjective symptoms of severe headache and absence of fetal movement for 12 hours. After energetic treatment for pre-eclampsia, symptoms improved and subjective fetal movement could again be perceived. With the complete subsidence of the symptoms, fetal movement increased steadily. One week later, a living baby was born with an immediate Apgar score of 10.

#### 4.3 Evaluation of self-monitoring of fetal movements in supervision of pregnancy

Self-monitoring of fetal movements is a simple method and does not require special equipment. The method can be extensively employed in wards and clinics in both urban and rural areas. At present the use of sophisticated equipment and complicated assessments for monitoring the feto-placental function is not available to MCH services at all levels. Although there is a discrepancy between fetal movements recorded objectively by fetal monitoring systems and the fetal movements counted subjectively, teaching the expectant mothers, especially in high-risk cases, to record fetal movements meticulously at regular hours of the day can improve fetal supervision in the antenatal period and contribute to a further reduction of perinatal mortality.

The definite movement alarm signal is a crucial point in the clinical application of fetal movement monitoring. We have used a 12 hour count of less than 12 as a critical level; others have considered fetal movement counts of less than 20 or 10 per 12 hours as abnormal. It is advisable that a count of less than 20 per 12 hours should be an indication for continuous monitoring, verification by other monitoring systems, or assessment of urinary or serum oestriol, so as to have a more definite evaluation of the fetal condition for further management.

For clinical purposes it is necessary to have a normal fetal mobilogram constructed to serve as a graphic display of fetal activity as well as the daily rhythm of fetal movements in a definite population group.

#### 5. SELF-CARE FOR THE EXPECTANT MOTHER

In July 1980, a project was started in our hospital for self-care of expectant mothers by their families.

Pregnant women of a low-risk group were selected as the subjects of the research. An important prerequisite is that the expectant fathers be cooperative and understand the objectives of the self-care. They are taught to detect and count the fetal heart rate with a wooden stethoscope, to measure with a tape the height of the fundus and/or the circumference of the abdomen, and to keep daily records of the fetal heart rate and fetal movement count on a special chart. The chart records are shown to the medical staff in the antenatal clinic. In the presence of abnormal fetal heart rate or decrease in fetal movement counts, the expectant mothers are asked to report to the antenatal clinic for further examination.

The number of fathers enrolled in this project is still limited. The expectant fathers cooperate well and keep the records meticulously for our reference. We feel that this is a useful way to encourage families to participate in self-care during pregnancy.

#### 6. CONCLUSIONS

This report attempts to demonstrate that public education on the priority of MCH care and prenatal health care and instruction to the expectant mother, delivered at all levels of the MCH network, has created an improved MCH care service and, most significantly, an increased demand for better MCH care.

The liaison card, designed to facilitate contact and coordination between hospitals and primary MCH workers, serves to ensure systematic antenatal, intrapartum and postpartum health care of mothers and infants, reflecting the local needs for the delivery of primary health care (e.g., number and timing of antenatal and postpartum visits), and provides simple data on health status and major MCH problems in a specified area.

The aim of our health service is to identify the high-risk mother as early as possible and to intervene to reduce the risk. Scoring systems have been employed in the preliminary trial to detect high-risk groups which should receive special attention. The concept of the risk approach needs to be refined, and the scoring system modified and improved, to meet the needs of MCH/family planning services.

Research on self-monitoring of the fetal movement, and family self-care of the expectant mother, as another aspect of the risk strategy, has just begun. Studies are designed to enlarge the programme. Only then can the programme's acceptability and effectiveness be fully assessed.



Table 1. FETAL MOVEMENT RECORDS

DIAGNOSTIC CATEGORIES BY RISK GROUPS  
FOR WOMEN AT THE MATERNITY HOSPITAL OF LU WEN DISTRICT

AUGUST 1978 - APRIL 1979

Diagnosis	No. of Cases
High Risk Group 1	186
Toxaemia of pregnancy (moderate and severe)	87
Toxaemia of pregnancy (mild)	41
Essential hypertension	14
Post-term pregnancy	44
High Risk Group 2	18
Placenta previa	4
Premature rupture of membranes	3
Polyhydramnios	1
Prematurity	2
Malformation of the uterus complicating pregnancy	2
Cardiac diseases complicating pregnancy	2
Chronic renal diseases complicating pregnancy	2
Breech presentation	1
Antepartum haemorrhage, causes unknown	1
Normal pregnancy	36
T o t a l:	240

Table 2.

DISTRIBUTION OF TYPES OF FETAL MOBIOGRAMS BY RISK CATEGORY  
FOR WOMEN AT THE MATERNITY HOSPITAL OF LU WEN DISTRICT  
AUGUST 1978-APRIL 1979

	Total No. Cases	Types of Fetal Mobilograms			p
		Normal	Intermediate	Abnormal	
		No. (%)	No. (%)	Total No. (%)	
High Risk Group 1	186	117 (63)	18 (10)	51 (27)	<0.01
High Risk Group 2	18	14 (78)	1 (6)	3 (16)	>0.05
Normal pregnancy	36	33 (92)	1 (3)	2 (5)	
T o t a l	240	164 (68)	20 (8)	56 (24)	

Table 3.

FETAL MOBIOLOGRAM AND NEONATAL CONDITION FOR WOMEN  
AT THE MATERNITY HOSPITAL OF LU WEN DISTRICT  
AUGUST 1978-APRIL 1979

	Total No. Cases	Types of Fetal Mobilograms			p
		Normal	Intermediate	Abnormal	
		No. (%)	No. (%)	Total No. (%)	
Normal Apgar Score	201	150 (75)	18 (9)	33 (16)	<0.01
Abnormal Apgar Score	46	16 (35)	3 (6)	27 (59)	
T o t a l	247*	166 (67)	21 (9)	60 (24)	
Fetal and Neonatal Deaths	7	3	0	4	

\*7 twins

Table 4.

FETAL MOBIOLOGRAM AND AMNIOTIC FLUID OF WOMEN  
AT THE MATERNITY HOSPITAL OF LU WEN DISTRICT  
AUGUST 1978-APRIL 1979

	Total No. Cases	Types of Fetal Mobilograms			p
		Normal	Intermediate	Abnormal	
		No. (%)	No. (%)	Total No. (%)	
Amniotic Fluid					<0.01
Clear	124	93 (75)	11 (9)	20 (16)	
Meconium Stained	92	53 (58)	8 (9)	31 (33)	
Not Recorded	24	18	1	5	
T o t a l	240	164 (68)	20 (8)	56 (24)	



RECHERCHE OPERATIONNELLE SUR LES METHODES D'ACTION NUTRITIONNELLE  
DANS LES SOINS DE SANTE PRIMAIRES EN REPUBLIQUE POPULAIRE DU CONGO

Gbaguidi-Louya Rose<sup>a</sup>

GENERALITES

Justification : Ce projet de recherche s'intègre dans le cadre global du développement de tous les services de santé. Il s'agit d'une recherche opérationnelle sur les modalités des composantes nutritionnelles des soins de santé primaires. Son originalité tient à son caractère communautaire et multisectoriel. Il essaie d'étendre, jusqu'au niveau des collectivités elles-mêmes, les activités nutritionnelles normalement menées au niveau des centres de santé maternelle et infantile, en dépit du fait que ces activités ne soient pas encore de règle dans les formations périphériques (dispensaires). Il vise à développer des méthodes d'action en faveur de la nutrition des collectivités, méthodes qui pourraient être appliquées à travers le pays dans le cadre des soins de santé primaires actuellement étendus à toutes les régions du pays.

Les autorités sanitaires congolaises ont été amenées à entreprendre cette recherche à cause de la situation nutritionnelle des enfants d'âges pré-scolaires, celle-ci laisse beaucoup à désirer, tant en zone rurale qu'en milieu urbain. Une attention particulière est réservée aux infections et aux autres causes qui agissent simultanément pour provoquer la malnutrition, afin d'élaborer des activités préventives nécessaires sur la base multidisciplinaire/multisectorielle.

Approches : Les approches adoptées ou envisagées sont les suivantes :

- réaliser une enquête rapide des habitudes nutritionnelles et de l'état nutritionnel et sanitaire des enfants en bas âge, dans 12 villages;
- tester la validité de différentes méthodes d'appréciation de l'état nutritionnel et de recensement des habitudes alimentaires, et trouver celles qui sont applicables par les agents de santé de village (ASV).
- développer un système de surveillance praticable par l'ASV;
- initier des activités éducationnelles sur les groupes cibles (mères - enfants) conformément aux besoins identifiés et aux possibilités locales, en établissant des comparaisons entre diverses méthodes d'éducation;
- étudier les modalités de coopération entre les services sanitaires et les autres organismes ainsi que les personnes intéressées à la nutrition des collectivités;
- chercher et appliquer des solutions pratiques aux autres problèmes de développement des villages, pour autant qu'ils influent sur l'état de santé et de nutrition.

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<sup>a</sup> Chef du Projet national R7/19/2/22 CONGO

Plan de travail : Il se résume comme suit :

Phase préparatoire :

- étude du milieu et sensibilisation des habitants grâce à des contacts avec les autorités politico-administratives, les notables des collectivités et les responsables sanitaires des villages.
- choix de personnes devant être les agents de santé des villages (ASV).
- élaboration du calendrier des activités.

Phase d'exécution :

- formation sur le tas des équipes pour conduire les enquêtes rapides.
- récolte des données.
- dépouillement des données.
- formation initiale des ASV en matière de nutrition et soins de santé primaires.
- études des méthodes de surveillance en vue de retenir celle qui est efficace et applicable par l'ASV.
- éducation nutritionnelle pour une meilleure utilisation des produits locaux durant le sevrage, par comparaisons entre diverses méthodes.
- mise au point d'un aliment ou formule de sevrage équilibré, économique et disponible, si le besoin et la possibilité existent.
- étude du contenu et de diverses méthodes de formation nutritionnelle des ASV.

Phase d'extension :

- étendre les résultats aux autres régions du pays, en utilisant les expériences acquises et en les adaptant aux besoins locaux de celles-ci, compte tenu des différences importantes quant à la disponibilité et aux habitudes alimentaires ainsi qu'à l'état nutritionnel des populations de ces régions.

DESCRIPTIF DU PROJET

Objectifs

a) Général :

- étudier les méthodes d'action et de formation nutritionnelle dans le cadre des Services de Santé primaires (SSP) pour les agents de santé du village.

b) Spécifiques :

- comparer, dans diverses collectivités, la possibilité de réalisation et l'efficacité de différents systèmes concernant :



- la surveillance nutritionnelle des enfants de 0 à 5 ans;
- l'évaluation nutritionnelle des aliments de sevrage à partir des denrées locales;
- la promotion de la production, du stockage et de la consommation des aliments les plus indiqués;
- la formation en nutrition pour les agents de première ligne.

Calendrier des activités

Le tableau suivant résume le calendrier des activités telles que prévues. Le projet a commencé en janvier 1979.

Phases	Activités	Durée
I. Phase préparatoire	- Présentation du projet aux autorités	1 mois
	- Exploitation des données disponibles - Situation administrative - Organisation économique - Situation sanitaire - Situation alimentaire	2 mois
	- Evaluation des activités ci-dessus	1 mois
II. Phase d'exécution	- Sensibiliser aux buts de l'enquête le personnel de la santé et les collectivités	1 mois
	- Création des comités villageois de santé	1 mois
	- Enquête nutritionnelle*	3 mois
	- Traitement des données	1 mois
	- Identification des causes de malnutrition et des aliments disponibles	1 mois
	- Identifier au moins un agent de santé par village	1 mois
	- Etablir un programme de formation : . aux SSP . à l'éducation nutritionnelle	3 mois

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Enquête rapide sanitaire/nutritionnelle, AFR/NUT/84, Rev. 2

	- Initier les agents de santé du village aux tâches décrites ci-dessus	1 mois
	- Etablir les fiches individuelles de surveillance - Combiner d'autres activités : . chloroquinisation . réhydratation orale . traitement des enfants mal nourris . organisation des séances d'éducation pour la santé . études spéciales . analyse	14 mois  6 mois
III. Phase d'extension	- Application (avec adaptation aux besoins locaux) de ces expériences dans les zones de SSP dans chaque région du pays	6 mois <hr/> 42 mois

DOMAINES ETUDIÉS

Localisation et données

Douze villages ont été étudiés pour ce projet. Les villages se trouvent aux alentours de Linzolo, qui est situé à 30 km. à l'ouest de Brazzaville. La population globale étudiée comprend 330 enfants de 0 à 35 mois, 894 femmes et 746 hommes.

Les 292 enfants examinés, de 0 à 36 mois inclus, se répartissent comme suit :

Groupe d'âge		Effectifs
0	- 5 mois	81
6	- 11 mois	53
12	- 17 mois	36
18	- 23 mois	20
24	- 29 mois	35
30	- 35 mois	39
* Indéterminé		<u>28</u>
		292
* Fiches non exploitables <u>28</u> (âge non disponible)		



Les observations ont été faites en utilisant les paramètres : rapport poids/âge et tour de bras.

Les résultats obtenus

Malnutrition selon tour de bras :

Dans la tranche d'âge de 6 à 35 mois, 56% des enfants ont un état nutritionnel satisfaisant, 39,1 % en pré-malnutrition et 4,9 % des malnutris graves (marasme), les critères étant : malnutrition modérée - moins de 13,5 cm ; et malnutrition grave - moins de 12,0 cm. La période la plus critique se situe entre 12 et 17 mois, où 53,3% des enfants sont soumis au risque de malnutrition.

Nous avons pu constater qu'un seul brassard pour tous les enfants (0-5 ans) ne donnait pas de résultat fiable. Nous avons donc été amenés à fabriquer 7 brassards suivant le tableau suivant :

Age (mois)	Tour de bras (en cm) moins de	
	Maln. modérée (jaune)	Maln. grave (rouge)
0	11,0	9,5
1 à 3	11,5	10,0
4 à 6	12,0	10,5
7 à 11	12,5	11,0
12 à 23	13,0	11,5
24 à 35	13,5	12,0
36 à 60	14,0	12,5

Malnutrition selon le rapport poids - âge :

La méthode consiste à apprécier l'état nutritionnel en comparant le poids de l'enfant à celui considéré comme normal : poids supérieur ou égal à 80 % : satisfaisant ; poids entre 60 et 80 % : malnutrition modérée ; et poids inférieur à 60 % : malnutrition sévère.

Comparaison des méthodes :

Par les deux méthodes, les pourcentages de malnutrition (MPE) étaient :

Age (mois)	MPE modérée		MPE grave	
	Tour de bras %	Poids/âge %	Tour de bras %	Poids/âge %
0-5	-	9,3	-	0
6-4	31,8	23,7	2,2	0
12-17	53,3	21,0	13,3	5,2
18-23	16,6	15,3	5,5	0
24-25	27,2	23,8	0	0
30-35	66,6	20,0	3,3	0
Total 6-35 m	39,1	20,8	4,9	1,0

Il est évident que le tour de bras donne des pourcentages de MPE plus élevés que le poids selon l'âge. Les nouveaux critères pour tour de bras donneront des résultats inférieurs. Par la méthode ancienne, le diagnostic (normal, MPE modérée ou grave) était le même que par le poids selon l'âge pour 80 % des enfants, malgré l'absence d'une formation poussée des enquêteurs à ce stade là. Tout en admettant la nécessité d'améliorer toujours la méthodologie, le tour de bras peut être considéré d'ores et déjà comme un indice pratique et utilisable pour la surveillance des enfants en bas âge.

#### Données cliniques

Sur les 264 enfants retenus :

Age (mois)	Symptômes			Signes	
	Fièvre	Toux	Diarrhée	Oedeme	Anémie
0 à 5	5	17	6	0	1
6 à 11	5	13	7	1	2
12 à 17	6	9	6	0	1
18 à 23	3	3	0	0	1
24 à 29	9	4	2	0	2
30 à 35	4	2	1	0	1
Total	32	48	22	1	8
%	12,1	18,2	8,3	0,4	3,0

Remarques :

- les maladies du système respiratoire sont les plus fréquentes et touchent notamment les enfants de moins d'un an.
- les diarrhées sont moins fréquentes que supposées.
- en moyenne, chaque enfant est malade au moins un jour sur trois.



Données démographiques

Pour les 193 mères qui ont répondu aux questions concernant le nombre de leurs enfants morts et encore vivants, les réponses sont respectivement 811 et 711. Ces données indiquent une non survie de 12 % (100 sur 811). Ce chiffre est relativement bas par rapport aux autres collectivités étudiées en Afrique.

Enquête alimentaire

## 1. Allaitement maternel

	0 à 2 m	3 à 5 m	6 à 8 m	9 à 11 m	12 à 17 m	18 à 23 m	24 à 29 m	30 à 35 m
Nombre d'enfants	43	38	26	27	36	20	35	39
Enfants allaités	41	35	21	18	27	9	4	1
% allaité	95	92	81	67	75	45	11	26

Remarque : allaitement rarement non-établi, normalement maintenu par la grande majorité jusqu'à 18 mois. Position satisfaisante sauf pour quelques enfants de moins d'un an.

## 2. Alimentation complémentaire

Moyenne du nombre de fois que chaque groupe d'aliments est consommé par enfant et par jour :

Groupe d'aliments	0 à 2 m	3 à 5 m	6 à 8 m	9 à 11 m	12 à 17 m	18 à 23 m	24 à 29 m	30 à 35 m
Aliments de base	0,63	1,0	2,5	2,2	2,1	2,0	2,0	1,6
Aliments protidiques d'origine animale	0,19	1,1	2,0	2,2	2,0	1,6	1,6	1,2
Aliments protidiques d'origine végétale	0	0,08	0,2	0,07	0,06	0,05	0	0,07
Légumes	0,05	0,34	1,6	1,7	1,6	0,90	1,1	0,85
Sucre, huile	0,19	1,1	1,1	1,0	0,08	0,45	0,86	0,59

Remarques :

- a) Aliments de base : moins de 6 mois = bouillie de maïs ; après 6 mois : manioc (en forme de pain ou fufou) ; fréquence de consommation inadéquate : la moitié des enfants consomment moins de deux fois par jour.
- b) Aliments protidiques d'origine animale (principalement poisson frais ou salé) consommés avec la même fréquence que les aliments de base.
- c) Aliments protidiques d'origine végétale (arachides, haricots secs) consommés avec une rareté extrême malgré leur disponibilité.
- d) Légumes : approximativement moitié feuilles vertes, moitié autres.
- e) Sucre/huile : consommation non-négligeable.

PHASE ACTUELLE DU PROJET

Depuis janvier 1980, le projet est passé à la phase d'exécution active : la formation des agents de première ligne destinés à travailler au contact des populations. Ceci implique :

- l'élaboration d'une fiche d'enquête de l'alimentation du nourrisson, utilisable par un ASV ;
- l'accomplissement d'activités intégrées touchant plusieurs domaines (voir Annexe I la liste des activités) ;
- l'élaboration d'études spéciales, par ex., quantité et composition de la bouillie du nourrisson ; pourquoi le kwashiorkor persiste-t-il ?
- l'élaboration de l'éducation nutritionnelle, l'amélioration de la production, le stockage, la transformation et la commercialisation alimentaires.

Madame Louya Rose Isabelle, assistante sanitaire, est la responsable nationale du projet. L'OMS y collabore par un soutien technique et financier qui s'est élevé à 16,000 dollars en 1979-1980.

IMPACTS DU PROJET

A la fin du projet, on peut raisonnablement espérer : l'amélioration certaine de la situation sanitaire nutritionnelle des zones où la recherche a été effectuée, par une participation active de la population, grâce à une sensibilisation des autorités politico-administratives ; l'acquisition d'expériences que l'on pourrait étendre à d'autres régions du pays ; et la maîtrise des techniques d'enquêtes et d'action communautaire adaptables à d'autres canevas de projets.



ACTIVITES REALISEES PAR LES AGENTS DE SANTE DE VILLAGE (ASV)  
DANS CHACUN DE LEUR VILLAGE

Après leur formation au Centre médical de Linzolo, chaque comité de santé du village a formulé un programme de travail pour mettre en pratique les connaissances acquises en matière de nutrition et santé publique. Ce programme, pratiquement le même dans tous les villages, fait ressortir les activités suivantes :

Reconnaissance du milieu par des enquêtes et mise au point de la distance séparant le Centre médical de chacun de leur village.

Recensement de la population par tranche d'âge et par sexe : population totale, enfants de 0 à 3 ans, enfants scolarisés, population masculine, population féminine, femmes en âge de procréer, nombre de naissances, nombre de décès et nombre de personnes âgées.

Recensement des activités économiques de chaque village.

Enquête alimentaire pour savoir ce que l'on cultive et ce que l'on élève dans chacun des villages pour mieux orienter les conseils nutritionnels et améliorer la qualité des repas des enfants.

L'enquête socio-culturelle a fait ressortir que les paysans ont comme aliment de base, le manioc et le fofou (farine de manioc). Quelques tabous alimentaires existent encore : manger l'oeuf donne naissance à un enfant chauve chez la femme enceinte, ou alors rend l'enfant voleur et lui donne une splénomégalie ; manger de la volaille fait sursauter l'enfant ; manger de l'huile de palme fait tousser l'enfant ; manger du grillon fait maigrir et vomir un enfant ; donner à manger de petites sardines à un enfant lui provoque des convulsions.

Dans tous ces villages, on note la présence des organisations politiques de masse, outre celle des écoles et collèges, des religieux, des associations folkloriques et des associations d'entraide.

Dans leur enquête sanitaire, les ASV ont fait ressortir qu'il y a fréquence de : paludisme, diarrhée, vers intestinaux, blessures, bronchite et rinopharyngite. L'activité sanitaire de l'ASV est beaucoup plus préventive que curative.

Tous les comités de santé de village ont sensibilisé leurs habitants sur l'opération assainissement et aménagement des sources, pour améliorer la santé de tous les villageois : désherbage dans les villages et aux abords de la route goudronnée (route servant à écouler les produits vers la capitale); creusage de trous à ordure et recensement des latrines, des sources.

Le problème de l'eau se pose dans certains villages durant la saison sèche et durant la saison des pluies, l'eau de certaines sources est troublée.

La démonstration nutritionnelle et l'éducation pour la santé collective ou individuelle constituent les plus grandes activités de l'ASV dans son village.

L'activité curative, quant à elle, se résume à donner de la chloroquine à titre préventif ainsi que de l'aspirine, de la sulfaquandine ou de l'eau de riz en cas de besoin, et à faire de petits pansements en cas de blessure.





THE CUBAN NATIONAL CHILD GROWTH STUDY

J.R. Jordan<sup>a</sup>

RATIONALE OF THE STUDY

The Government of Cuba has two main priorities: health and education. In health, mother and child care is the most important issue. In 1959 activities concentrated on the establishment of rural health services, increase and reorganization of primary health care centres, a programme for the reduction of maternal mortality, and a programme against acute diarrhoeal diseases. These activities, although not specifically aimed at reducing infant mortality, contributed to decreasing its rate.

In 1970 an integral analysis and appraisal of mother and child health care was carried out and, consequently, a new national health policy was undertaken with its main objectives the lowering of maternal, perinatal and infant mortality rates. Short- and long-term goals of the programme included: increasing the coverage of health services, setting targets for prenatal care and institutional deliveries, screening for high-risk pregnancies and high-risk newborn infants, increasing specialized and technical health manpower, health education of the population, and improvement of operational facilities in the health network. Among the main long-term goals was the reduction of the infant mortality rate to around 24 per 1000 live births by 1980.

In addition, at the beginning of the 1970-79 decade, as there were no national standards with regard to the growth and development of children, it was felt justified to carry out a national child growth study to set up our own standards. Harvard reference standards had been already tried and proved to be inadequate for the Cuban population.

This decision was reached by the Ministry of Public Health and the National Paediatric Advisory Board on the grounds that success in achieving the hoped-for reduction in infant mortality rates would lessen its future importance and would make the assessment of the growth and development of children an appropriate additional measure.

The physical growth and development of children has been widely recognized as a sensitive indicator of the health and nutrition of a population and, as developing countries with poor nutrition and high infant mortality rates improve their health standards, cross-sectional population or sub-population growth studies become increasingly important in the evaluation of health care and development of the whole country.

In Cuba the National Health System operating during the last 20 years and closely interacting with the community has achieved important goals in maternal and child health care.

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MORTALITY RATES IN CUBA (1979)\*

(a) General	(b) Perinatal	(b) Infant	(c) 1 to 4 years	(c) 5 to 14 years	(d) Maternal
5.6	23.9	19.4	1.0	0.5	4.7

\* Provisional

- (a) Per 1000 inhabitants
- (b) Per 1000 live births
- (c) Per 1000 age group
- (d) Per 10 000 live births

Malaria, diphtheria, poliomyelitis and tetanus of the newborn have been completely eradicated. Mortality from gastroenteritis per 100 000 inhabitants has dropped from 60 in 1962 to 3.7 in 1979. The birth rate has dropped from 37 per 1000 inhabitants in 1960 to 14.7 in 1979, by means of health education, not by compulsory methods. Life expectancy at birth is now 70 years. The stage at which "we should not only measure disease, but at the same time devote our efforts to measure health" was reached in 1972, and it was then decided to carry out a national survey on growth and development of the population.

STAGES OF A NATIONAL GROWTH STUDY

In planning a national growth study different steps are to be taken in sequential order:

1. Objectives

The aims of the study must be defined clearly from the outset. In our survey, they were:

- 1.1 General: To gather information on the physical growth of the Cuban population from birth to 20 years as an indicator of health and nutrition by means of a representative sample covering the whole country. This would allow comparisons between different population groups, geographical regions, etc.
- 1.2 Specific: To set up national cross-sectional growth standards, both distance and velocity, for stature, sitting height, crown-rump; four circumferences: head, mid-arm, thigh and calf; three skinfolds: triceps, subscapular and supra-iliac; two diameters: bi-acromial and bi-iliocrystal; and foot length. To investigate puberty ratings in adolescents and age of menarche in girls. To set up standards for skeletal maturity. To carry out comparisons within and between groups of the population on the basis of ethnic, social, cultural and geographical variables.

To relate those variables with genetic and environmental conditions in order to have available epidemiological information on growth in different parts of the country for the establishment of priorities in the allocation of health, education and other resources.

2. Sampling

- 2.1 Sampling design: The study was planned in two stages: 1. Cross-sectional (May 1972 to April 1973), and 2. Longitudinal (May 1973 to January 1974), the latter comprising 30% of the whole sample (velocity standards).



The design was a multi-stage, stratified probability sample of non-institutionalized civilian children and adolescents, within the sampling frame provided by the 1970 National Population and Household Census. As the survey was planned to begin in 1972, two years after the census, by which time around 400 000 new births would have occurred in the country, data had to be updated by a new census in the multi-stage sampling scheme described below. A new listing or local census was organized in each of these randomly selected sectors, which included every resident within the age range 0 to 20 years. From the total of all the eligible children a random sample was selected for measurement, by a computer-generated set of random numbers. The listing also included the parents and every pregnant woman of over six months' gestation. In 1970 the population of Cuba was 8 575 000, of whom 3 900 000 were under 20 years of age.

Representativeness was achieved through a complex sample design.

The model was stratified and multi-staged with proportional allocation. The sample structure reproduced the population structure by ages supplied by the census. Strata were: provinces, locality (urban-rural) and ethnic groups. Sampling units were: areas, sectors within areas and individuals living in the sectors by age and sex, both independently. The final selection was of individuals, not households.

Ten per cent of the areas in the whole country were randomly selected, making a total of 220.\* Each area had an average of 10 sectors. The average number of households per sector was 120 and a mean of 2.4 individuals under 20 years lived in each house (census data). By multiplying 440 sectors by 120 households by 2.4 individuals per household the final number of eligible children was reached: 126 000. Maps of each sector were supplied by the Census Office, and members of community organizations (Women's Federation, Committees for the Defence of the Revolution, National Farmers' Association), on a voluntary basis, visited every house in the sector listing all persons under 20, their parents and every pregnant woman over six months of gestation. Lists yielded as expected around 126 000 eligible children and were sent to the Central Office where individuals were selected by computer.

- 2.2 Size of the sample: The total size of the sample was dictated by the desire to establish within fairly narrow limits the 3rd and 97th centiles for the national measurement standards. The sampling errors of these centiles are greater than those of the 50th centile; yet it is these outlying centiles that are the critical ones for much clinical work in the evaluation of a child or a group of children. Conventionally, those lying at the extremes of the distribution are regarded as "probably abnormal" or, better, "atypical".

In order to have a precision of around  $\pm 0.3$  cm at the 3rd and 97th centiles the corresponding sample size within the age range 3 to 9 years should be approximately 1000 children for each year or age and sex, giving 95% confidence limits of  $\pm 0.6$  cm. At earlier ages and in adolescence the fact that growth is faster implies that a large sample (effectively a more frequent age sampling) is needed. Population standards should be estimated with the same accuracy at each age. Thus, if the total age range is divided into intervals in each of which the amount of growth is approximately the same (around 5 cm), equal numbers

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\*Two sectors were randomly selected in each area, for a total of 440.

of children should be sampled within each interval. This leads to sampling numbers of children proportional to the growth rate at each age. Consequently, every time the population to be sampled grows around 5 cm in stature, figures of 1000 boys and 1000 girls are needed to maintain the same precision at the outlying centiles. The limits of sampling error are smallest for measurements such as stature in which we can assume a Gaussian distribution and somewhat larger for those such as weight, arm, thigh and calf circumference and skinfolds, where the form of the distribution is not known precisely.

For stature (or supine length in the first two years) there is an overall increment from birth (50 cm) to adulthood (175 cm) of an average of 125 cm in the whole age span from 0 to 20. Therefore 25 segments are included, of 5 cm each. Since to maintain a standard error of  $\pm 0.3$  cm 1000 boys and 1000 girls are needed every time they grow 5 cm, irrespective of the time it takes, this calls for a sample size of each sex of 25 x 1000, that is, 25 000 or a whole sample of 50 000 children. To allow for possible non-respondents, 8 to 10% should be added, making it 55 000. The theoretical sample size should therefore be around 55 to 56 thousand. This increase would also compensate for two other measurements, such as weight and skinfolds, but maintaining stature as the basic measurement of the sampling procedure.

### 3. Measurements

- 3.1 Age: This independent variable, to which all measurements as dependent variables are to be related, must be accurately recorded. The use of narrow limits with centred ages such as from 6.50 to 7.49 years with the mean at 7.0 is very convenient and avoids many errors. Not only for the research worker, but more and more in the general field of human development, the use of decimal age is very strongly to be recommended.
- 3.2 Anthropometric techniques: For international comparisons it is very important to utilize uniform measurement techniques. The technique recommended by the International Children's Centre and the International Biological Programme was employed in the Cuban study. Instruments were those recommended by this Programme. Measurers were trained personally by Mr R.H. Whitehouse, and their proficiency was checked against the instructor's.
- 3.3 Puberty ratings: The system proposed by J.M. Tanner, which identifies five distinct stages in pubic hair for both sexes, genitalia for boys, and breast development in girls, has gained wide acceptance. Menarche was investigated by the status quo method with logit analysis. Age intervals were 0.1 of a year in menarche and 0.2 of a year in sexual development. Cumulative percentages were plotted and centiles were determined for each stage of puberty ratings.
- 3.4 Skeletal maturity: Radiographs of the left hand were assessed by the TW2 method. Exposures were taken using the technique described by Tanner and nearly 5000 radiographs were made. Non-cassette films were more convenient, exposure meters were placed by the gonads, chest and exposed hand and all were found to be well within international safety limits as assessed by the Cuban National Program for Protection Against Radiation and approved by the Ministry of Public Health. The skin exposure was about 40 to 50 millirads, with none detected at the gonads.



3.5 Ethnic classification: Since the Cubans are an African-European mixed population, it was desirable to look for differences between African and European descendants. Characteristics of hair, face, eyes, nose, lips and skin colour were considered. Obviously, limits were expected to overlap. Fifty two per cent were considered European descendants; 5% African and 42% mixed (African-European). Only 1% of other races and combinations (Asiatics) were found.

#### 4. Logistics

One measuring team was assigned to each province, with one in reserve nationally. There were nine teams, each of seven persons (provincial coordinator, statistical clerk, two measurer-recorders who each measured or recorded on alternate days, X-ray technician, and two drivers). The measurers were young women, who examined persons of the same sex. Puberty ratings in adolescent boys were assessed by the X-ray technicians, who were always males, and they also measured thigh circumference. A logistic plan, with a calendar and timetable with a planned sequence, was implemented in such a way that listing was carried out 50 days before the measuring teams actually examined the children in every province. Each team had a mobile laboratory for measurements in adapted trucks, a vehicle to transport the team, a portable generator and portable X-ray machine, and a canvas tent.

Listings started in March 1972 and measurements in May. Calendar and timetable were adhered to exactly as planned. The cross-sectional part of the study ended in April 1973. The longitudinal study began in May 1973 and completed the 30% of the sample to be measured for a second time in January 1974. All listing and appointments were carried out by members of community mass organizations as a voluntary task.

#### 5. Pilot study

A pilot study was carried out in May 1971, one year before the study began. Important changes were introduced in the methods of the study, particularly in its operation. It provided information on the need of mobile measuring stations, vehicles, portable generators, non-cassette films and the number of children that could be examined daily.

#### 6. Publicity and liaison

In this type of national study a considerable publicity effort is highly recommended, as a good response of the population is critical. In our study this aspect of the planning was very important. About three months before the listing began there was a press conference, followed by front-page publicity in the national press. The national TV network for a period of several months featured a brief news announcement daily at peak viewing hours. Local radio stations also carried news about the study, particularly at the time when the team was measuring in the nearby areas. Posters were displayed at schools, offices and factories.

A doctor, a statistician and a Women's Federation representative from the central coordinating group visited each province for a one-day conference with local community authorities.

#### 7. Quality control

To monitor the reliability, validity and consistence of the measurers, quality control sessions were organized. These sessions were held every two months during the whole period of the study. All teams met in one place and measured the same group of children of different ages. They showed highly reliable measurements and very small differences between measuring teams. This procedure is also highly recommended.

## 8. Data processing

All anthropometric survey data need to be scrutinized for errors, and edited. A computer programme is necessary, in which all data out of the set limits have to be analysed. In our study, about 200 cards were found with one or more punching errors. The reconstructed cards for different reasons totalled 1.2%. The tables and graphs had to be constructed out of a clean card deck. In the Cuban study the final clean deck included 50 360 cards.

## 9. Analysis and results

At present we have released our cross-sectional standards for a representative sample of the whole country, comprising 13 anthropometric dimensions, puberty stages, menarche and skeletal maturity. Decimal ages have been utilized throughout all charts.

The first thing to do was to look at the distribution of the measurements.

A nearly Gaussian and symmetrical distribution was found for stature and supine length (as expected), and also for crown-rump and sitting height, head circumference, bi-acromial and bi-iliac diameters and foot length.

Non-Gaussian distributions were confirmed with a skew to the right for weight, arm, thigh and calf circumferences and skinfolds. The skinfolds were handled with logarithmic transformations.

For height and weight, the rural children of Cuba are shorter and lighter than the urban, but the difference is small. There are also differences between provinces. The tallest children live in Havana and the shortest in Oriente province. Difference average about 2 to 2.5 cm at age seven years.

National growth charts show percentiles a little below the London standards for both height and weight, particularly during the first 10 years of age. In adolescence the Cuban children lag behind to end at 20 years of age with a height 5 cm less than the London children. However, when compared with children from the whole United Kingdom at the age of seven (N.C.D.S. cohort) the Cuban sample has almost the same distribution in the height centiles.

Weight is consistently lower at all ages than for the London sample. This may be explained either by the British children being a little overweight or by the difference in body proportions, the Cubans having longer legs and shorter trunks probably owing to ethnic differences caused by the African extraction of the Cuban population. At the same height Cubans weigh less, and one of the reasons may be that the trunk is a heavier cylinder than the two isolated cylinders formed by the lower limbs. In addition, our bi-acromials and bi-iliacs are distinctly narrower than those recorded by Tanner for London children. It has been suggested that linearity is closely linked to higher environmental temperature in the evolution of the human species.

In the first ten years of life, and in both sexes, the Cuban children's triceps skinfold measures are also below those of the British, whereas the subscapulars are very close. Considering that Tanner regards the revised British skinfold measures as showing somewhat fat children, we have compared ours with those reported by Karlberg and Taranger for Swedish children. At all ages (utilizing the sign test) we have found that the Cuban triceps skinfolds are below the Swedish standards (50th centile) but our subscapulars and supra-iliacs are consistently above theirs. This strongly suggests a different distribution of fat for these populations.

Head circumference of Cuban children is very similar to values reported by Taranger and Karlberg for Sweden and those from British children published by Tanner.



Upper arm circumference has been considered by Jelliffe a useful and easy indicator of the health and nutritional status of young children. Shakir has proposed 12,5 cm as the absolute lower limit to define normality in children from 1 to 6 years of age. The Cuban third centile always lies above this figure in children under six. Thigh and calf circumferences have also been recorded. The calf circumference has been strongly recommended by Ramos Galvan as a good indicator of nutrition in children.

9.1 Sexual development at puberty: Adolescence is a very important stage in the life cycle of human beings and shows various physical, physiological, psychological and body composition changes.

9.1.1 Menarche: An estimation of the distribution of the age at menarche was carried out in girls from 8 to 18 as described, utilizing the status quo method and logit analysis. Data were grouped in 0.1 of a year. The size of the national random sample was 13 143 girls. S.D. was around 1.25 years.

Locality	Size of sample	Median age	S.E.*	Chi-square
Cuba (all country)	13 143	13.01	$\pm 0.01$	55.0
Cuba (urban)	7 084	12.83	$\pm 0.03$	75.5
Cuba (rural)	6 059	13.25	$\pm 0.04$	81.2

Differences between urban and rural are statistically significant at  $p < 0.001$ .

\*S.E. : Standard error of the mean.

Differences between provinces are shown in the following table:

Province	Sample size	Median age	S.E.
Pinar del Rio	885	13.17	$\pm 0.11$
Havana (Metropolitan)	2 216	12.64	$\pm 0.06$
Havana Province	825	12.78	$\pm 0.14$
Matanzas	599	12.76	$\pm 0.11$
Las Villas	2 127	13.07	$\pm 0.06$
Camaguey	1 293	13.06	$\pm 0.09$
Oriente	5 198	13.20	$\pm 0.04$

A chi-square test for 'goodness of fit' was non-significant in every case, indicating that a logit line provided an adequate description.

9.1.2 Puberty stages: Data were grouped in 0.2 of a year. The whole national sample comprised 26 319 individuals, with 13 861 girls and 12 458 boys, within the age ranges 8.00 to 18.99 years. Data were analysed and processed utilizing a logit computing programme on the same principle as that employed in calculating the median age at menarche and its distribution, and plotted on logit transformation charts fitting the cumulative percentages to a straight line. Distributions were fairly Gaussian indicated by the parallelism of the lines, with the exception of stage 5. Standard deviations are about 1.5 years for stages 2, 3 and 4.

#### GIRLS

Stage	Breast development				Pubic hair development			
	Percentile				Percentile			
	97	50	3	S.E.	97	50	3	S.E.
2	8.3	10.8	13.4	$\pm$ 0.02	8.9	11.5	14.1	$\pm$ 0.02
3	9.7	12.3	14.9	$\pm$ 0.02	10.1	12.7	15.3	$\pm$ 0.02
4	10.8	14.0	17.2	$\pm$ 0.03	11.1	14.2	17.3	$\pm$ 0.03

#### BOYS

Stage	Genitalia				Pubic hair development			
	Percentile				Percentile			
	97	50	3	S.E.	97	50	3	S.E.
2	8.7	11.8	14.9	$\pm$ 0.02	9.6	12.7	15.8	$\pm$ 0.03
3	11.0	13.6	16.3	$\pm$ 0.03	11.4	14.1	16.8	$\pm$ 0.03
4	11.8	14.8	17.8	$\pm$ 0.03	12.1	15.0	17.9	$\pm$ 0.03

9.2 Skeletal development: Within the national sample a random subsample of 10% of the subjects had their left hands X-rayed. A minimum of 100 films for each year of age and sex was obtained, for a grand total of around 5 000 radiographs. These were assessed by the TW2 method by the same rater. Centile charts have been produced for 20 bone scores.

#### APPLICATION TO HEALTH SERVICES

The Cuban National Growth Charts have been progressively introduced in paediatric practice at different levels of the National Health System. They are to be utilized only as a screening procedure. All children under the 10th centile and over the 90th are to be thoroughly scrutinized on the grounds that they are atypical - but not necessarily abnormal - for the Cuban population. Because, often, standards are used as if they represent "normal" or even "optimal" biomedical reference data, paediatricians, general practitioners and nurses have been instructed to utilize only our standards for screening purposes.

At the same time, differences in growth according to region and socio-economic status are hidden in "national standards of growth". Consequently, the medical evaluation of individual growth cannot be based only on growth diagrams but needs more information: growth velocity at repeated visits, mid-parent height, and as is stressed correctly to start with, a thorough medical examination. One isolated observation is frequently not enough to



reach a conclusion: follow-up is needed. Especially during adolescence, individual growth does not follow the curves based on cross-sectional surveys. Early maturers depart upwards from the centile in which they were growing and late maturers lag behind to experience a "catch-up" later. These biological events and their normal variations along the time axis have great importance for adolescents, and should be known and explained to the children by their parents, doctors and teachers, and should cause no unnecessary concern. It is in these circumstances that skeletal maturity and puberty development standards are useful and may reassure the adolescents that these conditions are only variations within normality. Data of this kind are of great importance in their application to the school system and the practice of sports.

Since 1978 our graphs and tables for different measurements have been utilized in different parts of the country and in many postgraduate theses of paediatricians, and have been found to be suitable for use in primary health care services and hospitals.

After careful evaluation in different areas of the country, the Cuban Growth Diagrams have been approved by the MCH Department of the Ministry of Public Health and the National Pediatric Advisory Board, and are currently being incorporated into paediatric practice and primary health care. They have been adopted in the new edition of "Pediatric Procedures" of the Ministry of Health, now in press.

As our population has been found to be nearly 50% of African ancestry, it is hoped that the data can be useful in populations with similar ethnic extraction.

Population growth studies not only are health indicators but also they furnish important information about environmental problems which explains differences between regions and has many other applications such as industrial design and production of such goods as furniture, clothing and footwear.

The survey is to be repeated in 1982 as a continuing monitoring of growth and development of the Cuban population. Steps are now being taken to include the Denver Developmental Screening Test in a subsample of the nation-wide survey.





HEALTH SERVICES RESEARCH IN MATERNAL AND CHILD HEALTH  
IN ETHIOPIA

Nebiat Tafari,<sup>a</sup> Tewabech Bishaw<sup>b</sup> and Hailu Meche<sup>c</sup>

Ethiopia with a population of 30 million is the largest of the least developed countries. It has massive health problems which give rise to excessive morbidity and mortality, and which are associated with underdevelopment and socioeconomic inequality.

Most of the excess deaths occur in growing children and in women of the childbearing age. For instance, nearly 50% of deaths occur in children under five years, and the maternal mortality rate is 200 to 500 times higher than the rates in developed countries. Excessive death rates in infancy and childhood are accompanied by excessive birth rates leading to population growth of 2 to 3% per annum, and a demographic profile characterized by an expanding childhood population. The increased nutritional demand made by reproduction and growth render the expanding majority of the population vulnerable to malnutrition. It occurs under adverse environmental conditions, in particular poor sanitation, leading to a high frequency of communicable diseases. The synergistic action of malnutrition and infection is the root cause of the excess death rates in mothers and children, and indirectly of the rapid population growth.

Despite the staggering burden of morbidity and the vastly excessive mortality rates, the needs and problems of mothers and children have remained neglected and unacknowledged. There is no doubt that health is central to the causal complex that determines the level of socioeconomic development. If current trends are allowed to continue, the proportion of the population at risk will increase, and the quantity and quality of productive forces will fall in the face of an expanding dependent population. The stemming of this downward spiral of underdevelopment because of poor quality of life from ill-health during child growth and development is one of the major challenges of the current revolutionary decade in Ethiopia.

MCH PROBLEMS AND ACTIVITIES

Women in the 15-44 year age group and children under five years constitute 47% of the population and number 14.4 million. An estimated 85% of the population lives in rural areas, in isolated settlements, with an overall population density of 22 to 25 persons per km<sup>2</sup>. The physical features of the country show great variations in relief, further isolating settlements by making large-scale modern communications difficult. Until recently 90% of the population was illiterate. Although Ethiopia has been described as the water-tower of north-east Africa, a significant proportion of the population has only a marginal water supply. Rapid desertification and poor soil conservation have led to cyclical drought, crop failure and devastating famine. In areas with adequate rainfall, lack of farming technology has kept food production at subsistence level.

Although there is no formal registration of births and deaths, the crude birth rate is estimated at 44; perinatal mortality rate, 66; infant mortality, 155; child mortality, 247; and maternal mortality, 20. Despite these vastly excessive death rates the population grows at an estimated 2.5% per annum.

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Inadequate food production, uneven food distribution, ignorance and unfavourable sociocultural attitudes towards women and children are among the leading factors responsible for the high prevalence of malnutrition among children and pregnant and lactating women. The estimated prevalence of malnutrition among children under five years old is between 500 and 600 per 1000 at risk. The home diet of pregnant women provides only 50% of the recommended food energy. The consequences of maternal undernutrition are not only excess perinatal mortality but also that 250,000 undernourished newborns are added each year to the number of malnourished children. Postnatal nutritional rehabilitation of these newborns is further hampered by marginal breast-milk production because of maternal undernutrition.

Of the specific causes of infant mortality, diarrhoea tops the list. The disease is microbial in origin and death is usually due to dehydration; but repeated episodes lead to malnutrition with all its attendant complications. Respiratory infections account for considerable morbidity during infancy and childhood. In urban and semi-urban areas tuberculosis is on the increase, and, if current trends continue, the control of tuberculosis may soon prove to be beyond the capacity of the health services. The impact of parasitic diseases, particularly malaria, on maternal and child health has not been formally assessed. Malaria is mezo-endemic in most parts of Ethiopia, with frequent epidemics and a high case-fatality rate.

While health problems related to infections and malnutrition dominate, there is mounting evidence of a high prevalence of neurological and behavioural problems in children. For instance, the prevalence of recurrent seizure disorders has been estimated at between 7 and 10 per 1000 population, a rate double that of leprosy. With so much gross neurological morbidity, the prevalence of subtle mental disorders that are known to affect learning and socialization is likely to be particularly high.

Most neurological and behavioural disorders in later childhood arise from intrauterine and perinatal causes. Approximately one-third of perinatal deaths are due to antenatal bacterial infections, particularly prevalent among the poor, whose home diets are usually inadequate, and many of whom engage in heavy physical work during pregnancy. Antenatal bacterial infection augments the effects of birth asphyxia and neonatal jaundice to bring about irreversible brain damage. Because of maternal undernutrition leading to cephalopelvic disproportion, 20% of babies who come to delivery die from obstructed labour. Approximately 7% of births are premature and in the absence of adequate health services 75% of them die during the first week of life. Among those who survive there is a high prevalence of neurological damage.

Women suffer the effects of too frequent pregnancies and the hazards of childbirth without skilled care. Among the chief causes of maternal mortality and morbidity are obstructed labour, haemorrhage and puerperal infections. Among infections, gestational hepatitis deserves special mention since its mortality approaches 100% among the poor and the undernourished. While gestational anaemia is rare in highland Ethiopia, it may be an important cause of morbidity in the lowlands, where the staple diet is deficient in iron and possibly also in folic acid, and where the prevalence of hookworm infestation and malaria is high.

#### Past and present MCH activities

Formal child health activity began in 1957 with the establishment of the Ethio-Swedish Paediatric Clinic. This was soon followed by the founding of the Children's Nutrition Unit, which later became the Ethiopian Nutrition Institute. The twin institutions acted as centres for generation of research information and training. At the same time the health team of the former Gondar Public Health College began to man health centres, which provided MCH services. Despite the excellent beginning of two-and-a-half decades ago, the expansion of maternal and child health services has been seriously hampered by lack of political will on the part of policy-makers, planners and administrators; lack of comprehensive health policies, strategies and a plan of action; inadequate manpower training as regards both quantity and quality;



uneven allocation of resources; and an uncoordinated administrative structure and system within the health sector.

At present only 8.4% of hospital beds are allocated to children and less than 5% to obstetrics. There are only 39 paediatricians and 42 obstetricians, mostly foreigners. These are assisted by 24 paediatric nurse practitioners (PNP) and 104 midwives. When facilities are computed in terms of demand, there are 15,578 children per hospital bed and 3000 deliveries per obstetric bed.

As regards ambulatory care, MCH services are delivered in 127 rural health centres and urban MCH clinics in Addis Ababa and Asmara. The rural health centres allocate no more than 15% of their time to MCH. The amount and the quality of MCH in health centres and health stations are further reduced by lack of supplies, inadequate training and supervision of staff, and an overwhelming burden of acutely ill patients of all age groups. There has been almost no formal evaluation of the activities of health centres and none of health stations which provide primary health care. Health stations are staffed by health assistants, whose training in MCH is far from adequate, and lack of transport and a severe manpower shortage have hampered their regular supervision.

Because of overwhelming demand for curative services, and lack of knowledge, negative attitudes, and severe shortage of resources it has not been possible to develop a comprehensive preventive MCH programme. In both primary and supportive health services, high-risk pregnancies and infants are not selected for special attention, immunization and family planning programmes are irregular, and health and nutrition education is unstructured. At administrative levels there is very little interaction among research, academic, administrative and planning personnel, and this prevents the timely flow of information and skills to the primary and supportive health services.

#### MCH: a priority for the future

The Government is engaged in a revolution aimed at bringing about fundamental political, sociocultural, socioeconomic and institutional changes. These include the mass organization of the people, and the nationalization of the means of production. The Government regards health as an important determinant of the quality of life, and the right to health as an integral component of social justice. At the same time, health is considered a prerequisite of socioeconomic growth and development. Based on these principles, and in line with the content and spirit of the National Democratic Revolution Programme, the Ministry of Health has embarked on a plan of action to strengthen and expand the health services so as to reach all the people. Towards this end, the Ministry of Health fully subscribes to the principles of the Alma-Ata Declaration: that primary health care is an integral part of a country's health system, its central function, and its main agent for delivering health care; and knows that, without the support of the rest of the health system, primary health care will be ineffective and may collapse. The planning, organization and operation of the health system is a continuous process, and progress in extending coverage and expanding services can be achieved only through well-designed research and development programmes.

The Government realizes the enormous health needs of mothers and children and, to ensure a healthy and strong future for socioeconomic development, has given due priority to the rapid expansion and strengthening of maternal and child health services as a component of the strategy for achieving the goal of health for all by the year 2000.

#### OBJECTIVES OF THE MCH PROGRAMME

The stated objectives of the MCH programme are:

1. To significantly reduce the maternal and child morbidity and mortality rates through improved and extensive promotive, preventive and curative services, as evidenced by data from community surveys and morbidity and mortality statistics.

2. To extend comprehensive maternal and child health services into the rural areas within the framework of primary health services so that the services will be accessible to all mothers and children.
3. To prevent malnutrition and infection among mothers and children through nutrition education, health education, environmental sanitation, and immunization.
4. To protect the health of mothers by preventing frequent pregnancies and fetal wastage through family planning services, so that each family will be of reasonable size, corresponding to its socioeconomic and health conditions.
5. To constantly update the level of knowledge of health personnel on recent advances and new trends and approaches in maternal and child health.
6. To ensure that adequate emphasis is given to MCH training in the curricula of health personnel.
7. To train adequate numbers of health workers at all levels in the different specialized fields of maternal and child health.
8. To coordinate efforts with organizations and institutions related to mothers and children towards their improved care.
9. To initiate, coordinate and develop operational and other relevant research in MCH in order to improve the delivery of health care.
10. To provide a service at a cost commensurate with the financial, manpower and material resources of the country.

The short-term specific objectives for the period 1981-1984 are:

1. To increase in the period from 1981 to 1984 the access to primary and basic health care services from 34% to about 54% of the population by constructing 800 new health stations and 80 new health centres.
2. To develop and strengthen the MCH Coordinating Offices in the Ministry of Health and Regional Health Departments so that they can plan, organize, implement, supervise and evaluate the MCH programme and services in cooperation with all other related units and relevant institutions, including the National MCH Centre.
3. To train MCH workers to staff the existing and newly constructed health facilities: about 6300 health assistants, 1375 nurses, 120 tutors, 340 MCH nurse practitioners, 120 nurse-midwives, and 100 paediatric nurse practitioners.
4. To train 14,000 traditional birth attendants and 14,000 community health agents in order to establish community health services in farmers' and urban-dwellers' associations.
5. To establish an effective referral system for MCH between all levels of clinical competence, from the community health service level to the National MCH Centre.
6. To improve the utilization of the services by means of improved distribution, better staffing and more effective MCH services.
7. To conduct evaluative research in order to facilitate the attainment of the above-stated objectives.



## THE HEALTH CARE SYSTEM

In an effort to reach as many mothers and children as possible, MCH services will be provided in the community, in other primary health care facilities, and in the supportive health services. Fundamental to such a programme is a system of interaction that ensures bi-directional support and links the health administration and various academic and research institutions that directly and indirectly support primary health care.

A pyramidal structure of the MCH components of the health care system is envisaged, with increasing complexity of function but linked with well-defined health programmes. It has the following seven levels:

1. Community health care. Community health agents (CHA) (trained for three months) and traditional birth attendants (TBA) (trained for one month) serve farmers' and urban dwellers' associations, with an average population of 2000. Their tasks are to educate the public on prevalent health problems and methods of controlling them, to promote adequate nutrition and an adequate supply of potable water, to treat minor illnesses and injuries, and to refer high-risk cases to a higher level of care. Community health care is managed and financed by the community.

2. Health stations. Each health station will be headed by a health assistant, and serve an average population of 10,000. Among its major functions are: education on the major health problems of the area and methods of preventing them; promotion of food supply and proper nutrition; promotion of adequate safe water and basic sanitation; and maternal and child care including the supervision of pregnancy and delivery, immunization, treatment of common childhood illnesses, and family planning. Outside the health station the health assistant supervises CHAs and TBAs.

3. Health centres. The MCH activity of health centres will be headed by the MCH nurse practitioner. The MCH nurse practitioner is a new category of health worker, a qualified professional nurse from the basic nursing course who has completed a six-month programme of study and clinical apprenticeship in obstetrics and paediatrics. Each health centre serves an average population of 50,000 and supervises five health stations. Some health centres may undertake the training of CHAs and TBAs.

4. Rural hospitals. At this level of health care, physicians, midwives and paediatric nurse practitioners are responsible for MCH health care delivery. A rural hospital, with 60 to 80 beds, serves 50,000 people; 15% of the beds are paediatric and 10% obstetric. Its preventive, rehabilitative and promotive MCH activities are similar to those of the health centre. The rural hospital professional staff, in cooperation with the health centre, are responsible for the direct supervision of health stations and CHAs and TBAs.

5. Regional hospitals. At this level the MCH service is organized into departments of paediatrics and obstetrics and headed by paediatricians and obstetricians. Regional hospitals serve between one and six million people, depending on the size of the administrative region. They may eventually have 200 beds, on an average 20% paediatric and 15% obstetric. They are responsible for diagnostic and treatment services for referred cases; biomedical, epidemiological and health services research; and the training of health workers. They serve as the scientific and technical arm of regional MCH coordinators and assist in the formulation of policies, strategies and plans of action for the region. The MCH staff will directly supervise health centres and rural hospitals.

6. The National Centre for MCH. The envisaged National Centre for MCH of which the Ethio-Swedish Paediatric Clinic is designated as the nucleus has been established for the advancement of MCH. It consists of the Babies and Children Hospital, the Maternity Hospital, and the MCH Institute. It serves as the scientific and technical arm of the health administration embodied in the Office of Planning and Programming and the Office of the National MCH Coordinator. Among the National Centre's specific functions will be under-



graduate and postgraduate medical education, post-basic nursing education, and the continuing education of physicians and other cadres of health workers; biomedical, epidemiological and health services research; the production of health educational materials both for professionals and for the public; and the diagnosis and treatment of referred cases. The Centre will directly supervise health centres and rural hospitals within its region and coordinate its activities with regional hospitals by regular exchange of staff, information and trainees.

#### HEALTH MANPOWER DEVELOPMENT FOR MCH

There are three broad categories of health manpower in Ethiopia:

The general health practitioners include the community health agent (CHA), the health assistant, the comprehensive nurse, the general medical practitioner, and the health officer. All of these are trained in maternal and child health. In the final two years of the general medical practitioner's training, up to 50% of the time is devoted to obstetrics, paediatrics and child health. Comprehensive nurses receive at least six months' MCH training in their final year. The health assistant is likewise trained for preventive, rehabilitative and promotive care integrated with curative care for pregnant and lactating mothers and their children. The MCH curricula of these cadres will be jointly revised and developed by the Ministry of Health and the National Centre for MCH.

The specialist health practitioners include TBAs, MCH nurse practitioners, midwives, paediatric nurse practitioners, paediatricians and obstetricians. All will be trained under the direct supervision of the National Centre for MCH and, where feasible, of regional hospitals. The training of paediatricians began in October 1979 in the Addis Ababa University graduate programme, and the training of obstetricians in late 1980. The MCH nurse practitioners' course was launched in October 1980 and is to be followed by an extended training programme for paediatric nurse practitioners and midwives.

The supportive health manpower category includes nutritionists of various categories and nutrition field workers, public health specialists in MCH administration, health economists and health planners, statisticians and demographers, health education specialists, laboratory technicians of various categories, and medical social workers. A comprehensive and rational programme of training awaits further study but prototypes of these categories are already in employment.

#### HEALTH SERVICES RESEARCH

Research and experimental development (R & D) in health has a long history in Ethiopia. As in the rest of the developing world it was conducted almost exclusively by foreign visiting health professionals. Between 1949 and 1978, only 800 to 900 papers were published on health in Ethiopia, in five European languages. A surprising 45% of the titles referred to maternal and child health and related subjects. Until the mid-1960s most of the publications had foreign authors. By 1974, most publications were jointly authored by Ethiopians and their collaborating associates from Scandinavia (mainly Sweden) and North America. Because of lack of comprehensive planning, and limitations in research capacity (information, expertise, infrastructure and funds) the coverage of MCH problems by R & D has been grossly incomplete both in extent and in depth of enquiry.

The major obstacles to R & D in health include:

a) An inadequate infrastructure. Almost all the research in MCH was done by the Ethio-Swedish Paediatric Clinic and the former Children's Nutrition Unit (now the Ethiopian Nutrition Institute). It was largely biomedical and clinical, and emphasized the child. Since the mid-1970s, however, collaborative research of a comprehensive nature in perinatal and infectious diseases, particularly diarrhoea, has been conducted, but owing to lack of funds and manpower, and unsuitable administrative arrangements, other relevant institutions, particularly in the rural areas, have been unable to take part in this research.



b) Inadequate scientific and technological information. Exchange of information through periodicals, seminars, symposia and conferences is minimal. There is only one health library, with subscriptions to no more than 250 health periodicals, many of which are lost in transit. Until recently, only one health journal appeared regularly. There is only one annual scientific conference, made available through the efforts of the Ethiopian Medical Association.

c) Inadequate interaction among research, education and service institutions. Bureaucratic divisions between research, educational and service institutions have hampered the growth of R & D in health. Research institutions published critical information in international journals not readily available to the average Ethiopian reader and sometimes in languages little used in Ethiopia; and most of their research has not been problem-oriented and therefore did not provide ready-to-use knowledge for field health workers, planners and policy makers. Higher education has been confined to the undergraduate level, utilizing teaching material derived from developed countries, and according only a minor role to research experience in academic promotions.

d) Improper choice and transfer of technology. Since the bulk of R & D was carried out by visitors to the country, whose interest was necessarily limited, many transferred technologies were beyond the country's capacity to adopt, and were discontinued when the research came to an end.

e) Insufficient and inappropriate funding. An estimated 2.5% of the national health budget, mostly of external origin, is allocated for research. Half is accounted for by the budget of the Ethiopian Nutrition Institute. Funds and capacity for R & D do not always match, and therefore promising health research is discontinued for lack of funds, while sometimes unused research funds are returned to the central treasury.

f) Lack of commitment to R & D as a means of accelerating development. A fundamental obstacle is that there is no scientific tradition in Ethiopia, and consequently the role of R & D in the solution of socioeconomic problems is not fully appreciated. Accordingly efforts to establish a national body responsible for R & D were obstructed by the pre-revolutionary regime. Indeed, the "critical mass" for R & D has yet to be formed.

#### Health services research in prospect

The Government has established the Ethiopian Science and Technology Commission and the National Council of Science and Technology with the expressed function of formulating national science and technology policies, strategies and plans of actions, and inducing, encouraging and assisting institutions in R & D efforts to generate problem-specific, culture-specific and socioeconomically feasible technology. The National Health Research Council began work in September 1979 and has formulated an intermediate policy and plan of action.

The salient features of future R & D in health care are:

a) The formulation of sequential steps to ensure the generation and application of ready-to-use knowledge and expertise. These are, first, community diagnosis to identify prevailing and emerging health problems and establish baselines against which the efficiency and effectiveness of intervention programmes can be assessed; second, the study of the biological, psychological and sociocultural aspects of the problems to disentangle disease mechanisms and processes; and, third, the setting up of an intervention programme and its testing for specificity, technical and economic feasibility, and sociocultural compatibility.

b) The involvement of relevant sectors of the economy, since health is an indicator of socioeconomic development, and health problems cannot be solved or prevented in isolation from their determinants.



c) The use of appropriate technology, which will ensure continuity of activity, the applicability of the results of R & D, and ultimately the enhancement of the national capability in science and technology.

d) The participation of the community, since the mobilization of the masses and the release of their creative energy is fundamental to development. The people are the final effectors of health. In health R & D they can help in identifying health problems, in documenting and interpreting health data, and in assessing intervention programmes. A community that takes part in the search for the causes and nature of its health problems is likely to be sensitive to changes that result from R & D.

#### Research and development in MCH

As may be seen from the foregoing, the concept of health services research (HSR) developed over the years by WHO is in line with the basic principles which will guide the future of research and development in health in Ethiopia. HSR further helps to fill the functional gap between the health administration and academic and research establishments. It should be particularly relevant to Ethiopia, a country committed to self-reliant, non-dependent development, since it is country-specific, multidisciplinary, uses scientific methods, aims at ready-to-use knowledge and skills, and its results are at once addressed to practising health professionals, policy-makers, planners and administrators. In the context of Ethiopia, however, the concept of HSR needs to be broadened beyond the search for alternative management to include the generation of basic knowledge and skills in health. Two major aspects of HSR/MCH activity are proposed: strengthening national HSR/MCH capabilities, and specific HSR programmes in MCH.

National HSR/MCH capabilities are being strengthened by:

The establishment of a technical body in the Office of the National MCH Coordinator and the National Centre for MCH, to set up and administer a long-term HSR programme, assure the necessary institutional arrangements, and see that research results are applied by the primary and supportive health services.

The training for their HSR functions of health administrators and the staff of development centres and of research and academic institutions.

The establishment of a health information system which will obtain, analyse, store, retrieve, and disseminate information.

The strengthening of the Technocentre of the Ministry of Health, and of the laboratories of research and training institutions, to enable them to provide appropriate health technology.

The acquisition of funds for HSR from internal and external sources.

Regional and international collaboration in HSR.

Specific HSR/MCH programmes will be concerned with:

Identifying and meeting community needs on the bases of health indices related to perinatal and infant mortality, birth-weight distribution, and the growth and development of "under-fives"; longitudinal studies to determine the nature, course, and magnitude of infant and child health problems; and applying the "risk approach" to MCH.

Integrating MCH with other primary and supportive health services including nutrition, immunization, environmental health, family planning, and the services of community health agents, MCH nurse practitioners and other health workers.



Applying appropriate technology to pregnancy, labour and the neonatal period, to the processing of weaning foods, to vaccines and other biological products, and to laboratory methods in the field as well as in central research establishments.

Planning, financing and management of MCH, by the use of systems analysis and health economics, and by the evaluation of the impact of HSR on primary health care and its supporting infrastructure, with particular regard to cost.





## CONSOMMATION ALIMENTAIRE

Bouyain <sup>a</sup>

Ce projet s'inscrit dans le cadre d'une série d'études différentes dont les conclusions serviront d'information de base pour l'installation de futures centres de santé et de promotion sociale (CSPS) en Haute-Volta.

Les objectifs du projet sont les suivants :

- étudier l'état nutritionnel et les habitudes alimentaires des groupes vulnérables dans les zones d'implantation des soins de santé primaires (SSP) ;
- analyser les interactions entre l'état nutritionnel et certaines maladies infectieuses (paludisme, rougeole, diarrhées, coqueluche) ;
- mettre en évidence les facteurs annexes liés à la malnutrition : insalubrité de l'environnement, disponibilité alimentaire, situation économique ;
- élaborer des méthodes simples et pratiques d'amélioration et de surveillance nutritionnelle des collectivités dans le cadre des SSP.

Ce projet, localisé dans la région Toece/Tondou, à quelques 60 km. au sud de Ouagadougou, touche 38 villages d'une population totale de 20,691 habitants, dont 2,896 enfants de moins de 36 mois.

L'étude a été faite en deux étapes :

I. Une étude sur 1,031 enfants de 0 à 36 mois. La méthode d'échantillonnage a été utilisée pour sélectionner des villages à différentes distances de la route bitumée, ceci afin de minimiser l'influence de la voie de communication sur les habitudes de consommation alimentaires. Presque tous les enfants des 15 villages choisis ont été retenus.

L'enquête a été supervisée par le Service de SMI/Nutrition de la Direction de la Santé publique en collaboration avec l'OMS.

Cinq agents enquêteurs ont été formés à l'utilisation de questionnaires et ont ensuite interviewé les mères des familles sélectionnées.

Les résultats montrent que :

- le premier aliment est la bouillie légère préparée et donnée à l'enfant à partir de trois mois, sauf dans quatre villages où les enfants ont accès au plat familial très tôt. En général, cet accès a lieu dès l'âge de six mois ;
- les aliments protéiques sont introduits dans l'alimentation de l'enfant dès l'âge de trois mois. Cependant une forte proportion de ces aliments n'est introduite qu'entre 12 et 17 mois ;
- les légumes sont consommés ultérieurement (6-17 mois) et les fruits encore plus tard (12-24 mois).

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II. La deuxième étape de l'enquête fut constituée par une étude approfondie de quatre villages dans lesquels 179 sur 327 enfants, entre 0 et 24 mois, ont été observés.

En matière d'habitudes alimentaires, d'importantes différences ont été relevées entre ces villages, ce qui souligne la nécessité de les identifier dans chaque localité pour établir des programmes appropriés d'éducation nutritionnelle.

Deux villages se révèlent comme des communautés à risque spécial au point de vue de la nutrition. Dans l'un d'entre eux, il n'y a aucune consommation de fruits, et l'alimentation familiale à laquelle participe l'enfant, constituée d'un seul repas journalier, est insuffisante. Dans l'autre, l'enfant accède au plat familial dès sa naissance, et la bouillie est peu courante, sinon inexistante.

L'état nutritionnel d'une collectivité peut être considéré comme médiocre si le taux d'enfants survivant à quatre ans est inférieur à 80 %. Ces deux villages ont des taux respectifs de 78 et 77 %. Cependant, la pratique de l'allaitement maternel est bonne : de 0 à 11 mois elle est de 100 % et entre 24 et 29 mois, 67 % des mères continuent d'allaiter leurs enfants. Lors d'une rougeole, l'enfant est privé d'aliments protéiques. Par contre, la bouillie de riz pour traiter une diarrhée est bien connue.

Une étude sur l'état nutritionnel des enfants complètera cette enquête sur les habitudes alimentaires. L'information obtenue sera utilisée dans les programmes de formation des travailleurs de santé et dans celui d'information et d'éducation sanitaire de la population.



THE MCH-BASED FAMILY PLANNING PROJECT  
IN BOHOL PROVINCE, PHILIPPINES

A. Mangay-Angara<sup>a</sup>

1. PROJECT SUMMARY<sup>b</sup>

1.1 DESCRIPTION OF THE BOHOL PROJECT

The Bohol Maternal and Child Health-based Family Planning Project was a five year (1974-1979) project of the Philippine Ministry of Health. It operated through the public health system in the north-western half of the island of Bohol, 350 miles south of Manila. By 1979, the population of the project area was 425 000 and was growing at about 2% annually. Four-fifths of the people lived in rural areas and almost all (97%) were Catholics.

The Project became fully staffed in 1976. It stressed the MCH approach to family planning and used paramedics, especially midwives, to reach people in remote areas. Extension efforts included organizing, staffing and equipping primary health care centres; setting up small drug stores; training traditional birth attendants and volunteer barangay health workers; an audiovisual team which recruited family planning acceptors in remote areas; training and equipping nurses and midwives to insert intra-uterine devices (IUDs); and testing the acceptability of an injectable contraceptive, Depo-Provero, in five municipalities. The Project staff advised the Provincial Health Office and assisted with training, supervision, special projects, and evaluation.

Evaluation was an important part of the Bohol Project. Studies were done of baseline conditions and local beliefs and practices. "Before and After" surveys measured changes in family planning knowledge, attitudes, and practice and in MCH practices, morbidity, nutrition and socioeconomic conditions. A dual record system was maintained for four years and covered 8 000 households in the Project Area. It estimated levels and trends in fertility, mortality and contraceptive use. Twenty small studies were done to improve health and family planning services. Papers were published locally on topics ranging from abortion practices, birth weight and breastfeeding trends to patterns of migration and age at marriage.

In some studies comparisons were made with the Non-Project Area, the south-eastern half of the island, which had similar, though not identical, baseline economic and demographic conditions. Although such comparisons are instructive, the Non-Project Area, strictly speaking, was not a pure control area. During the project period the number of midwives in the Non-Project Area increased at about the same pace as in the Project Area, through World Bank support.

The Bohol Project was one of four similar MCH-FP projects. The others were in Indonesia, Turkey and Nigeria. The Project received technical assistance from the World Health Organization and the Population Council which also coordinated the international project. External funding of \$1.6 million came from the United Nations Fund for Population Activities (UNFPA).

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<sup>b</sup>This report has been compiled and abstracted from the final report of the Bohol Project and from some of the reports published from the project. For a description of the original study, see: Howard C. Taylor Jr and Bernard Berelson: Comprehensive Family Planning based on maternal/child health services: A feasibility study for a world programme, Studies in Family Planning 2, No. 2, February 1971, pp 21-54.

## 1.2 OBJECTIVES OF THE PROJECT

The 1974 project proposal laid down the following objectives which guided Project activities:

### Long-range

1. To improve maternal and child health and regulate fertility;
2. To determine and demonstrate effectiveness of a project in which family planning services are delivered through a well organized maternal and child care programme in a large and predominantly rural area.

### Immediate

1. To develop and provide a better quality of health services for mothers and children;
2. To introduce and/or improve family planning services in the context of an expanded MCH programme within the general health services;
3. To improve MCH-FP training and supervision of health personnel;
4. To undertake operational and other studies which will achieve the immediate objectives, including the determination of the types and amounts of programme investments which give the best results, in the light of available resources.

## 1.3 THE PLAN OF WORK

Project activities were incorporated into the operations of the provincial and local health services in an area constituting approximately half of the province, with a population of 425 000. The other half of the island province served in some senses as a control area.

Apart from the normal local health staff, Project personnel were recruited for special assignments and for research. Community participation was reflected in the construction of local health facilities (local health stations or primary health care centres and village drug stores) and in increased attendance at the MCH-FP and other health clinics.

Project activities consisted of:

a) The development of MCH and FP services: Ministry of Health norms/standards for the different aspects of MCH care were adopted and uniform procedures were applied (e.g. immunization, continuous monitoring of pregnant women with special attention to high-risk cases, prenatal, natal and postnatal care, nutrition including promotion of breast-feeding, infant and young child care, referrals, etc.);

b) FP education and services which were integrated at appropriate stages with MCH activities;

c) Strengthening health service statistics, including promotion of notification of births, deaths and notifiable diseases;

d) Training and supervision, which consisted of staff orientation on the Project's objectives, methods and activities; training of untrained hilots (TBAs) and of barangay health workers; training of nurses and midwives especially in IUD insertion and in providing guidance on the aims and methods of supervision.

e) Research in which service staff collaborated but for which special staff were recruited to undertake studies, including (1) the collection of base-line data for



assessing the existing situation and for observing future changes; (2) the undertaking of "before and after" surveys dealing with FP acceptance, health status, knowledge, attitudes and practice (KAP), the practice of FP, etc.; (3) measures to improve the collection of service statistics; (4) a population growth estimation study, and (5) special studies as indicated by Project needs.

#### 1.4 PROJECT RESULTS

The Project covered a five-year period (1974-1979) but considering the preparatory phase and incidental administrative constraint, the effective operational phase was only approximately 3½ years.

The results may be gauged from the following findings:

a) In the general health system, expansion of health facilities and increase in personnel generated by Project initiative and later by Government action; better means of transport to the primary health care centres (PHCC) (viz. bicycles, motor cycles, horses) allowing more services to be provided; introduction of village drug stores (botica) managed by the local population; and increased community participation in health action (e.g., increased use of local health facilities and assistance in constructing facilities);

b) MCH: identification of 99% of all priority cases in the area; increased consultation of pregnant women (68% in 1976 to 85% in 1979); decrease in the number of late first prenatal consultations (27% to 10%); decrease of consultations with hilots alone (21% to 12%) with corresponding increase of consultations with midwives (21% to 45%); decrease of hilot-attended deliveries (25%) with corresponding increase of midwife-attended deliveries (50%); reduction in the use of unsterile bamboo slivers for cord-cutting (18% to 6%); increased postnatal care services (60% to 80%) and increase in tetanus toxoid immunization of mothers before delivery;

c) Child health services: increase in consultations for ages 1-4 years; rises in BCG (48% to 72%) and DPT (48% to 79%) immunizations; and prolongation of breast-feeding (11.8 months to 13.0 months);

d) Family planning attitudes and practices: although a favourable climate was already evident at the onset, approval increased to 80% at the later stages when more husbands were also in agreement than earlier; sterilization approval increased (44% to 62%); use of pills and IUD declined but IUD use increased later after midwives were authorized to make IUD insertions at the homes; better knowledge on the alternative uses of FP; changes in acceptor characteristics at a later stage (younger, less educated, rural residence); and increase of acceptors among married women who had received MCH and FP counselling;

e) Demographic impact: although short duration of observation precludes conclusive evidences of impact on births, morbidity and mortality, findings in the offshore islands indicated a decline in the crude birth rate; fertility declines among married women were also suggestive of the Project's influence; the significant decline in tetanus neonatorum and tuberculous meningitis mortality may be attributed to the training of TBAs and the intense immunization campaign;

f) Research: its activities provided insights into the socio-anthropological aspects of MCH and FP; while the information obtained offered baseline information on knowledge, attitudes and practice in MCH and FP, the services and other activities indicated demographic and services trends.

#### 1.5 PROJECT TERMINATION

Until late in 1979 the Government in agreement with the assisting agencies had planned to extend the Project for another five years to enable completion of the demographic, MCH and FP studies and permit the full integration of FP into the other components of the basic health



services. By the latter means it was thought that morbidity and mortality declines among infants and young children would be better effected. FP coverage would also be expanded because of the involvement of all the local staff and through them a wider and deeper reach to the different segments of the population.

However, a policy change and a form of collaborative arrangement on FP with another agency took place towards the end of the year. This has resulted in a new proposal now under review by UNFPA. The Bohol Project itself was terminated at the expiration of the agreement.

## 2. RESEARCH ASPECTS OF THE PROJECT

### 2.1 RATIONALE

Early in the planning stage provisions were made for a research component in close association with the services. Its purposes were:

- a) to establish baseline data against which changes would be assessed resulting from improvements and innovations in MCH and family planning services, KAP in health and family planning and in the demographic situation;
- b) to secure information on the accuracy and completeness of vital, health, FP and service statistics including the factors that influence them;
- c) to obtain such necessary insights into the socio-anthropological characteristics of the population as would contribute to suitable approaches for improving MCH/FP practices;
- d) to undertake special studies to improve the effectiveness of MCH and FP services.

### 2.2 PROJECT ORGANIZATION FOR RESEARCH

The Project was organized in two main divisions, viz., an operational unit to oversee service delivery and an evaluation unit responsible for such activities as the systematic means of collecting, recording and analysing data for continuing and periodic assessments, and carrying out research.

The evaluation unit was staffed with specialists and had funds for consultative services. Administrative or contractual arrangements were made with educational and technical institutions for specific tasks or studies, and for computer services in some studies.

A core staff was trained to undertake special surveys and follow-ups, according to Project needs. Those with master degrees and research experience were oriented to their special fields of study at a university or other institution. Others were given direct on-the-job training. Those needing more specialized training were awarded fellowships. The senior staff of the evaluation unit, together with the Project adviser provided the general supervision on a day-to-day basis.

### 2.3 PROBLEMS STUDIED

These were concerned with the Project's problems and needs and may be grouped into the following categories:

- a) Problems on the infrastructural adequacy of the health services through which MCH and FP improvements were introduced.
- b) Problems on the efficacy and reliability of vital, health, FP and services statistics.
- c) Information on community beliefs, attitudes and practices in relation to health, MCH and FP, including their socio-anthropological setting.



d) Information on current patterns of MCH and FP and on changes that might result from improvements or innovations in these services.

Under each of these categories were individual studies on the various facets of the particular problems or needs. These studies were intended to provide individual and collective information or approaches useful to better Project management, and in certain respects to contribute to better services.

## 2.4 ACTIVITIES

For convenience, the objectives, design, findings and application of the Project studies are described under the following broad groupings: (1) baseline studies, (2) ethnographic (or socio-anthropological) studies, (3) "before and after" studies, (4) the Population Growth Estimation Study, (5) improvement of service statistics, and (6) special studies, including operational research.

### 2.4.1 Baseline studies

Six baseline studies were conducted early in the Project. Their objectives were: (a) to make an inventory and assessment of the physical infrastructure and the types of services available at the local health and medical services level, (b) to examine the health and medical service forms in use, and (c) to observe current practices in the registration of vital and health events. They consisted of surveys of the Rural Health Units (RHUs), RHU equipment and facilities, RHU personnel, public and private hospitals and clinics, the current use of health record forms, and vital registration practices.

The study design varied with the object of enquiry. In the survey of health services a questionnaire was prepared and sent to all medical officers in charge of the RHUs and hospitals. The study of the service statistics system entailed a review of all forms used by the RHUs in 1975. In reviewing the vital and health registration system, a questionnaire was addressed to all those responsible for vital and health registration in all municipalities in the Project area, and for each civil registry book a one-fifth sample of entries in every page was taken for analysis.

The analysis of the information used population estimates of the National Census and Statistics Office and the listings in the local hilot registry. At the time the only norm available for local health services was the staffing pattern prescribed by law. Health facilities including equipment were, however, subject to local initiative and resources but no standards had been prescribed from higher levels. Notations were therefore made of the health facilities in relation to conventional health services provisions, and these were duly taken into account in the analysis.

The studies on the RHUs produced valuable information on actual and needed facilities and services, such as the following: most RHUs rendered the standard components of health care such as MCH care, FP, immunization, curative and environmental sanitation services, but their frequency and patterns differed; the health centres varied in size and most received funds for their construction from a national agency (Philippine Charity Sweepstakes); many units lacked basic equipment (e.g., sphygmomanometer, weighing scales, minor surgical equipment and even thermometers) as well as medical supplies and vaccines. Key personnel (doctors, nurses, midwives) were lacking in a number of RHUs. The doctors tended to stay in the clinics, and home visits were made by nurses and midwives, the latter also performing the greater part of the deliveries. While the RHUs had facilities and services for FP, the hospitals except the Provincial Hospital and a few private clinics did not render this service.

The review of service records showed many different forms in use. Information in family folders was usually incomplete. The recording system needed to be simplified.

The civil registry system was incomplete. There often was a time-lag between an event and its registration. Births were better recorded than deaths. The quality of registration was



inadequate for research purposes.

The findings obtained were helpful because:(a) they provided benchmark data on existing health facilities, the number of personnel available and the recording and reporting systems; and (b) they served as a basis for recommending or changing the organization and content of the local health services.

#### 2.4.2 Socio-anthropological Studies

The objective was "to obtain information on local population beliefs and practices relating to health and FP as well as to life-cycle events (conception, childbearing, infant feeding, childhood, puberty, adolescence, marriage, family structure, household decision-making, illness, death and burial)".

The studies employed the case-study method and participant observation. Data-gathering took place in six barrios representing different ecological areas and was conducted by six locally recruited field workers. The study framework was provided by a consultant social anthropologist from the country's state university and the study was supervised by the Director of Evaluation.

Topics of enquiry included: Indigenous medical cures in Bohol, 1976; Beliefs and practices related to maternal and child care in the project area, 1976; and Establishing a family, Boholano style, circa 1976.

The collected data covered conditions in six sample barrios; these were analysed by the Evaluation Unit in collaboration with the consultant. The findings consisted of the identification of local beliefs and practices but their prevalence was not elicited for lack of time.

The use of the findings was rather limited because the Project staff most involved in service delivery were locals who were already familiar with them. However, the findings were useful to the non-resident staff of the Project.

#### 2.4.3 "Before and After" Studies

The studies at the outset obtained baseline information on the health and FP situation and later dealt with changes in these factors as a result of Project activities.

Four studies were pursued in 1975 and 1976: a baseline FP acceptors' survey, a health practices and contraceptive use study, a pregnancy history study, and a nutrition study. These studies were repeated in 1978/1979, in some cases in modified form. In the repeated FP Acceptors' Survey in 1978 because of a national change in the FP reporting system, only records of acceptors before July 1977 could be utilized for review; this resulted in a "mid-term" instead of a "final" result and the title of the study was modified accordingly.

The design varied somewhat in the different studies. In the Baseline Acceptors' Survey attention was given to the characteristics of the FP acceptors and their continuation and pregnancy rates. All clinic acceptors before 1 October 1974 were listed and a systematic sample was taken using different sampling fractions for each major method (pill, IUD, condom, rhythm). A research firm was contracted for the study which included the interview of 1 785 women in the Project and non-Project (control) areas. When the study was repeated in 1978 only acceptors up to 30 June 1977 were included for the reason already stated.

In the Health Practices and Contraceptive Study, information was collected on a representative sample of 1 228 women from all of Bohol (Project and Non-Project areas) on the following: contraceptive use, knowledge and practice; practices in respect of pregnancy, delivery and child care; fertility; morbidity and socioeconomic status of households. The questionnaire was based on the findings of two project studies dealing with the indigenous practice of MCH and with socioeconomic indicators in Bohol.



The Pregnancy Study collected information on a representative sample of 1 124 women in the Project area on pre-project fertility and mortality, family planning use, age at marriage, premarital pregnancy and pregnancy loss.

In 1978 a Health Pregnancy Study corresponding with the two "before" studies above covered all of Bohol (Project and non-Project areas) by interviews of 2 102 women on FP knowledge, attitudes and practices, background characteristics and the socioeconomic condition of the households.

The Nutrition Study covered children up to five years of age in five ecological areas. An attempt was made to weigh all children in these age groups in the sample areas. The data were classified according to age, sex and ecological area. All third-degree malnourished children were followed up through their mothers.

The Nutrition Study was replicated in 1979 and an effort was made to weigh all children under six years in the five sample areas; 75% of the children in the initial study were included in the replication study. It was supplemented by an examination of the clinic records of cases of morbidity and mortality of mothers and children in the sample areas to see what kinds of nutritional deficiency prevailed, and by case studies of three families with at least one severely malnourished child.

The data from these studies were analysed by computer, except for the Nutrition Study. The computer analyses posed a major bottleneck because data had to be sent to Manila for key punching, editing and processing. The editing stages were particularly slow for lack of staff in Manila and the need to check back with questionnaires stored at Bohol. Owing to the poor communication system and slowness of computer work the "turn-around time" for a requested computer run was typically a month or more. This posed a problem for the "after" studies towards the end of the Project when time was short.

Findings of the "before and after" studies. Only the results of the "before" studies were available; those for the "after" were being finalized at the end of the Project.

Among female FP acceptors in all of Bohol only 10% were found to be IUD users; this group was the better educated and the highly motivated, and had higher continuation rates. The mean number of children among acceptors was 4.6 children. Among acceptors the most effective methods had the most side-effects, and users of the less effective methods had lower continuation rates.

In the Health Practice and Contraceptive Use Study it was observed that: pregnant women first consulted the health centre of the RHU at about the fourth or fifth month and averaged three or four visits before delivery; over 90% of mothers delivered at home, of whom two-thirds were delivered by the hilot; no postnatal care was usually given to the mother; most mothers (92%) breastfed with an average duration of 16.6 months (project area 17.9 months; non-project area 15.5 months); the subjects perceived FP as an approach to population control, a method for spacing and a means of maintaining the mother's health; 84% of the group approved of FP but only 71% of the husbands did so; more than half of the women were against sterilization; FP methods in the order of their acceptability were rhythm, pills, withdrawal, condom and IUD but there was a wide gap between knowledge and practice and only slightly more than a quarter of the married women were using a contraceptive method.

In the Pregnancy History Investigation, a study of fertility regulation practices divided the sample population into four categories: (a) married women (fecund, currently pregnant with living husband); (b) married women (fecund, non-pregnant with living husband); (c) ever-married who could not have more children; and (d) never married. Each of these categories was further divided into contraceptive and non-contraceptive users.

Under category (a), 61% had previously practised contraception; users were seven years older than non-users, and 92% of the non-users wanted their current pregnancies. The user



group employed rhythm (52%), withdrawal (23%) and abstinence (8%), while 6% had stopped contraception to have a baby. Among the non-users 71% planned to employ contraception after delivery. The average family size preference of the non-users was 3.3 and of the users, 3.8 children.

For category (b), the mean age of the users was 34 years and the non-users, under 34 years and 66% practised contraception before the study. Most of the users employed rhythm, abstinence and withdrawal, with 60% employing one of these methods before their last pregnancy. Some 45% of the sample were planning to discontinue contraception. The desired family size among users was 3.8 and among non-users 3.6.

For category (c) the mean age was 43 years with 28% either widowed or separated. Two-thirds desired a family size of 3.6 children.

In category (d), 3.3% had been pregnant, 0.27% planned to employ rhythm, and 1.1% planned to employ other methods.

In the "Before and After" Nutrition Studies, very little evidence of improvement was noted in the two and a half years between the surveys. From the initial findings, third-degree malnutrition was found highest (12%) in the offshore islands, followed by children in the fishing villages (8%), farming areas (5%) and urban/town sites (2%). Only 29% of the subjects were rated normal according to Philippine nutrition standards. Scrutiny of the data indicated that age and not sex was the determinant; e.g., malnutrition began to be noted beyond six months of age and third-degree malnutrition was observed at two or more years of age.

In the "after" studies, the percentage of children categorized as "normal" declined considerably, from 28% to 14%, while the percentage having second- or third-degree malnutrition increased slightly from 26% to 29%, the increment occurring from the group with first-degree malnutrition.

Application/Use. The results of the "before" studies were of immediate use to Project management (e.g., knowledge of prenatal practices or attitudes of women towards family planning, side-effects).

However, the full information anticipated from the study was prevented by delays in the analysis. Final reports of the studies were not available at the end of the Project.

The Nutrition Study was superseded by other studies and by the assumption of responsibility for nutrition in the area by another agency outside the Ministry of Health.

#### 2.4.4 The Population Growth Estimation Study

The objective of this study was to set up a system which would permit accurate measurement of vital and other related events during the Project's operation.

The study design provided for a dual recording system: the continuing collection of information on births and deaths; and periodic household surveys on births, deaths, other demographic information, and contraceptive use.

Because of the large population in the Project area (425,000 people) the study drew a one-ninth sample by random stratified cluster sampling. Sixty-three sample areas of different ecologic characteristics were selected consisting of 51 barrios or combinations of two adjacent barrios, four sections of municipal poblaciones, one municipal poblacion and seven sections of Tagbilaran City.

The Study had the following stages or components:

- (i) Mapping of the Project area (with the advice of an expert and the assistance of local



people). Boundaries were clearly defined, all habitable structures marked, and landmarks noted;

(ii) The collection of vital information from early in the study by trained statisticians who reported their findings fortnightly;

(iii) Periodic household surveys conducted by trained interviewers, three at six-monthly intervals followed by three at yearly intervals; the findings were always checked by a field supervisor before being transmitted to Project headquarters; the information included the name and occupation of the household head; the age, sex, marital and educational status, and migration status of all household members; contraceptive practices; and births and deaths in the household during the reference period. On the basis of the information obtained, the "household change technique" was employed to detect changes in subsequent surveys, and from these changes a demographic profile of the sample population was drawn up;

(iv) The setting up of matching rules and the matching of data obtained from the continuous collection of information on births and deaths with those obtained from the periodic household surveys; the matching rule was derived from a study of births and deaths from 24 sample areas, from which matching criteria and corresponding tolerance limits were established; the matching operation required three checks (first by a clerk-coder, then by a research assistant and finally by a research demographer); field verifications to reconcile household record listings with the household reports; and determination of birth and death coverage rates (i.e., proportion of births/deaths obtained by one system or both systems out of the estimated true number which are calculated to the Chandrasekaran-Deming formula).

(v) Tabulation of the data by hand instead of by computer: although this was tedious, it was adopted because of the delays associated with computer use; the material for processing dealt with over 8 000 households and births, deaths, migration and other information for each round; checking procedures gave satisfactory results and proved of immediate convenience to Project needs.

Findings Data from the dual system revealed a decline in the crude birth rate from 39 to 35 while the crude death rate increased from 8 to 10 per 1 000 population. In relation to ecological areas represented in the samples, the offshore islands had a higher crude death rate and the city and poblacion samples a comparatively low one. Another observation was that in Bohol births tended to be better reported than deaths. In general, the information collected by the civil registry system and the Provincial Health Office on births and deaths missed notifications by about 20 to 25% as compared with the data collected by the dual recording system.

The dual recording system in Bohol compared with another system in Northern Mindanao showed that vital rates were higher in the latter although their coverage rates were similar and both were improving over time.

Application/Use The dual recording system provided the Project with high quality information on levels of fertility, mortality, migration and contraceptive prevalence. The type of information obtained and changes observed were useful in determining actions to be taken as regards policy, organization and procedures for MCH and FP.

#### 2.4.5 Service Statistics

The objective here was to simplify the system and improve the collection of necessary information for health management needs. The design dealt mostly with administrative measures to rationalize and simplify the complex service recording system, and the research component involved the testing of new or modified forms, devising simpler ways of report presentation, and studying specific problem areas in service statistics.



At the outset the health service recording system had five record forms in use (maternal, child health, weight chart, clinical, FP), eight notebooks or logs (dispensary and field records, confinement dates, new FP clients, FP record, Pill/IUD notebook, mortality, hilot follow-up, tetanus toxoid), two types of index cards (FP, appointments), three records (PH statistics, mothers' classes, accomplishment notebook), and one family folder with individual records. However, not all RHUs used the same forms; most were short of blank forms, their records were often incomplete, and their filing systems differed from unit to unit.

Improvements in the system directed to procedures and contents included: means to identify all mothers and children eligible for service; constant updating of household surveys and of all report forms; developing the action file for reminding midwives of client follow-up; simplifying standard forms to minimize repetition/duplication of entries and to discard non-relevant entries. Additionally, instruction manuals for midwives were prepared on how to complete the service forms and how to facilitate report writing; verifications were made in the field when reports were found faulty; and special studies were initiated on some problems (e.g., the use and abuse of service statistics; the quality of service statistics in Bohol). The staff were encouraged to submit periodic reports promptly and to use graphic and more easily understood ways of presenting reports.

Findings. Certain constraints limited a favourable outcome. Thus, the service recording system was part of the national health service information system and could be altered only from the top; and the changes introduced in the reporting of FP resulted in some confusion of its recording by the health services.

Nevertheless some improvement took place: a better supply of blank report forms facilitated reporting; the guidance provided and verification of information in the field improved the quality of reporting sufficiently to make the information obtained suitable as a basis for management decisions and for providing rough indicators of service trends. These improvements were clearly discernible from comparisons between the Project and non-Project areas.

Applicability. Although the improvements in service statistics were only modest, the knowledge gained on practices and problems will be useful to the Ministry of Health when it finally proceeds with improving the system through its newly established Management Information System.

#### 2.4.6 Special Studies

Apart from the baseline studies on RHUs, 23 special studies were conducted, including the following:

##### 1. Midwives Time Study

To ascertain the proportion of the time spent by midwives on service record-keeping in relation to the time spent on other activities. Ten field statisticians each observed for one week the activities of one midwife at her station. Her other activities were out-patient care, visits to patients/clinics, attending meetings, participating in family surveys, cleaning the clinic, attending barrio events, running errands, and even idle periods. Record-keeping was found to take very little time in comparison with the other activities.

##### 2. Male Sexuality Study

To obtain information on men's attitudes to FP and sexuality, a small number of men were interviewed. It was found that men indulged the whims of pregnant women because they believed their demands came from the child in the womb; they believed in a double moral standard although they were aware of the folk idea that punishment was meted out to the erring spouse; they had a vague fear that FP might free the spouses for sexual activity outside marriage.



### 3. Transport Study

To detect any change in the midwife's service productivity if she was given transport, a small number of midwives were studied by comparing their services three months before and after they were provided with bicycles, motor cycles or horses. The study had unresolved problems in regard to the use of the transport. MCH services were found to have increased but not FP.

### 4. Evaluation of Mothers' Classes

To discern changes in the knowledge, attitudes and practice of mothers attending these classes, "before and after" tests were made on 87 women attending classes conducted by midwives in four areas. Follow-up interviews were made one month after the post-test. Modest improvement was noted in knowledge, attitudes and practice concerning MCH nutrition, FP and sanitation. Changes in MCH came easier than in FP and sanitation. At the end of the Project approximately one-fourth of all eligible women in the study areas had attended mothers' classes.

### 5. Husband-Wife Decision-Making Study

To find out the role of spouses in making FP decisions 80 couples were interviewed, husband and wife separately, from four different areas. It was found that consultation between the spouses was the most common practice and that the choice of method was either mutual or left to the wife. Couples knew little about the safety and effectiveness of different methods.

### 6. Service Delivery on Offshore Islands

To discover whether islands with no midwives (17 of 30 islands) were receiving health and FP services, three pairs of islands were studied, of which one of each pair had a resident midwife. Preventive services were found to be adequate even in the islands without midwives but emergency services were lacking.

### 7. More Productive and Less Productive Primary Health Care Centres (PHCCs)

To identify the characteristics of each category and the factors that distinguished them from each other, the number of MCH, FP and medical care services rendered during the preceding year by the centres under study were ranked; a further analysis was conducted on the five best and the seven worst centres. The more productive centres were found to receive more visits from staff at the main RHU, the clients were less educated and the population smaller. The midwives in charge of the productive units were older, single and more satisfied with their jobs than those at the less productive centres.

### 8. Changing Role of Hilots in Tagbilaran City

To determine the number of deliveries by hilots and the other services they rendered, 28 practising hilots were interviewed. Birth records were examined for the category of the attendant at delivery. Interviews were arranged also with the five midwives working in the city. It was found that hilots rarely handled deliveries alone but that they were very active in prenatal, natal and postnatal care, and that they assisted at about 40% of deliveries by midwives.

### 9. Vaccination Coverage of Priority Children

To verify the service statistics on vaccination coverage almost 1000 systematically selected households with children under five years were interviewed. It was found that 41% had had BCG vaccination (as against 52% recorded by the service statistics), and that 74% of all children eligible for DPT immunization had received the first dose and 27% the second dose (as against the service statistics figures of 56% and 43% respectively).



#### 10. Choosing Health Services (Modern and Traditional)

To ascertain prevailing practices on the type of health care sought by the population, information was sought on the illnesses occurring in 985 surveyed households during the four months before the interview and the kind of health care they had sought. This study used the sample households of the vaccination study and the information was obtained at the same time. No illness was reported in 42% of households. Among the 26% which reported sickness, treatment was either self-administered or given by family members; in the remaining 32% outside help was sought. Of the last group (408 persons) 53% sought a doctor's advice, 24% saw the midwife, 14% visited the barangay captain (who has a stock of medicines from other government agencies), 8% consulted a traditional healer, and 1% consulted a nurse. Some respondents thought that midwives dealt only with deliveries (in the Philippines licensed midwives are equivalent to the assistant nurse-midwife category).

#### 11. Problems of the Service Statistics System

To find out the problems underlying the inconsistent and incomplete reporting observed in a number of PHCCs, the problems of record-keeping and reporting among the 20 identified PHCCs were reviewed and defined. It was found that the midwives did not record and report all their services especially during home visits. Problems were associated also with a multiplicity of forms and the introduction of a new FP form. The study concluded that the recording system needed to be simplified.

#### 12. Characteristics of Clients having Sterilization Operations

To review the characteristics of this group and to observe changes in trends towards a smaller family size, a review was carried out of 465 women and 215 men who had been sterilized over the 3.5 years of the project. At the time of operation, the average age of the women was 33 years and of the men, 34 years. The women had on average 5.3 children and the men 4.8 children; no downward trend was observed in family size before sterilization.

#### 13. Comparison of FP Status as reported in the Survey and in Clinics

To detect differences in the records of the surveys and the clinics a comparison was made of the data between the Population Growth Estimate Studies and the service statistics for the same period concerning the contraceptive prevalence rates for women aged 15-44 and the mix of the methods employed. Three small supplementary studies were also undertaken to compare the FP status of individual women from the two sources. The prevalence rates from the two sources were usually similar but the mix of the methods differed greatly. The service statistics were often incomplete and out of date; they overestimated pill and condom use and underestimated use of traditional methods (rhythm, withdrawal, abstinence). Reporting for IUDs, sterilization and Depo-provera was consistent for the two sources.

#### 14. Cost Studies on Project Activities

(a) The expenditure of funds from international sources was \$620 000, or \$1.50 per head of the population over the five-year period (\$0.30 per person per year). The mid-period population of the Project area was 410 000.

During the same period the public health expenditure in the area, exclusive of hospital allocations, was approximately the same (\$600 000). This amount comprised the health services budget, paid out of national, provincial and local funds.

(b) A cost-analysis of midwifery services during 1978 was based on the estimates of the hours spent each week on services supplied by 48 midwives out of the total of 111 midwives in the service in 1978. The service hours were multiplied by their hourly wage. Besides midwives' services, clients received services also from doctors and nurses; hence the costing was an underestimate. The family planning figures included services given by government hospitals, but these were few. The total cost of midwifery services in the Project area for the year was P1,211 670 (\$164 853), an average cost of P4.40 (\$0.60) per midwife service (denominator 275 541 recipients).



Other studies described in the Project's publications are the following:

- (i) Follow-up of Depo-Provera clients;
- (ii) Evaluation of Boticas sa Barangay\*;
- (iii) Trends in IUD use (1969-1979);
- (iv) Barangay Health Workers;
- (v) Childbirth Practices in Bohol;
- (vi) Births and Deaths missed by the Civil Registration System;
- (vii) Cause of Deaths by Age in Bohol;
- (viii) Traditional Healers in Bohol; and
- (ix) Significance of Induced Abortion in Bohol.

## 2.5 PUBLICATIONS ON PROJECT ACTIVITIES

The Project's activities have been among the country's best documented in recent years. The writing of research notes and their distribution to various agencies (Ministry of Health and related government agencies, teaching institutions, scientific groups and scholars) took a substantial part of the staff's time and effort.

The following publications record the operational and research aspects of the Project:

Research Findings, issued by the Project, compiled summaries of results during its first four years;

Studies in FP, an international publication of the Population Council, devoted a special issue in June/July 1970 to the Bohol Project;

Initiatives in Population, a quarterly publication of the Population Center Foundation of the Philippines, had an article on the Project in June 1977;

Research Note Series, a series of 84 "notes" or papers sent regularly to 55 persons or organizations;

The Documentation Notes Series recorded the different phases of the major surveys of the Project and contained discussions on the sampling procedures, English and Visayan (Cebuano) versions of the questionnaires, interviewing manuals, field notes, coding manuals, field editing manuals, mapping manuals and methodological notes. Each major study had its own series: Vital Rates Series, 24 notes; Baseline Acceptor Survey, 10 notes; Health Practices and Contraceptive Use Study, 11 notes; Pregnancy History Study, 7 notes; Mid-term Acceptor Survey, 7 notes; Health Pregnancy Study, 7 notes; and special studies including operational research, 7 notes.

The Project also produced its annual reports (1975, 1976, 1977, 1978 and 1979); semi-annual reports sent to UNFPA through WHO; the bimonthly reports, discontinued in the latter stage of the Project; and the monthly reports which contained information on research activities and results as well as population and service statistics. The Final Project Report was issued in early 1980.

A complete listing of the papers produced by the Project appears in Appendix D, p. 260 of the Final Report. Copies of the individual papers/notes are kept by the Ministry of Health in Manila and by the agencies that assisted or participated in the Project.

## Lessons Learned

### General

1. Expensive buildings are not necessary for the delivery of health care in rural areas. The money is better spent on staff, training, logistic support, equipment, community organization and educational efforts.

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\*Small, community-run drug stores, selling basic drugs relatively cheaply.

2. Health and family planning programmes must devote considerable attention to logistic problems, adequate supplies of basic low-cost drugs, transport, equipment and record keeping.

3. The Project's boticas proved to be an inexpensive way of getting basic drugs to rural areas.

4. Horses proved to be cheap and practical for midwives travelling in hilly areas, while bicycles were suitable for flat areas. Motor cycles proved to be too expensive to purchase, maintain and run.

5. Health programmes must cooperate with traditional practitioners such as local traditional birth attendants. By training local practitioners (and learning from them) it is possible to upgrade health services in remote areas.

6. Eventually each community needs at least one person who can provide first aid, refer patients and treat simple illnesses. Because it would be prohibitively expensive to have one midwife or nurse per barangay (or village) it proved desirable to train and supervise volunteers, preferably those who were self-supporting and already providing health care (such as hilots).

7. "Laboratories" such as the Bohol Project can be useful to test programmes and solve problems they may encounter before they are extended to the country as a whole.

8. An evaluation unit can assist considerably in the management of a project, provided that the research is jointly planned by managers and researchers and the two groups cooperate throughout the research project.

#### Family Planning

1. An MCH programme can effectively deliver family planning services. Family planning is not necessarily engulfed by other preventive and curative services if the priorities are made clear to the field staff.

2. Paramedical staff (i.e. midwives) can safely do IUD insertions, give injections (including Depo-Provera) and prescribe pills. Midwives are closer to the rural population, in ample supply, less expensive than physicians, and, being female, may be preferred by female clients for some procedures such as IUD insertions.

3. The IUD can be made more popular if it is widely available, even at a client's home if requested, from a female practitioner.

4. Depo-Provera is an effective method of family planning and is suitable and acceptable to some clients.

5. An audio-visual team can be an effective way to teach rural people, especially men and older people not seen by the midwife, about health and family planning. The team must be highly motivated, well trained and adequately equipped. The work of such a team is very demanding.

6. More clients will avail themselves of sterilization if, after they have decided on it, they are followed up and provided with transport to a service point.

7. The rhythm method, along with other nonclinical methods, proved to be very popular locally, although it was not always used correctly.

#### Research

1. The Project's dual record system, though complex and relatively expensive, was very



useful in providing information on fertility, mortality and contraceptive use throughout the Project period. Smaller studies, e.g., one on morbidity, were occasionally added to the larger household survey. Hand tabulation provided quite prompt results.

2. The "before and after" studies provided considerable information, but it often came too late to be useful. The data were processed by computer in Manila and many of the papers were produced by consultants in Manila. Many papers came out only at the end of the Project. By contrast, the smaller operations research projects were often completed in several months. Simpler, more frequent, hand-tabulated studies would have been more useful to Project managers.

3. It is desirable that managers have some research training and that researchers be familiar with the goals and operations of a project.





SWEDEN'S HEALTH SCREENING PROGRAMME FOR FOUR-YEAR-OLD CHILDREN;  
ARE THERE ANY BENEFITS?

Tore Mellbin, Claes Sundelin<sup>a</sup> and Jean-Claude Vuille

In the early 1960s the Swedish National Board of Health and Welfare as well as many paediatricians, became increasingly concerned about the rates of participation of children at check-ups at the child health centres (CHS). Over 99% of all children under one year of age and over 90% in the second year were having all their examinations. Then, however, there was a decline in participation to only 56% by four years of age. It was felt that the pre-school preventive health service had to be strengthened so that more disabling conditions could be detected and treated earlier. At the same time the Central Committee of Handicap Voluntary Organizations in Sweden recommended to the Ministry of Social Affairs the establishment of a special countrywide health screening programme for all pre-school children.

In 1967 the Minister of Social Affairs commissioned the National Board of Health and Welfare with the task of drawing up regulations for general health screening of four-year-olds. After an investigation period and some pilot projects the countrywide screening programme began in 1968-1969.

In the county of Uppsala, as in most of Sweden's 28 counties, the health screening is incorporated into the system of child health care and carried out by the ordinary staff of the CHCs. The programme was initiated in January 1969, and since January 1971 all four-year-olds resident in the county have had the opportunity of having the screening examinations.

In accordance with the proposals of the National Board of Health and Welfare, the programme consists of the items shown in Table 1. Children with previously unknown health problems are referred to specialists at the University Hospital for clinical examination and, if necessary, treatment.

#### RATIONALE OF THE STUDY

One of the major issues in health services research today is the evaluation of health programmes. Even in an affluent society such as Sweden the resources are always limited. The expenditure for health services in 1977 was 9.5% of the Swedish national income, as against 7.3% in 1970. Cost control will prove necessary and without evaluation studies it has to be based on biased opinions<sup>b</sup>.

The health screening of four-year-olds takes up considerable resources in the form of physicians' and nurses' time and parents' absence from work. It leads to referral of about one-third of the children for diagnostic examinations and, if necessary, treatment. Another aspect which emphasizes the need for evaluation is that a sizeable proportion of children get drawn into therapeutic programmes for anomalies the natural course of which is relatively

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<sup>b</sup>Some relevant statistics concerning Sweden as a whole and the organization of early child health care in Sweden are given in Appendix 1.

unknown. In some cases, e.g., behavioural problems, it is not known whether the advantages of the treatment outweigh its drawbacks. Obviously, therefore, an appraisal of the results is necessary. However, the present evaluative study was not planned from the beginning by the responsible authorities, but is rather an expression of the need of scientifically trained physicians to study the true situation within their field of activity.

At the beginning of the 1970s several studies of the efficiency of the screening programme were undertaken at Lund and Uppsala and may be seen as the first step in evaluation. The results of these early studies can be summarized as follows:

- The programme is feasible with respect to systematic examinations and data collection.
- It is accepted by the public and the staff.
- The figures for total prevalence of health problems are lower when screening is decentralized than when it is performed by a few teams of specially trained professionals.
- Relatively high-quality preventive care (by paediatricians and child health nurses) of children of 0-3 years of age has not reduced the prevalence of previously undetected health problems at the age of four years by comparison with preventive health care by general practitioners and public health nurses.

To test the value of the screening procedure it has been considered necessary to carry out the evaluation further and analyse the effects on the children's health in a longer view.

One reason why the age of 10 years was chosen for follow-up was that it was thought appropriate to have adjustment at school as a starting point. At school the children encounter standardized demands, and for all children the possibility of meeting these demands, and the interplay with teachers and peers in the school environment, are of greatest importance. In Sweden a 10-year-old child has been at school for three years usually with the same class teacher. Furthermore, at school the children will have had a special health examination, and any serious health problems will as a rule be well known and documented by the school health service. Naturally a child who appears to have no problems at school may nevertheless have difficulties, e.g., in family relationships, but experience has indicated that all serious social, psychological and medical problems find expression at school.

#### AIM OF THE STUDY

The crucial questions were: What is the impact on the health of children in the long run? Is general health screening of four-year-olds in Sweden worthwhile? In what respects? What can be done to improve the screening programme?

On introduction of the systematic general health screening the programme was officially called "Handicap-Preventing Health Examination of Four-year-olds". Obviously nobody aimed at preventing such severe congenital handicaps as severe mental retardation or cerebral palsy by screening at the age of four. It is often difficult to translate broad goals into measurable specific objectives, but it may be said that the ultimate goal of the programme was to bring about an improvement of children's health by means of early detection and treatment of those pathological conditions and developmental anomalies that are amenable to treatment. To determine whether the goals of the screening programme have been achieved the evaluation must include a long-term follow-up study. If the screening procedure and the ensuing treatment have been successful, then the prevalence of health problems should be lower in a group of children who have had the chance to participate than in a group who have not had that opportunity.



In 1975 a project was undertaken at Uppsala with the aim of elucidating the impact of our systematic health screening of four-year-olds on the state of health at the age of ten.

#### PRINCIPLES AND PROCEDURES OF THE FOLLOW-UP STUDY

In the county of Uppsala, from the beginning, a computer was used for handling the data. Both data from the screening procedures (primary data) and data based on the results of consultations of specialists were computerized. This follow-up study would not have been possible without the use of a computer as a powerful tool.

As mentioned previously, in the early years after the introduction of the screening programme a scientific evaluation of the experiences from the first three years, 1969-1971, was undertaken. The subjects of these earlier studies were children born in 1965, 1966 and 1967 who had been called for the screening examinations. As the screening programme was introduced gradually, the number of participants was lowest in the first year ( $n = 1051$ ) and highest in the third year ( $n = 3540$ ), when all four-year-olds in the county were called for screening.

#### Material

The present follow-up study concentrated on those children born in 1965-1967 who when they were four years old were resident in what is now the municipality of Uppsala and who at the age of 10 years still resided there. No attempt was made to trace the children who had moved, and children who had moved into the municipality were not included.

The experimental situation. The conceptual framework for evaluative research is not difficult. It consists of measuring input and relating it to outcome. However, the practical problems are often substantial. Such problems are well illustrated by the difficulties met in creating an experimental group and a control group, a necessary step if the aim of the project was to be achieved. Like most health programmes, the screening was not planned as a scientific study but as a service activity, and therefore an experimental group in the strict epidemiological sense could not be selected. Evaluative health services research can seldom take the form of a controlled trial, and resort must be had to alternative strategies and compromises to attain a reasonable research outcome.

The main problem was that the health screening started gradually, which meant that the CHCs, each covering a defined area, entered the project at different times. The programme began in 1969, i.e., with children born in 1965. From the beginning of 1971 all children in all health districts were included. Since all children born in 1967 and resident in Uppsala at the age of four were given the chance to participate in the screening, the only children eligible for the control group were a fraction of those born in 1965 and 1966.

Originally it was intended to compare all the children who had had the opportunity to participate with all those who had not, but it was soon found that the selection of child health districts in the first two years was not random. Centres with especially interested health staff were included earlier, and these staff members also happened to be employed in the more privileged areas. Matching at the level of the child health district was therefore necessary. Contrary to the usual procedure, the control group was selected first and the experimental group was then selected by matching with the controls.

Control group ( $n = 947$ ): Figure 1 shows how the various CHCs joined in the screening programme during 1969. Children born in 1965, resident in the county of Uppsala at the age of four, and represented by the unshaded areas in the figure (i.e., born in a trimester in respect of which the CHC for the particular area had not yet begun the screening programme) constituted the control group.



Experimental group (n = 1112): Children born in 1967 and represented by the unshaded areas of Figure 1 were allotted to the experimental group.

Thus the groups are comparable in terms of geographical area and trimester of birth, if it is assumed that no major changes took place in the birth rate in these areas between 1965 and 1967. There were certain changes, in that new housing estates were built during these years, but only a small fraction of the child population was affected by this migration, and the effect on the composition of the samples must have been negligible. There were no significant epidemiological changes between 1965 and 1967. Both groups had the same basic child health care offered to all children before the age of four.

### Methods

Specification of programme goals: It is often difficult to translate broad and idealistic goals into measurable specific objectives. In this context it was of primary importance to define the concept "health problem" in respect of children at the age of ten. Otherwise it would not have been possible to compare the state of health of the experimental group with that of the control group. But it was also necessary to define the same concept in respect of four-year-old children to allow analysis of the reasons for success or failure with regard to different types of problems; this could be done only if it were possible to analyse the development of the state of health in different respects, in the interval between four and 10 years of age, in respect of each child. In other words, the predictive power of the health screening of four-year-olds was an important study object.

It was decided to define the concept "health problem" as a disorder which is likely to have a significant and prolonged impact on the child's health and development or to hamper the full utilization of his or her environment either at present or in the future. The formal criteria used in the study are presented in Appendix 2.

Collection of data. The data for the investigation were collected by interviews with class teachers and school nurses during the spring term of the children's third year. Of the children studied, 3.1% were in their second school year and 2.4% in their fourth year. Those in their second school year had been delayed because they had not been ready for school; after a medico-psychological investigation they had attended a so-called preparation class for one year before starting their first school year. The school's observation period for these children was thus the same as for the other children. The pupils in their fourth school year had begun school one year earlier than normal and had thus been observed for a year longer than the other children. The interviews took place in February, March and April 1975, 1976 and 1977.

The same persons - three registered nurses with considerable experience of work with children and adolescents - interviewed the teachers and school nurses in all three years.

The interviews with the nurses gave data concerning the following: weight and height, visual acuity in school grades 1 and 4, time of detection of visual disorder, result of hearing test (audiogram) in grades 1 and 4, handicap or specific chronic disease, psychological problems known by the nurse (slight, moderate or severe: aggressiveness, anxiety, dependence, hyperactivity, lack of concentration, peer problems, other psychological problems), social family problems, consultations with specialists from 7 to 10 years of age, hospital admissions, dispensation from gymnastics.

The information obtained at the interviews with the teachers dealt with handicap or chronic disease known by the teacher, general ability, dyslexia, speech problems, gross motor ability, fine motor ability, special schooling and instruction, psychological problems known to the teacher (same problems as for nurse interview), family social problems known to the teacher.



Quality of data: The data obtained were both "hard" (weight, height) and "soft" (e.g., behavioural problems). Of course, for the latter type of data, objective and reproducible criteria were not used in all instances, but operational definitions were employed throughout. For instance, dyslexia is said to be present only if it is corroborated by the teacher. Hence, the health problems in the present study should not be considered exclusively as characteristics of the children. Some of them should be seen rather as indicators of a problem encountered by a particular child in a particular situation at school.

A separate "objective" assessment of the child's functional capacity or behaviour and of the situational variables (expectations, demands, teachers' skill, etc.) might have been of interest, but was impossible for many reasons. However, the reality which is relevant to the present quality of a child's life, and to some extent also to his further development, is more closely related to his interaction with the environment than to particular objective measures in standardized tests.

To make this point quite clear the variable "cognitive ability" may be given as an example. The teacher's rating of this ability is certainly positively correlated with the result of an intelligence test, but there are noticeable exceptions. The first type of "error" is represented by a normally intelligent child whose intellectual performance in the classroom is below standard in the teacher's view. A child of subnormal intelligence who is considered by his teacher to be capable of normal performance at school will exemplify the second type of error. In both cases it is the performance at school, rather than the results of "objective" tests, that indicates the presence of a true problem. Since these true problems should constitute the main target of all preventive and therapeutic activity, knowledge of their prevalence is of considerable interest. This is not to deny the need of an objective assessment of all factors possibly contributing to the problem in an individual case when appropriate action has to be taken. For epidemiological research, however, the first task is to establish the existence or non-existence of what we prefer to call a "true problem" and its associations with certain intra-individual or environmental factors.

In addition to data collection by means of interviews, the study was supplemented with a special follow-up of the records of those eight children in whom the most serious health problems had been detected by the screening programme. The aim here was to ascertain whether some children had had very significant benefit, perhaps in the form of life-saving therapy, through the detection of a health problem and referral to a specialist.

#### Statistical Methods

For the comparison between the experimental group and the control group 56 health variables were used, based on the interview data. The statistical differences were evaluated by means of the  $X^2$  test. With respect to the number of comparisons and sample size, only differences at  $p \leq 0.025$  were accepted as significant.

#### RESULTS

The study group differed from the control group as follows: lower frequency of overweight, lower age of detection of visual disorders, fewer children in special class but more children with some form of therapeutic instruction, higher frequency of hospital admissions, larger number of unspecified psychological problems.

With the exception of the lower rate of overweight, the differences will probably prove to depend on bias arising from methods used. The difference in time between the two groups obviously created some evaluation problems. Findings that are difficult to interpret will not be further discussed in this context.

Table 2 gives the variables in which no significant difference was found.



It is seen that for the great majority of the health variables no difference was found between the experimental and the control group. The scrutiny of the records of the eight children with previously unknown serious health problems showed that most of the children had probably had some benefit from the therapeutic measures but that the screening was not decisive for the fate of any of them.

#### DISCUSSION

The general conclusion from this analysis is that with the method used in this study it has hardly been possible to detect any beneficial effect of the health screening. The measures employed are admittedly crude and incomplete, but they reflect most of the true problems from which school children of this age suffer. Although the health screening has not contributed to the prevention of most problems to a degree which reaches statistical significance, the possibility cannot be excluded that there may have been other beneficial effects not covered by the data collection. Thus it has not been possible to include information provided by parents. It is well known that children's behavioural problems at home may be different from those they exhibit at school. Also it must be admitted that the difference of two years between the experimental group and the control group may have brought about discrepancies. There is good reason to believe, however, that these problems are not severe enough to invalidate the main conclusion from the comparison between the two samples, namely that the health screening of four-year-olds has contributed little to the general state of health of ten-year-old children. There are several possible explanations for this negative and unexpected result.

The participation in the screening was about 98%, and the few non-participants did not show the attributes of a high-risk group. Therefore, non-participation as an explanation can be excluded a priori. There remain then the following five main possible explanations:

- Most of the long-lasting health problems in which early treatment is essential had already been detected before the age of four.
- The screening is effective, but the treatment is either effective or not carried out.
- The screening and the treatment of the children in the experimental group were effective, but parents, pre-school (nursery) teachers, etc., using informal methods, were equally effective in detecting health problems in need of treatment in the control group.
- The screening methods were not valid or their application in the routine health care situation was not appropriate.
- The precursors of ten-year-olds' health problems cannot be identified effectively by screening at age four, as the state of health undergoes important changes between four and ten years of age, under the influence of environmental factors.

The conclusions in respect of future preventive strategies will differ widely depending upon which of these explanations is considered most likely. A definite decision in favour of one or another explanation will probably not be possible, but it is hoped that further analysis of the data will make it possible to assess their relative importance.

A presentation of this continuing analysis is not within the frame of this paper, but the aim is to determine the predictive value of the screening programme in detail. This should give an answer to one of the most important questions: Is it the identification or the therapy which has failed? The next step, if the positive predictive value is low - and the preliminary results point to this - is to analyse the importance of social and demographic



factors for changes in health in the interval between four and ten years of age. If the influence of such factors as social class, material status, and others on health are strong enough to change a healthy four-year-old into an unhealthy ten-year-old or to turn an unhealthy four-year-old into a healthy ten-year-old, then the state of health may prove to be a much more dynamic phenomenon than is generally believed.

Are there any benefits?

The negative findings of this investigation are not enough to rule out multiphasic pre-school screening as a valuable tool in child health services. The general health screening of four-year-olds in Sweden was integrated in an already high-quality health care. The results could have been much more favourable if the children had not been supervised so well before the age of four. Further, there can be positive effects not detected by the evaluation methods used. For instance, the experience of the research group has been that the screening procedure has given doctors and nurses much valuable knowledge about young families and has also contributed to making parents aware that the staff of the child health centre has a comprehensive interest in them. Also, the research group is convinced that many children have had less suffering because of measures initiated by the screening programme. Effects of this type must be ascertained by other methods.

The screening programme

Source of information/ Examination	Performed by	Comment
Questionnaire	Parents	Replacing conventional paediatric history. Contains a few very simple questions about the child's mental and emotional development
Interview concerning child's behaviour and development	Nurse	
Assessment of mental development	Nurse/Physician	Draw a man, count 3 objects, participation at examination, observed behaviour
Test of speech development	Nurse/Physician Auxiliary	1969-1970. Simple observation (conversation). Since 1971 specific test: Pronunciation of 10 key words (pictures)
Hearing test	Auxiliary	Audiogram at 250, 500, 1000, 2000, 4000, and 8000 c/s. Pass level = 25 dB
Vision test	Nurse/Auxiliary	Single symbol. Snellen's E or Boström's hook. Each eye tested separately
Test for bacteriuria	Auxiliary	Uriglox
Height and weight	Auxiliary	
Physical examination	Physician	Special emphasis on motor coordination: 11 items in 1969-1970. 3 items since 1971
Dental examination	Dentist	Orthodontic abnormalities. Caries. Oral hygiene and gingival disease



Table 2

Health variables in seven- and ten-year-olds for which no significant difference between the experimental and the control group was found.

---

Visual acuity at 7

Visual acuity at 10

Hearing at 7

Hearing at 10

Time of detection of hearing problem

Vision problems in school

Hearing problems in school

Motor handicap

Epilepsy

Cardiac disease

Diabetes

Asthma

Malformations

Other handicap or chronic disease

Number of consultations with specialist from 7-10

Dispensation from gymnastics

Handicap or chronic disease known by teacher

General ability

Grade (at age 10)

Dyslexia

Speech problems

Gross motor ability

Fine motor ability

Psychological problems known by teacher:

Aggressiveness

Anxiety

Concentration troubles

Dependency

Peer problems

PIT (any psychological problem in teacher's interview)

Social problems known by teacher

Psychological problems known by nurse:

Aggressiveness

Anxiety

Concentration troubles

Dependency

Peer problems

Other problems

Social problems known by nurse

---

Figure 1

The participation of centres in the study and the constitution by trimester of birth of experimental and control group.

No. of Child Health Centre	Month of birth			
	Jan.-March	April-June	July-Sept.	Oct.-Dec.
1				
2				
3				
4				
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42				
43				
50				
53				
56				
58				

The unshaded area represents children included in the study. Those born in 1965 formed the control group and those born in 1967 the experimental group.

The shaded areas represent the children who entered the screening programme in 1969 and were excluded from the study for lack of a control group.



## APPENDIX 1

### SOME BACKGROUND DATA

#### Statistics

The Swedish population is about eight million, of which children of 0-14 years of age comprise 20.1%. Expenditure on health services amounts to US\$ 6 000, i.e., 9.5% of the national income. The cost of early child health care is about US\$ 20 million a year. The number of births per 1 000 women per year is 56.7. The average number of offspring per woman during the fertile period is 1.6. The number of children born in 1978 was 93 000. The number of doctors is 16 650 (2.0/1 000 inhabitants), of district medical officers ("GPs") in ambulatory care 1 600, and of paediatricians (hospital and district paediatricians) 750. The medical manpower resources used for early child health care (0-7 years) amount to 163 000 doctor hours yearly. The number of public health nurses is 3 000, of child health nurses 675, and of child psychologists (MCH care) 150.

#### Neonatal health care

Practically all children are born in hospital. Almost all obstetric departments and maternity wards have a paediatrician as a consultant. The paediatrician cooperates with the obstetrician during all at-risk deliveries. The Apgar score is recorded in every case. All infants undergo a structured examination during the first day of life and before discharge from hospital. A medical birth-notification is sent to the local child health centre before discharge, and a copy is sent to the National Board of Health and Welfare for registration. This contains information about complications during pregnancy and delivery and in the neonatal period. About 10-15% of the infants are supervised in a special neonatal ward (paediatric department), mainly because of immaturity, underweight, major neonatal adaptation problems, neonatal jaundice and infections. Of all infants born, 0.5-1% have congenital malformations and are therefore recorded in a special national register.

#### Child health centres

Child health centres for preventive child care have been in operation in Sweden for more than 30 years. Each centre is responsible for the supervision of 200-900 children within a geographically defined district. A nurse with special training in public or child health care is employed in each district. The physician, who spends two to four hours a week at the centre examining the children, is either a paediatric specialist, a physician undergoing paediatric training, or a district medical officer. An increasing proportion of children now have access to centres in which the doctor is a paediatrician. In 1975 this proportion was about 50% of all children of pre-school age.

APPENDIX 2

DEFINITION OF HEALTH PROBLEMS IN FOUR- AND TEN-YEAR-OLDS

2.1 Sensory and speech problems

Health problem	4 years	10 years
Visual impairment	mild ) moderate ) according to severe ) evaluation of ) specialist*  "deviant" moderate + severe	Visual acuity (corr.)  mild r. eye and l. eye $> 0.$ one or both $< 0.$ moderate r. eye or l. eye $\leq 0.$ severe r. eye and l. eye $\leq 0.$  "deviant" moderate + severe
Hearing impairment	moderate ) according to severe ) evaluation of ) specialist*  "deviant" moderate + severe	moderate $>$ dB at any of the + severe frequencies: 500, 1000, 2000, 6000 Hz at screening audiometry  "deviant" moderate + severe
Speech problems	mild ) (a. screening moderate ) ( by audiometry severe ) (b. screening by ) ( physician ) (c. evaluation by ) ( specialist*  "deviant" a. and b.: moderate + severe c. all degrees	mild teacher score 1 moderate ) teacher score 2 severe )  "deviant" all degrees

\*Evaluation by specialist: mild: Anomaly or disease for which treatment is recommended but which probably would not develop into a handicap if untreated

moderate: Anomaly or disease in need of treatment in order to avoid a future handicap

severe: Manifest handicap



APPENDIX 2

2.11 Physical health problems

	Definition at	
	4 years	10 years
Chronic physical health problem	Children with a definite handicap or specific chronic disease diagnosed and treated by the respective specialist	
Overweight: slight moderate and severe "deviant"	11-20% above standard weight (standard weight = mean weight for height in present population) all degrees	21% + above standard weight all degrees

APPENDIX 2

2.111 Performance problems

Health problem	Definition at	
	4 years	10 years
<p>General learning ability</p> <p>normal slightly reduced</p> <p>below standard "deviant"</p>	<p>"draw a man" and "count 3 objects"</p> <p>Score 0 1 2+</p> <p>below standard</p>	<p>) ) Teachers's rating ) below standard or grade 2 (normal = grade 3) or placed in special class</p>
<p>Dyslexia: mild serious "deviant"</p>	<p>Speech screening <u>A</u> or <u>B</u></p> <p>Serious</p>	<p>Rating by teacher</p> <p>Serious</p>
<p>Gross motor difficulties</p> <p>mild moderate</p> <p>severe "deviant"</p>	<p>Passes test with difficulties Fails in test but no obvious handicap Definite handicap All degrees</p>	<p>Teacher's rating:</p> <p>Score 1 ) ) Score 2 ) All degrees</p>
<p>Fine motor difficultes</p> <p>mild moderate</p> <p>severe "deviant"</p>	<p>Passes test with difficulties Fails in test but no obvious handicap Definite handicap All degrees</p>	<p>Score 1 ) ) Score 2 ) All degrees</p>



APPENDIX 2

2.1V Behaviour problems

Health problem	Definition at																				
	4 years	10 years																			
<p>Behaviour problem scores</p> <p>One score for each of the following problems: Aggressiveness, anxiety, dependence, hyper-activity, lack of concentration, peer problems, other problems.</p> <p>"deviant"</p>	<p>Sums of points (0,1,2) of respective items in nurse's interview</p>          <p>sum of scores of respective items &gt; 1</p>	<p>Combination of nurse's (N) and teacher's (T) rating</p>  <table border="1"> <thead> <tr> <th rowspan="2">Nurse's rating</th> <th colspan="3">Teacher's rating</th> </tr> <tr> <th>0</th> <th>1</th> <th>2</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>No</td> <td>mild</td> <td>mod.</td> </tr> <tr> <td>1</td> <td>mild</td> <td>mild</td> <td>severe</td> </tr> <tr> <td>2</td> <td>mod.</td> <td>sev.</td> <td>severe</td> </tr> </tbody> </table> <hr/> <p>moderate and severe</p>	Nurse's rating	Teacher's rating			0	1	2	0	No	mild	mod.	1	mild	mild	severe	2	mod.	sev.	severe
Nurse's rating	Teacher's rating																				
	0	1	2																		
0	No	mild	mod.																		
1	mild	mild	severe																		
2	mod.	sev.	severe																		
<p>Combined scores:</p> <p>"Acting out"</p>  <p>"Inhibition"</p>  <p>Any psychological problem</p>	<p>-</p>  <p>-</p>  <p>A. Any problem according to physician's general impression</p> <p>B. Total index score &gt; 4 (Index = combination of parent questionnaire, nurse's interview, examination of the child, and physician's general impression)</p>	<p>any aggression, concentration or peer problem in teacher's interview</p>  <p>any anxiety or dependency problem in teacher's interview</p>  <p><u>PIT</u>: Sum of scores in teacher's interview <math>\geq</math></p> <p><u>PIT2</u>: Sum of scores in teacher's interview &gt;</p> <p><u>PIN</u>: Sum of scores in nurse's interview <math>\geq 1</math></p>																			





EVALUATION OF THE MASS IMPLEMENTATION OF ORAL REHYDRATION  
IN DIARRHOEAL DISEASES OF EARLY CHILDHOOD IN THE GAZA STRIPA.H. Guinena<sup>a</sup>

The health services are provided by two major agencies: UNRWA<sup>b</sup> for those qualifying for its refugee status and the Government for both refugees and residents. UNRWA provides a comprehensive MCH programme which includes detection of high-risk children and mothers. It seeks to reach infants under one year of age and their mothers when they attend to receive their monthly dried milk and extra dry ration at the UNRWA health centres. The MCH programme included the establishment of rehydration nutrition centres early in the 1960s to treat severe diarrhoea and malnutrition. Since 1967 family planning activities have been part of the MCH programme. Over the years there have been a number of improvements in the sanitary conditions of the camps. Most of the refugee shelters have piped water, private latrines have been built, and in recent years self-help projects have brought other improvements.

Before 1973, services for sick children were hampered by too few beds, but in that year a paediatric hospital with 135 beds was established in Gaza town, and that with a paediatric ward of 60 beds in Khan Younis hospital is now providing care for all sick children in the Gaza strip.

## THE PROBLEM

The basic problem was to find ways of reducing acute diarrhoea in early childhood. Allowing for some inaccuracies in data, about 85% of all deaths in children under 12 years of age occur during the first year of life. Diarrhoea is still the main cause of infant morbidity and mortality, with a marked summer peak. In 1978 it was responsible for about 36% of infant mortality and 48% of post-neonatal deaths. In the 12-23 months age groups, 27% of the deaths were due to diarrhoea. Attendance records at UNRWA health centres also show that, of about 33 000 registered children under three years of age, about 15 000 had been treated for diarrhoeal disease during 1977-1979. No data are available from Government health centres.

## RESEARCH OBJECTIVES

The objectives were to:

- 1) test the effects of a project to apply oral rehydration therapy in the management of all acute diarrhoeas in children aged 1-35 months at both Government MCH centres and UNRWA health centres in a uniform manner throughout the Gaza strip;
- 2) evaluate the impact of full-scale oral rehydration therapy in acute diarrhoeal disease of young children in the Gaza strip.

To achieve these objectives, detailed guidelines on the management of dehydration in acute diarrhoea were worked out with the field staff engaged in the project and a protocol was designed for evaluating the impact of oral rehydration therapy on: a) total infant and child mortality (whether in or out of hospitals) related to diarrhoeal diseases in the age group 1-35 months; b) admissions to hospitals for acute diarrhoea; and c) diarrhoea-related malnutrition.

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<sup>b</sup>United Nations Relief and Works Agency for Palestine Refugees in the Near East.

These guidelines and protocols are annexed to this paper.

## RESULTS

The results so far show a reduction in hospital admissions from diarrhoeal diseases of 35.3% and a reduction in hospital deaths from diarrhoeal diseases of 34.4% in 1980 as compared with the pre-study year of 1977. Also, the infusions issued in paediatric hospitals dropped by 19.0% in 1980. Total deaths of children aged 1-35 months throughout the Gaza strip were reduced by 25.9% in 1979 as compared with 1977, and the deaths from acute diarrhoea dropped from 31.6% in 1977 to 28.5% in 1979. The mortality data for 1980 are still being collected. The results are summarized in Tables 1-5.

## IMPLICATIONS

The project has had three positive outcomes:

1) There was active community and family participation, which is continuing. Mothers of the children with diarrhoeal diseases are complying with advice given by the nursing staff at the health centres. This includes preparation of the oral rehydration salts (ORS) at home, their preservation in clean bottles, and very high attendance at the health centres on the third day of treatment with ORS, even if the children have normal movements. Many mothers attend at the health centres for ORS whenever their children have diarrhoea. They extend their participation in the programme by advising their neighbours about the general effects of ORS on diarrhoea and malnutrition.

The traditional "dayas" after being trained in the health centres advise the mothers, especially those who live far from the health centres, on the management of diarrhoea by the use of ORS. Some general practitioners who at the beginning of the research project did not favour oral rehydration, now have positive attitudes towards it and prescribe ORS packets at their private clinics.

In the West Bank a firm is now preparing ORS according to the WHO formula and the packets are available at the commercial pharmacies in the West Bank and the Gaza strip.

2) There is a general rise in the standard of service and in cost savings.

a) Because children with acute diarrhoeal diseases are cared for by nurses at all health centres in the Gaza strip, the medical staff can devote more time to other important aspects of the health programme that need their attention.

b) Almost all cases of acute diarrhoea are treated with ORS given by the health centres and consequently only those who do not respond are referred to hospitals. This reduces the number of hospital admissions.

c) Antibiotics for children with acute diarrhoea, formerly prescribed for many cases by general practitioners, are now prescribed much less frequently.

d) The savings are mainly due to fewer hospital admissions and shorter stay in hospital, fewer intravenous infusions in hospitals, reduced use of antibiotics in the treatment of diarrhoea, and less use of doctors' time at the health centres.

3) The study resulted in a better system of reporting child morbidity and mortality. Concerning mortality, to avoid under-reporting, a new system has been introduced to ensure that every hospital death is notified to the Government Public Health Department in the Gaza strip.

## CONCLUSION

The main conclusion is that improved health services have contributed to lowering rates of infant mortality and morbidity. However, long-term improvements in child health depend also on broader and continuing improvements in general social and economic conditions for women and children.



#### ACKNOWLEDGEMENTS

The valuable advice and guidance given to the writer by Dr R. Cook, Regional Adviser on MCH at the WHO Regional Office for the Eastern Mediterranean were of great help in conducting this research, and his review of this paper is highly appreciated. I am thankful to all my colleagues in UNRWA and the Government Public Health Department, Gaza for their continuous collaboration and support.

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TABLE 1

INCIDENCE OF ACUTE DIARRHOEA, 1980 - GAZA

Health Centres	"Diarrhoea Season"	Total for year
1. UNRWA Health Centres:		
- Total diarrhoeas: No.	7 550	10 519
- Acute diarrhoeas: No.	5 509	7 527
%	73.0	71.6
2. Government Health Centres:		
- Total diarrhoeas: No.	10 824	13 998
- Acute diarrhoeas: No.	5 337	6 971
%	49.3	49.8
3. Both UNRWA and Government:		
- Total diarrhoeas: No.	18 374	24 517
- Acute diarrhoeas: No.	10 846	14 498
%	59.0	59.1

TABLE 2

EFFECT OF ORS TREATMENT OF CHILDREN (1-35 MONTHS)  
WITH ACUTE DIARRHOEA AT UNRWA HEALTH CENTRES DURING  
DIARRHOEA SEASON - MAY THROUGH OCTOBER 1980, GAZA

Item	No.	%
1. Frequency of stools on 3rd day of ORS treatment:		
a. Returned to normal	4 136	75.8
b. Did not return to normal	906	16.6
c. Unknown	417	7.6
2. Weight on 3rd day of ORS treatment as compared to the 1st day of treatment:		
a. Gained weight	3 679	67.4
b. Lost in weight	837	16.0
c. Same weight	476	8.7
d. Unknown	431	7.9

Total children with study sheets: 5 459



TABLE 3

HOSPITAL ADMISSIONS AND DEATHS OF CHILDREN WITH DIARRHOEAL DISEASES (1-35 MONTHS) DURING DIARRHOEA SEASON (MAY THROUGH OCTOBER) IN 1980 AS COMPARED WITH THE PRE-STUDY YEAR OF 1977 - GAZA

	1977 Pre-study	1978	1979	1980	1980 as % of 1977	% reduc- tion 1980 over 1977
1. Total admissions from all causes	5313	5184	3879	4006	75.4	24.6
2. Admissions of non-diarrhoeal diseases	2964	3366	2668	2486	83.9	16.1
3. Admissions of diarrhoeal diseases:						
- number of cases	2349	1818	1211	1520	64.7	35.3
- total days of hospitalization	9041	-	-	6341	70.1	29.9
- mean hospitalization period	3.8	-	-	4.2	-	-
- S.D.	+3.2	-	-	+3.8	-	-
- Min.-Max. period in hospital in days	<1-27	-	-	<1-26	-	-
- Numbers of cases staying < 24 hours	45(1.9%)	-	-	108(7.1%)	-	-
4. Total hospital deaths (1-35 m) from all causes	320	264	242	230	71.9	28.1
5. Hospital deaths from non-diarrhoeal diseases	125	120	114	102	81.6	18.4
6. Hospital deaths from diarrhoeal diseases	195	144	128	128	65.6	34.4
7. Case fatality rate of hospital diarrhoeal diseases/1 000	83.0	79.2	105.7	84.2	101.4	-

TABLE 4

HOSPITAL ADMISSIONS OF CHILDREN WITH ACUTE DIARRHOEA (1-35 MONTHS AGE) DURING DIARRHOEA SEASON IN 1980, GAZA

Item	Value
- Total admissions from all causes	4 006
- Admissions of children with acute diarrhoea:	
. Number of cases	658
. Total days of hospitalization	2 969
. Mean hospitalization period in days	4.5
. S.D.	+ 3.7
. Min-Max period of hospitalization in days	<1-21
. Number of cases staying < 24 hours	20(3.0%)

TABLE 5

TOTAL DEATHS OF CHILDREN FROM ACUTE DIARRHOEA (HOSPITAL AND OUT OF HOSPITAL) OUT OF TOTAL REPORTED CHILDREN DEATHS (1-35 MONTHS AGE) IN ALL GAZA STRIP IN ALL MONTHS OF 1977 AND 1979

Year	Age Months	Total Children deaths from all causes	Deaths from diarrhoeal diseases			
			Acute diarr. only		Diarr.+ other causes	
			No.	%	No.	%
1977	1-11	971	333	34.4	150	15.4
	12-23	164	37	22.6	28	17.1
	24-35	48	4	8.3	7	14.6
	Total(1-35)	1 183 <sup>a</sup>	374	31.6	185	15.6
1979	1-11	721	221	30.7	111	15.4
	12-23	104	25	24.0	10	9.6
	24-35	52	4	7.7	6	11.5
	Total(1-35)	877 <sup>b</sup>	250	28.5	127	14.5

Z= 1.514 Not significant

<sup>a</sup> 42.0% were hospital deaths and 58.0% were home deaths

<sup>b</sup> 51.7% were hospital deaths and 48.3% were home deaths



ANNEX

- A. The detailed guidelines on the management of acute diarrhoea (objective number 1)
1. Start oral rehydration therapy as soon as possible during a diarrhoea episode.
  2. Include all children with acute diarrhoea in the age group 1-35 months but exclude from the evaluation those:
    - a) with severe dehydration/unable to drink;
    - b) vomiting more than three times an hour;
    - c) with rice-water stools, more than two an hour;
    - d) diarrhoea for seven days or more;
    - e) high fever (39.5°C), pneumonia, measles, earache or other possible causes of fever.
  3. Take body weight (to the nearest 10 g.)
  4. Instruct mother (and demonstrate) in how to prepare and administer oral fluid (spoon, glass, feeding bottle, feeding cup ... etc.). Instruct her to dissolve all contents of one packet in one litre (size of four "star" bottles) of cool previously-boiled water. Mother should taste the solution, which should taste less salty than tears.
  5. Begin oral rehydration treatment at the centre and instruct mother to continue at home.
  6. Instruct mother not to starve the child but to continue breastfeeding or feeding with diluted milk (50% dilution/1st day, 25% dilution/2nd day, undiluted milk/3rd day) and other foods as the child desires, in small repeated quantities.
  7. Use the occasion to educate mothers on how to prevent diarrhoea, viz., promotion of breast-feeding, hand-washing before preparing food and after toilet, value of boiled water, etc.
  8. Give mother sufficient ORS for two days and instruct her to come back even if the child recovers on the third day, or earlier if diarrhoea worsens, if new adverse signs appear, or if the child does not accept ORS. Instruct not to use leftovers from one day to the next.
  9. Instruct mother how much to give of the solution each 24 hours: as a rough guide, at least  $\frac{1}{2}$  litre to infants below six months of age or weighing less than 7 kg (they should also receive half a "star" bottle of plain water after every "star" bottle-fed ORS), and one litre to those above six months of age or 7 kg. ORS should be continued until diarrhoea stops for six hours.
  10. Warn her to stop ORS if the child's eyes become puffy.
  11. Instruct her to come early to the clinic if diarrhoea occurs again.
  12. When a child is brought back on the third day or is revisited:
    - if diarrhoea is diminished, no sign of dehydration and the child weighs more than on the first day - discharge with advice to feed the child with extra food for the same number of days that the child was sick;
    - if diarrhoea continues with mild dehydration and no weight gain, advise as in (5-10) above;
    - if diarrhoea worsens and the weight is markedly less, refer to rehydration nutrition centre, day care centre, or hospital as appropriate.

During the study, it was decided to exclude from the whole study those children already excluded from the evaluation, under A.2 a-e above (severe dehydration, vomiting more than 3/hour etc.) in order to save time and reduce the work-load on the medical staff. More detailed specifications were given to the health centres' staff to define more clearly the few conditions that had to be excluded from the study (A.2.e).

B. Evaluation of impact of the use of ORS (objective 2)

To achieve this objective, forms were designed for the accurate recording of the information selected for use in evaluation:

1. Number of hospital admissions for acute diarrhoea:

- a) due to failure of ORS therapy at home, and
- b) without prior ORS therapy.

2. Mortality due to acute diarrhoea:

- a) among cases so treated in the community and in hospital, and
- b) among those not so treated.

This is to be compared with the mortality rate resulting from acute diarrhoea during the season (June-October) in 1976, 1977 and 1978.

3. Volume of intravenous fluid dispensed in hospitals during the season (June through October) as compared with the volume used in the same months in 1976, 1977 and 1978.

4. Body weight throughout the episode if possible, as an indicator of adequacy of rehydration at the centres.

5. Body weight throughout the season (June through October) as compared with that in previous three years (1976, 1977 and 1978).

6. Number of children with degrees of malnutrition between October and March (inclusive) compared with the corresponding numbers of the previous three years.

C. Period of evaluation

ORS was introduced by stages in 1978 in Government MCH centres, and about the same time, the UNRWA health service began to turn from Najjar's salt (sod. citrate 0.75 g, sod. chloride 0.15 g, sod. phosphate 0.375 g, pot. chloride 0.375 g and sucrose 13.00 g) to the WHO-recommended formula. At the same time, while July-December 1979 was certainly part of the study period, it was considered as a "pilot stage", beginning in the middle of a diarrhoea season, during which some early difficulties were ironed out. Thus, the five years January 1977 to December 1981 have been broken down as follows:

- 1. 1977 : "pre-study" year
- 2. 1978 : a transition year
- 3. 1979 : transition year and pilot phase
- 4. 1980 and 1981 : two complete years of study proper

D. Project steering committee

A Government/UNRWA project steering committee was constituted in May 1980. It consists of eight members closely concerned with the study, including two co-chairmen (representing UNRWA and the Directorate of Health, Gaza).



SUMMARIES

THE RISK APPROACH IN MCH CARE IN BURMA

U Tin U

SUMMARY

Burma is participating in a WHO Collaborative Study on perinatal mortality and low-birth-weight deliveries. A two-part study was designed to include a retrospective analysis of vital events and pregnancy outcomes in a rural and an urban community of 50 000 population each, and a prospective study of all pregnant women to determine the outcome of pregnancy. In the first part a total of 5 677 pregnancies and 270 perinatal deaths (PMR = 47.6/1000 births) were reviewed and maternal factors associated with an increased risk of perinatal death were identified. These included parity, age, previous history of abortion or neonatal death, anaemia, hypertensive disorders of pregnancy, and residence. From these factors a profile of the high-risk pregnant women was constructed.

This paper presents the study design for the second part: a research project on the risk approach in MCH care. The hypothesis is that the study area will have a significantly lower perinatal mortality rate owing to this intervention strategy. Two townships have been designated for the project, and two rural health units have been randomly selected in each to serve as a control and a study area. At present, data on demography, histories of previous pregnancies, and maternal and childhood mortality are being collected by questionnaire in the four areas. Health staff in the study area are being trained to recognize high-risk pregnant women, and referral patterns are being established. It is estimated that 2 700 pregnancies will occur in these townships and it is planned to follow up these pregnancies for their outcome. The outcomes in the study area will be compared with those in the control area for the two-year period between January 1981 and December 1982.



APPROCHE EN FONCTION DU RISQUE DANS LES PRESTATIONS DES SOINS  
PAR L'IDENTIFICATION DES GROUPES EN SANTE MATERNELLE ET INFANTILE

U Tin U

RESUME

En collaboration avec l'OMS, la Birmanie a participé à une étude sur la mortalité périnatale et les naissances avec poids anormalement bas. Celle-ci comprend deux parties, (i) une analyse rétrospective des données démographiques et des suites de grossesses qui ont eu lieu dans une communauté rurale et une communauté urbaine de 50,000 habitants chacune, (ii) l'examen périodique de toutes les femmes enceintes afin de suivre le déroulement des grossesses. Nous avons étudié 5,677 d'entre elles et 270 cas de mortalités périnatales (47,6/1000 naissances). Ceci a permis d'identifier les facteurs maternels associés à une augmentation du risque de mortalité périnatale. Ces facteurs comprennent la parité, l'âge, les avortements et décès périnataux antérieurs, l'anémie, l'hypertension pendant la grossesse et le lieu de résidence. Ceux-ci permettent de dessiner un profil de la femme enceinte à haut risque.

Sur la base de ce profil, nous proposons un modèle d'étude pour la recherche sur le risque de mortalité périnatale. Nous formulons l'hypothèse que la zone étudiée aura un taux de mortalité périnatale beaucoup plus bas grâce à une stratégie d'intervention. Après avoir choisi deux communes urbaines pour le projet, nous avons sélectionné au hasard deux unités rurales de santé qui serviront de contrôle et de zone d'étude. Par questionnaires, nous collectons actuellement les données démographiques, l'anamnèse obstétrique et les éléments de mortalité maternelle et infantile, dans les quatre secteurs d'étude. Le personnel de santé de cette zone est formé au dépistage des femmes enceintes à haut risque, et des modèles de référence sont établis. Nous estimons à 2,700 le nombre futur de grossesses dans ces villes et nous prévoyons de les suivre. Nous comparerons les résultats de ce secteur d'étude avec ceux du secteur témoin pour les deux années allant de janvier 1981 à décembre 1982.

SOME ASPECTS OF THE HEALTH SERVICES RESEARCH  
IN MATERNAL AND CHILD HEALTH IN SHANGHAI

Chen Mei-pu

SUMMARY

The demographic, social and statistical background in which the Maternal and Child Health services operate in the city of Shanghai is briefly described. The main objectives of the Ministry of Health are to improve the quality of obstetrical care in order to lower the maternal mortality rate and to develop perinatal health care in order to maximise the chances of the survival of a healthy infant. In order to achieve these objectives, applied research has been initiated to develop appropriate and more effective methods for MCH care delivery. Examples of these ongoing projects and health services research are as follows: (1) content and educational methods and mass education by MCH workers at all levels; (2) evaluation of the usefulness of different maternal liaison cards; (3) identification of high risk pregnancies through a scoring system; (4) fetal movement monitoring in the supervision of pregnancy; (5) self-care for expectant mothers.

Preliminary results show that:

- public education on the priority of MCH care has created an increasing demand for improved MCH care services;
- the maternal liaison card is indispensable for assessing the quantity and quality of MCH services, the nature of the prevailing problems and an appropriate means of gathering vital statistics covering all levels of the MCH care system;
- the survey of risk factors is not yet specific and sensitive enough. The concept of risk approach needs to be revised, the scoring system modified and improved to meet the needs of the MCH/FP services;
- expectant mothers, commune members and MCH workers have found fetal movement monitoring acceptable. A detailed evaluation for one district shows that an abnormal fetal mobilogram is found significantly higher in high risk pregnancies (classified by other means), significantly higher in groups with abnormal Apgar scores and those with meconium stained amniotic fluid. These and other promising results call for the establishment of a population based normal fetal mobilogram to serve clinical purposes.
- the family self-care project is promising but needs to be carried out on a larger scale until the acceptability and effectiveness can be fully assessed.

All these studies will contribute to more appropriate MCH services which effectively meet the local needs in the delivery of primary health care.



QUELQUES ASPECTS DE LA RECHERCHE DES SERVICES DE SANTE  
SUR LA SANTE MATERNELLE ET INFANTILE A CHANGHAI

Chen Mei-pu

RESUME

Les données de statistiques démographiques et sociales sur lesquelles les services de SMI de la ville de Changhai travaillent sont décrites brièvement. Les principaux objectifs du Ministère de la Santé sont d'améliorer la qualité des soins obstétricaux, afin d'abaisser le taux de mortalité maternelle, et de développer les soins de santé périnataux de manière à augmenter au maximum les chances de survie d'un enfant en bonne santé. Pour réaliser ces objectifs, une recherche appliquée est mise en oeuvre afin de développer des méthodes appropriées et efficaces dans la prestation des soins de SMI. Des exemples de projets en cours de recherche dans les services de santé sont donnés ci-après : (1) contenu et méthodes d'éducation de masse par le personnel de SMI à tous les niveaux, (2) évaluation et utilité des différentes fiches maternelles de liaison (3) identification des grossesses à haut risque au moyen de système de points (4) mouvements du foetus en tant que moyen de surveillance de la grossesse (5) soins personnels des femmes enceintes.

Les résultats préliminaires ont montré que :

- l'éducation de la population sur la priorité des soins de SMI a créé une demande accrue des services de ce secteur ;
- la fiche maternelle de liaison est indispensable pour évaluer la quantité et la qualité des services de SMI ainsi que la nature des problèmes prédominants. Elle constitue un moyen approprié de projections démographiques couvrant tous les niveaux du système des soins de SMI ;
- la notation des facteurs de risque n'est pas encore assez spécifique et sensible. Le concept d'approche du risque nécessite d'être précisé, le système de notation devra être modifié et amélioré afin de répondre aux besoins des services de SMI/PF ;
- les femmes enceintes, les membres de la commune et le personnel de SMI ont trouvé le contrôle des mouvements du foetus acceptable. L'évaluation détaillée pour un district montre qu'un mouvement foetal anormal se rencontre le plus souvent dans les grossesses à haut risque déterminées par d'autres moyens, dans les groupes à haut risque détectés par des tests Apgar anormaux et dans les groupes identifiés par du liquide amniotique coloré par le méconium. Ces résultats prometteurs plaident en faveur de la pratique systématique du mobilogramme à des fins cliniques ;
- le projet de soins familiaux personnels est prometteur mais demande à être pratiqué à une plus grande échelle jusqu'à ce que son acceptabilité et son efficacité puissent être complètement évaluées.

Toutes ces études contribuent à des services de SMI plus efficaces afin de répondre aux besoins locaux dans la prestation des soins de santé primaires.

OPERATIONAL RESEARCH ON THE METHODS OF NUTRITIONAL ACTION WITHIN  
PRIMARY HEALTH CARE IN THE POPULAR REPUBLIC OF CONGO

Gbaguidi-Louya Rose

SUMMARY

WHO is the collaborating organization for this project, providing technical and financial support. The project is a study of the nutritional aspects of primary health care. It is original in the sense that it has a multisectoral character based in the community. Its aims are to develop methods of action to enhance the nutrition of the communities, which will be applied later throughout the whole country through the primary health centres.

Research in 12 villages (30 km from Brazzaville) will: (1) make a brief investigation of nutritional habits and of the nutritional and health conditions of infants and small children; (2) test the validity of the research methods used to assess nutrition and their suitability for use by the village health agent; (4) begin educational activities for the target groups; (5) study the different possibilities of cooperation; (6) search for and apply practical solutions to other problems related to nutrition.

The population studied consists of 292 children, 36 months of age or less, and 1 640 adults. Nutritional status measurements have been arm circumference and the relation between weight and age. The measurement of arm circumference has been found a useful and practical index, with a diagnostic reliability of 80%. At the same time, several clinical symptoms and signs were studied, and it was possible to show that the respiratory system troubles were the most frequent among children under 12 months of age, that diarrhoea is less prevalent than was thought, and that babies, on the average, are ill at least one day out of three.

The survey on demography showed an infant mortality rate of 120/1000 in the study population. This is relatively low compared with that of other African areas. The survey on nutrition showed that breast-feeding is nearly universal for children up to 8 months, and very prevalent up to 18 months. As for complementary feedings, a study was made on the proportional use of a group of five types of food by baby by day. Consumption of basic food-stuffs and vegetable proteins was found to be inadequate.

In January 1980 the project entered the phase of active execution in relation to the training of the "front-line" agents. These agents will establish adequate nutritional surveillance using individual cards; design survey cards on infant and small children nutrition; perform a variety of activities concerning demography, nutrition, sociocultural aspects, health as a whole including sanitation, preventive measures (and even elementary curative measures); develop special studies such as the composition of supplementary feedings for infants; begin nutritional education; and improve the economic aspects of food production.

As a result of this project, a positive impact can be reasonably expected, including a measurable improvement of the health and nutritional status of the zones that are the target of the present research, the acquisition of experiences applicable to other regions of the country, and the mastering of the research techniques and the techniques on community action adaptable to other projects.



RECHERCHE OPERATIONNELLE SUR LES METHODES D'ACTION NUTRITIONNELLE  
DANS LES SOINS DE SANTE PRIMAIRES EN REPUBLIQUE POPULAIRE DU CONGO

Gbaguidi-Louya Rose

RESUME

L'OMS collabore à ce projet et y apporte un soutien technique et financier. Il s'agit d'une recherche sur les composants nutritionnels des soins de santé primaires. Son originalité tient à son caractère communautaire et multisectoriel. Elle vise à développer des méthodes d'action en faveur de la nutrition des collectivités, applicables dans tout le pays par les services de soins de santé primaires.

Dans 12 villages situés à 30 km. de Brazzaville, on envisage : de faire une enquête rapide des habitudes nutritionnelles et de l'état nutritionnel et sanitaire des enfants en bas âge ; de tester la validité et d'identifier les méthodes de recherche nutritionnelles applicables par les agents de santé de village (ASV) ; de développer un système de surveillance praticable par les ASV ; de mettre sur pied des activités éducatives sur les groupes-cibles ; d'étudier les modalités de coopération ; de chercher et d'appliquer des solutions pratiques à d'autres problèmes relatifs à la nutrition. La population étudiée comprend 292 enfants de 0 à 36 mois et 1.640 adultes. Les observations nutritionnelles ont été faites en utilisant comme paramètres la circonférence du bras et le rapport poids/âge. Il s'est avéré que le premier de ces paramètres peut être considéré comme un indice pratique et utilisable, puisque l'on a obtenu 80 % d'exactitude dans les diagnostics. Simultanément, l'étude du pourcentage de certains symptômes et signes cliniques, a permis de constater que les maladies du système respiratoire sont les plus fréquentes avant l'âge d'un an, que les diarrhées sont moins fréquentes que supposé et que les enfants, en moyenne, sont malades au moins un jour sur trois.

En ce qui concerne les données démographiques, la mortalité infantile globale est de 12 %, chiffre relativement bas par rapport aux autres collectivités étudiées en Afrique. L'enquête alimentaire a montré que l'allaitement maternel est quasi systématique jusqu'à 8 mois et d'un pourcentage très élevé jusqu'à 18 mois. Pour l'alimentation complémentaire, on a étudié la consommation par enfant et par jour de 5 groupes d'aliments, constatant que, pour l'alimentation de base et les protéines d'origine végétale surtout, la fréquence de consommation était inadéquate.

Depuis janvier 1980, le projet est passé à la phase d'exécution quant à la formation des agents de première ligne. Le but est la surveillance nutritionnelle en utilisant des fiches individuelles ; l'élaboration de fiches d'enquêtes sur l'alimentation du nourrisson ; l'accomplissement d'activités diverses à caractère démographique, nutritionnel, socio-culturel, sanitaire, préventif (de type élémentaire) ; l'élaboration d'études concrètes telles que la composition de la bouillie du nourrisson, l'éducation nutritionnelle et l'amélioration de l'aspect économique de la production et du stockage des aliments. De ce projet, on peut raisonnablement espérer un impact positif : amélioration certaine de la situation sanitaire et nutritionnelle des zones étudiées, acquisition d'expériences transposables dans d'autres régions du pays et maîtrise des techniques d'enquête et d'action communautaire adaptables à d'autres projets.

## THE CUBAN NATIONAL CHILD GROWTH STUDY

J.R. Jordan

SUMMARY

It is only recently that the physical growth and development of children has been widely recognized as a sensitive index of the health and nutrition of a population. As developing countries with poor nutrition and high infant mortality rates improve their health standards, growth studies become increasingly important in the evaluation of health care and the development of the whole country. In 1969 the Ministry of Public Health of Cuba began an intensive programme to reduce the infant mortality rate, then 46.7 per 1000 live births, by 50%. At the same time, a national growth study was set up on the grounds that achieving the expected reduction in infant mortality would lessen the future importance of this rate and would make the assessment of the growth of children an appropriate additional evaluation measure.

A stratified multi-stage random sample of 50 360 non-institutionalized children, aged 0-19 years, drawn from the whole population of Cuba, was measured in a large-scale growth study during 1972-1973 on a cross-sectional design. Fifteen anthropometric measurements, puberty stages and menarche status were assessed. Hand-wrist radiographs were taken of 10% of the sample. Information about the social and educational status of the parents was obtained and parental heights were measured. One year later, 30% of the sample was re-measured to obtain growth velocity standards. The overall response of the population was 93%. Eleven quality control sessions were held in which all measuring teams compared results for validity, reliability and consistency. No significant differences were found.

Results of the study are being currently applied in child health services to screen atypical or vulnerable children below the 10th centile and above the 90th, together with those who deviate markedly from their previous centile channel.



ETUDE NATIONALE SUR LE DEVELOPPEMENT DE L'ENFANT A CUBA

J.R. Jordan

RESUME

C'est seulement récemment que la croissance et le développement physique des enfants ont été reconnus comme un indice sensible de la santé et de l'état de nutrition d'une population. C'est aussi de façon récente que les pays en voie de développement, ayant une situation nutritionnelle précaire et des taux de mortalité infantile élevés, ont amélioré leurs standards de santé. Aussi, les études sur le développement sont et ont été de plus en plus importantes dans l'évaluation des soins de santé comme pour le développement du pays tout entier. En 1969, le Ministre de la Santé publique de Cuba a commencé un programme intensif afin de réduire de moitié le taux de mortalité infantile (il était alors de 46,7 pour mille naissances vivantes). Simultanément, une étude nationale sur le développement fut amorcée dans l'espoir que la réduction escomptée de la mortalité infantile diminuerait l'importance qui lui est accordée et rendrait appropriée l'évaluation du développement des enfants.

Entre 1972-73, l'enquête étudia 50.360 enfants non-institutionnalisés, âgés de 0 à 19 ans, représentant les différents groupes d'âge. Quinze mesures anthropométriques et les différentes phases de la puberté ont été enregistrées. Des radiographies des poignets ont été faites sur 10 % de l'échantillon. Des renseignements sur la position sociale et le niveau d'éducation des parents ont été relevés, la taille des parents a été mesurée. Une année plus tard, 30 % de l'échantillon a été réexaminé pour mesurer la rapidité des changements. La participation de la population fut de 93 %. Onze séances de contrôle qualitatif eurent lieu, au cours desquelles toutes les équipes effectuant les mesures comparèrent la validité, la consistance et la véracité de leurs résultats. Ils ne trouvèrent pas de différences importantes.

Les résultats de l'étude sont utilisés par les services de santé infantiles pour détecter les enfants dont les mesures sont respectivement inférieures ou supérieures aux 10e et 90e percentiles, ainsi que ceux qui dévient sensiblement de leurs mesures antérieures.

HEALTH SERVICES RESEARCH IN MATERNAL AND CHILD HEALTH  
IN ETHIOPIA

Nebiat Tafari, Tewabech Bishaw and Hailu Meche

SUMMARY

Ethiopia, with an estimated population of 30 million and currently undergoing profound socialist revolution, is the largest of the least developed countries. The mass health problems of Ethiopia are similar to those of other developing countries. A high prevalence of infectious and parasitic diseases occurring against a background of malnutrition brings about excess death rates, with a perinatal mortality five times higher than in developed countries, infant mortality 10 to 15 times higher, childhood mortality 50 to 100 times higher, and maternal mortality 200 to 500 times higher. Despite these excessive death rates the population increases by 2 to 3% each year. Most of this increase is in the childhood population of under five years, who together with women in the reproductive age group constitute nearly half the population. This distortion of the demographic profile renders the nation vulnerable to the adverse effects of malnutrition and environmental contamination. Health problems dictated by the demographic factors are the rationale of the current emphasis on maternal and child health. A review of MCH activities in the recent past reveals gross inadequacies in both geographic coverage and content. The major obstacles to the development of comprehensive, efficient and effective MCH services in the recent past include lack of will and commitment within the health administration, inappropriate administrative and institutional arrangements, inadequacy of manpower in both quantity and quality, lack of information and skills, and, above all, lack of funds.

Among remedies for these deficiencies are the setting up of a rational health care delivery system in which primary health care is the central function and the main agent for the delivery of health care. Since the planning, organization and operation of the health system is a continuous process, research and development is an essential component of the total effort. To this end the strengthening of national capabilities in health services research (HSR) is a first step. The present paper indicates specific HSR/MCH programmes, integrated with the horizontal programme of HSR strengthening. They fall under four broad categories:

- a) assessment of needs of the community,
- b) study of the alternatives for MCH care delivery in primary and supportive health services,
- c) development of appropriate health technologies, and,
- d) approaches to planning, financing and management in MCH.



RECHERCHE DES SERVICES DE SANTE POUR LA SANTE POUR TOUS EN L'AN 2000  
EN ETHIOPIE : PRIORITE A LA SANTE MATERNELLE ET INFANTILE

Nebiat Tafari, Tewabech Bishaw et Hailu Meche

RESUME

L'Ethiopie a une population d'environ 30 millions d'habitants et se trouve dans une profonde révolution socialiste. C'est le plus grand des pays les moins développés. Les problèmes de santé de masse de l'Ethiopie sont les mêmes que ceux des autres pays en voie de développement. De la prédominance des maladies infectieuses et parasitaires sur un tableau de sous-nutrition et de malnutrition résulte un taux de mortalité excessif avec, par rapport aux pays industrialisés : 5 fois plus de mortalité périnatale, 10 à 15 fois plus de mortalité des nourrissons, 50 à 100 fois plus de mortalité infantile et 200 à 500 fois plus de mortalité maternelle. Malgré ces taux de mortalité excessifs, la population augmente de 2 à 3 % chaque année. La majeure partie de cette augmentation porte sur les enfants de moins de 5 ans qui, avec les femmes en âge de se reproduire, constituent près de la moitié de la population. Cette distortion du profil démographique rend la nation vulnérable aux effets adverses de la malnutrition et de la contamination par l'environnement. Les problèmes de santé dus aux facteurs démographiques déterminent l'accent actuel donné à la santé maternelle et infantile. Une étude des activités de SMI dans un passé récent révèle que la couverture, tant géographique qu'opérationnelle est inadéquate. Parmi les obstacles majeurs au développement de services de SMI complets, rentables et efficaces on trouve, dans un passé récent, le manque de volonté et d'engagement des autorités de santé, des mesures administratives et institutionnelles inappropriées, une main-d'oeuvre inadéquate, tant en quantité qu'en qualité, un manque d'information et de méthode et, par-dessus tout, un manque de moyens financiers.

Parmi les remèdes aux déficiences indiquées ci-dessus, citons la mise en oeuvre d'un système de distribution des soins de santé, au sein duquel les soins primaires seraient fondamentaux et agiraient comme principal agent de distribution des services de santé. Etant donné que la planification, l'organisation et le fonctionnement du système de santé est un processus continu, la recherche et le développement sont des composantes essentielles de l'effort global. A cet effet, le renforcement des capacités nationales des services de recherche sur la santé (HSR) est un premier pas. Le présent document met en évidence les programmes spécifiques HSR/SMI intégrés au programme horizontal de renforcement des recherches sur la santé et qui entrent dans les 4 catégories suivantes : (a) évaluation des besoins de la communauté, (b) étude des choix pour la prestation des soins de SMI aux services de santé aux niveaux primaires et de soutien, (c) développement des technologies de santé appropriées et (d) méthodes de planification, financement et gestion des services de SMI.

FOOD CONSUMPTION

Bouyain

SUMMARY

This project is part of a series of studies the results of which will form the basis for the development of the future centres for health and social promotion in Upper Volta.

The objectives of the project are:

- to study nutritional status and food habits of vulnerable groups in the zones where primary health care is established;
- to study the interactions between nutritional status and certain infectious diseases (malaria, measles, gastro-enteritis, whooping cough);
- to study the factors connected with malnutrition: environmental pollution, food availability, economic situation;
- to elaborate simple and practical methods for improvement of nutritional status and nutritional surveillance of local areas in the context of primary health care;
- to elaborate the themes for information and training of first-level health workers.

The project area is the region of Toce/Toudou, some 60 km south of Ouagadougou, consisting of 38 villages with a total population of 20 691 of which 2 896 are children below 36 months.

The study was made in two stages:

- I. A study of 1 031 children from 0-36 months. The method of stratified sampling was used to select villages at random at different distances from the asphalt road. This stratification was used to avoid the bias of the effect of means of communication on food consumption habits. Almost all the children in the villages chosen were included in the study.

The study was supervised by the Mother and Child Health/Nutrition Unit of the Directorate of Public Health, in collaboration with WHO. Five interviewers were trained in the use of the questionnaires and then interviewed the mothers in the selected families.

The results show that:

- the first food of the child is a light porridge given from the age of three months, except in four villages where the children partake of the family meal from a very early age. In general, they do so from six months onwards;
- protein-rich foods are introduced into the children's food from three months, but a large part of them are introduced only between 12 and 17 months;



- vegetables are introduced at a later age (6-17 months) and fruits even later (12-24 months).

II. The second stage was a deeper study in four villages, where 179 out of 327 children between 0 and 24 months were included.

Important differences were found in nutritional habits between villages, underlining the importance of knowing the habits in each locality to ensure an appropriate health education programme. Two villages were shown to be at special nutritional risk: in one fruit is not eaten, and the family's single daily meal which the child shares is insufficient; in the other children partake of the family meal from birth, and porridge is rarely used.

The nutritional status of a community can be considered insufficient if child survival at 4 years is less than 80%. In these two villages the rates were 78% and 77%. However, the pattern of breast-feeding is good: from 0 to 11 months the rate is 100%, and, between 24 and 29 months, 67% of mothers continue to breast-feed their children.

When a child has measles, protein-rich foods are withheld. Rice-soup for diarrhoea is a well-known treatment.

A study on the nutritional status of children will complement this study on food habits. The information obtained will be utilized in health manpower training and in the health education of the public.

THE MCH-BASED FAMILY PLANNING PROJECT IN  
BOHOL PROVINCE, PHILIPPINES

A. Mangay-Angara

SUMMARY

The Bohol MCH-based Family Planning project was one of four internationally assisted country projects.<sup>a</sup> It was based on the Taylor-Berelson design for MCH/FP programmes in developing countries.<sup>b</sup>

The project's objectives were:

- 1) to develop a better quality of MCH care;
- 2) to improve FP services "in the context of an expanded MCH programme within the general health services";
- 3) to improve MCH/FP training and supervision of health personnel;
- 4) to undertake studies that would contribute to the better health of mothers and children and promote family planning.

The project activities were undertaken in one half of the island with a population of 425,000, the other half was roughly used as a control area.

The studies were undertaken between 1974 and 1979 by service staff in collaboration with staff recruited specially for the research. These are divided in this report into the following six groups: collection of baseline data; socio-anthropological studies; "before" and "after" surveys dealing with FP knowledge, attitudes and practice, health status, etc.; population growth estimation study; improvement of service statistics, special studies relating to project needs.

As a result of the studies, improvements in the general health services included an expansion of health facilities and an increase in personnel, better means of transport in the primary health care centres, introduction of village drug stores and increased community participation in health action.

In particular there were improvements in the quality in services to pregnant women and children. Almost all MCH priority cases were identified. There was an increase in the number of consultations of pregnant women, consultations with midwives, deliveries by trained hilots and midwives, postnatal services, tetanus toxoid administration to mothers before delivery, consultations for children (1-4 years), BCG and DPT immunizations for children and length of breast-feeding period.

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<sup>a</sup>Projects were carried out simultaneously in Indonesia, Turkey, Nigeria and Bohol, the Philippines.

<sup>b</sup>For a description of the original design, see Howard C. Taylor, Jr., and Bernard Berelson, "Comprehensive Family Planning based on maternal/child health services: A feasibility study for a world programme", Studies in Family Planning 2, No. 2 (February 1971): 21-54.



A decrease was found in the number of late initial prenatal consultations, consultations with hilots alone, deliveries by untrained hilots, use of unsterile bamboo for cord cutting. Family planning knowledge attitudes and practices improved amongst husbands as well as wives, although the use of pills declined. Evidence of a demographic impact was inconclusive. Research also provided insights on socio-anthropological aspects of MCH and FP.

The project has demonstrated how an integrated MCH/FP project can be set up and evaluated in a developing rural area with midwives as the major providers of service.

Many publications have been produced and the research findings have been distributed to national policy makers and various agencies.

The project was financed by the UNFPA and the Philippines Ministry of Health, technical assistance was provided by the Population Council and the WHO.

PROJET BASE SUR LA SANTE MATERNELLE ET INFANTILE/  
PLANIFICATION DE LA FAMILLE A BOHOL, PHILIPPINES

A. Mangay-Angara

RESUME

Le projet basé sur la SMI/PF à Bohol était un des quatre projets à l'échelle du pays, et bénéficiant d'une aide internationale<sup>a</sup>. Il était basé sur la méthode Taylor-Berelson pour les programmes SMI/PF dans les pays en voie de développement<sup>b</sup>.

Les objectifs de ce projet étaient :

- 1) de parvenir à une meilleure qualité des soins de SMI ;
- 2) d'améliorer les services de planification familiale "dans le cadre d'un programme de SMI en développement au sein des services de santé en général" ;
- 3) d'améliorer la formation et la surveillance du personnel de santé SMI/PF ;
- 4) de mettre sur pied des études contribuant à l'amélioration de la santé des mères et des enfants et promouvoir la planification familiale.

Les activités du programme ont touché la moitié de l'île et une population de 425.000 habitants, l'autre moitié étant plus ou moins prise comme témoin.

Les études ont débuté entre 1974 et 1979 avec le personnel permanent, en collaboration avec du personnel recruté spécialement pour la recherche. Ces études sont divisées en six groupes : collecte des données de base, études socio-anthropologiques, pré-enquêtes et post-enquêtes traitant de la connaissance de la planification familiale, attitudes et pratiques, état de santé, etc., estimation de l'accroissement de la population, amélioration des services de statistiques, études spécialement orientées vers les besoins du projet.

Aux améliorations des services généraux de santé dues aux études, il faut ajouter le développement des équipements sanitaires et l'augmentation du personnel, l'amélioration des services de transport aux centres de soins primaires, l'ouverture de pharmacies dans les villages et une plus grande participation de la communauté dans les activités concernant la santé.

L'amélioration a été particulièrement sensible dans la qualité des services apportés aux femmes enceintes et aux enfants. Environ 99 % des cas prioritaires de SMI furent identifiés. Il y a eu augmentation du nombre des consultations des femmes enceintes, des consultations avec les sage-femmes, des accouchements par des accoucheuses traditionnelles et des sage-femmes ayant une formation, des services de soins postnatals, des administrations de sérum antitétanique aux femmes avant la naissance, des consultations pour les enfants de 1 à 4 ans, des vaccinations des enfants par le BCG et DPT et de la durée de la période d'allaitement.

<sup>a</sup> Les projets furent mis en place simultanément en Indonésie, Turquie, Nigéria et Philippines (Bohol).

<sup>b</sup> Pour une description du projet d'étude original, cf. : Howard C. Taylor Jr. et Bernard Berelson : Comprehensive Family Planning based on maternal/child health services : A feasibility study for a world programme, Studies in Family Planning 2, No 2, février 1971, pp. 21-54.



Cet examen systématique a entraîné une diminution du nombre des premières consultations prénatales tardives, des consultations avec uniquement des accoucheurs traditionnels, des accouchements par des accoucheuses traditionnelles sans formation et de l'utilisation de bambous non-stérilisés pour couper le cordon ombilical. Les attitudes et les pratiques concernant le planning familial ont évolué parmi les maris et les épouses, bien que l'emploi de pilules contraceptives ait diminué. L'évidence d'un impact démographique n'a pas été démontrée. La recherche a également permis d'approfondir les aspects socio-anthropologiques de la SMI et de la planification familiale.

Le projet a démontré comment une étude conjointe SMI/PF peut être développée et évaluée dans une zone rurale avec un personnel d'exécution composé majoritairement de sage-femmes. Plusieurs publications ont paru et les résultats de la recherche ont été mis à la disposition des décideurs et des différentes agences concernées.

Le projet fut financé par l'UNRWA et le Ministère de la Santé des Philippines. L'assistance technique fut fournie par le Population Committee et l'OMS.

SWEDEN'S HEALTH SCREENING PROGRAMME FOR FOUR-YEAR-OLD CHILDREN:  
ARE THERE ANY BENEFITS?

Tore Mellbin, Claes Sundelin and Jean-Claude Vuille

SUMMARY

Countrywide general health screening of Swedish four-year-olds began in 1968 on the recommendation of the National Board of Health and Welfare. Its ultimate goal was to bring about an improvement in the health of children by early detection and treatment of physical, psychological and social health problems.

The health screening of four-year-olds takes up considerable resources in the form of physicians' and nurses' time and parents' absence from work. The direct costs of the screening examinations can be estimated at about US\$50 per child. Approximately one-third of the children are referred to specialists for diagnostic examinations and, if necessary, treatment.

This study was undertaken to analyse the effects of the screening programme on the health of the children in the long run, i.e., in this case after six years, when they are about 10 years old. At that age Swedish children have been at school for three years and are well known to their class teachers, and any health problems are documented by the school health service. It was the aim of the study to investigate the state of health of a cohort of 10-year-olds not only within a medical frame of reference but also in terms of their social adaptation in a broad sense. The basis chosen for the study was the children's adjustment to school, i.e., to a social situation in which the child encounters the demands of society in a comparatively standardized way. The investigation was made possible by the relatively thorough analysis of data and appraisal of the screening efficiency that were undertaken at the beginning of the 1970s.

Like most health screening programmes, the screening of four-year-olds was not at first designed as a controlled trial. It was progressively expanded and the different health districts joined in at different times, depending *inter alia* upon the time available to the staff and their interest in the scheme. The conditions for an evaluation were therefore not ideal. By means of a special investigative design, however, whereby a control group was selected first and the experimental group afterwards, by a matching procedure, a quasi-experimental situation was created. The comparison between the quasi-experimental group and the control group is based on data collected at interviews with class teachers and school nurses. The results showed that for practically all health variables there was no notable difference between the two groups. By a more extensive continuing analysis it is hoped to determine, at least partly, the reasons for this disappointing result. This further investigation should include as its principal component a detailed analysis of the predictive value of the results of the screening examinations of four-year-olds and a study of the extent to which social and demographic factors influence health development between the ages of four and ten years.



## PROGRAMME SUEDOIS D'EXAMEN SYSTEMATIQUE DES ENFANTS DE QUATRE ANS : QUEL EN EST LE BENEFICE ?

C. Sundelin, T. Mellbin, J.C. Vuille

RESUME

A partir de 1968, un examen systématique de santé à l'échelle nationale de tous les enfants suédois âgés de 4 ans a été réalisé sur la recommandation du Bureau national de la Santé et des Affaires sociales. But final du programme : apporter une amélioration de l'état de santé des enfants par le biais de la détection précoce et du traitement des problèmes physiques, psychologiques et sociaux.

Le coût de cet examen fut considérable en médecins, infirmiers, temps et absentéisme des parents de leur travail. Les coûts directs peuvent être estimés à environ 50 dollars par enfant. Environ 1/3 des enfants a été dirigé vers des spécialistes pour diagnostic et traitement éventuel.

L'étude a été entreprise dans le but d'analyser les effets de l'examen général systématique sur la santé des enfants à longue échéance, c'est-à-dire, dans le cas présent, 6 ans après, lorsque les enfants avaient atteint l'âge de 10 ans. A cet âge, les enfants suédois avaient fréquenté l'école pendant 3 ans. Leurs professeurs les avaient bien connus et tous les problèmes de santé avaient été notés par le service médical de l'école.

L'objectif de l'étude était d'enquêter sur l'état de santé d'une cohorte d'enfants de 10 ans, pas seulement sous l'aspect médical, mais également sous l'angle de leur adaptation sociale au sens large. La base retenue était l'adaptation des enfants à l'école, c'est-à-dire leur réaction face à une obligation sociale à peu près identique pour tous.

Réalisée au début des années 70, l'enquête fut possible grâce à la minutie apportée à l'analyse des données et à l'efficacité de l'examen systématique.

Comme la plupart des programmes d'examens systématiques de santé, celui des enfants de 4 ans n'a pas été conduit comme une expérience contrôlée. Il s'est progressivement développé et les différents services de santé des districts se sont joints au programme à des périodes différentes, selon le temps et l'intérêt du personnel consacré à cette tâche. Les conditions d'évaluation n'étaient par conséquent pas idéales. Cependant, grâce à l'élaboration d'une enquête par laquelle un groupe-témoin fut d'abord sélectionné, puis, par une procédure d'appariement, un groupe expérimental déterminé, une situation quasi-expérimentale fut ainsi créée. La comparaison entre le groupe quasi-expérimental et le groupe-témoin est basée sur les données recueillies pendant les entrevues avec les professeurs et les infirmières scolaires. Les résultats montrent que, pratiquement pour tous les variables de santé, on ne constate pas de différence notable entre les 2 groupes. Nous espérons déterminer, au moins partiellement, les raisons de ce résultat décevant grâce à l'analyse en cours, qui est plus complète. Cette enquête ultérieure devra inclure, comme composant principal, une analyse détaillée de la valeur supposée des résultats des examens systématiques des enfants de 4 ans, et une étude de l'influence des facteurs sociaux et démographiques, sur le développement de la santé des enfants de 4 à 10 ans.

EVALUATION OF THE MASS IMPLEMENTATION OF ORAL REHYDRATION  
IN DIARRHOEAL DISEASES OF EARLY CHILDHOOD IN THE GAZA STRIP

A.H. Guinena

SUMMARY

Diarrhoeal disease in the Gaza strip is a serious public health problem. In 1978 it was responsible for over one in three infant deaths and nearly one in two post-neonatal deaths, and in the second year of life over one in four deaths were due to diarrhoea. It was the most important cause of hospitalization.

Following WHO recommendations both the Government Public Health Department and the United Nations Relief and Works Agency (UNRWA) agreed to conduct an oral rehydration study among all children aged 1-35 months in the Gaza strip. A protocol was designed jointly by WHO, the local health authorities and UNRWA to carry out the study in a uniform manner in all the health centres so as to furnish maximum benefit and to evaluate the impact of the study on diarrhoea-related mortality, hospital admission and diarrhoea-related malnutrition. The study proper covers two years (1980-1981).

This paper describes the study, emphasizing community and family participation, improvement in the standard of services and reporting systems, and reduction in costs.



EVALUATION DE LA MISE EN OEUVRE MASSIVE DE LA REHYDRATATION ORALE DANS LE TRAITEMENT  
DES MALADIES DIARRHEIQUES DE LA PETITE ENFANCE DANS LA PROVINCE DE GAZA

A. H. Guinena

RESUME

Les maladies diarrhéiques dans la Province de Gaza représentent un sérieux problème de santé publique. En 1978, dans cette même province, ces maladies causèrent 36 % des décès d'enfants de moins d'un an et 27 % de ceux du groupe d'âge 12-23 mois. Elles sont en tête de la liste des causes d'hospitalisation des enfants, particulièrement en été.

Sur les recommandations de l'OMS, le Département de Santé publique du Gouvernement et l'UNRWA (Office de Secours et de Travaux des Nations Unies pour les Réfugiés de Palestine dans le Proche-Orient) ont accepté de mettre sur pied, de 1977 à 1981, une étude portant sur 48,000 enfants de moins de 3 ans, avec les objectifs suivants :

1. Développer un projet pour l'application de la thérapeutique de réhydratation orale (ORS) afin de traiter, d'une manière standard, tous les cas de diarrhée aiguë chez les enfants âgés de 1 à 35 mois dans les Centres de SMI du Gouvernement et les Centres de Santé de l'UNRWA de la zone de Gaza ;
2. Etablir une procédure pour assurer l'évaluation correcte de l'impact de l'utilisation systématique de la thérapeutique de réhydratation pour tous les cas de diarrhée.

L'utilisation de la thérapeutique ORS recommandée par l'OMS a été introduite en 1978. Les admissions d'enfants atteints de maladies diarrhéiques dans le groupe d'âge de 1 à 35 mois ont diminué respectivement de 17,5 et 41,7 %, en 1978 et 1979. Les données de l'hôpital sur les décès d'enfants montrent une réduction de 33,5 et 52,1 % respectivement pour la période de janvier et juillet 1977. Les taux de cas mortels pour les admissions de diarrhée aiguë à l'hôpital étaient de 92,8 % de janvier à juillet 1977 et sont descendus respectivement à 60 et 44,4 % pendant la même période en 1979 et 1980. Les décès par diarrhée ont constitué 30,2 % du total des décès des moins de 3 ans en 1977. Pour 1979 et 1980, le pourcentage est descendu à 22,9 et à 19,3 %.

Le nombre des injections intraveineuses pratiquées à l'hôpital a diminué, par rapport à 1977, de 19,4 % en 1979.

Il est trop tôt pour tirer des conclusions sur l'impact du traitement ORS. Cependant, les observations préliminaires indiquent des résultats prometteurs.

= = =





July 27, 1982

Dear Mr. Evers:

Thank you very much for your letter. We regret that the Netherlands will not be participating in the Health Services Research project in Sri Lanka.

Yours sincerely,

John R. Evans  
Director  
Population, Health and Nutrition Department

Mr. Theo Evers  
Attache for Health and  
Environmental Protection  
Royal Netherlands Embassy  
4200 Linnean Avenue, N.W.  
Washington, D.C. 20008-3896

cc: Mr. Messenger/Dr. Hamilton

JREvans/rmf

July 20, 1982

Dear Dr. Mahler:

I have been informed by Mr. Theo Evers, Attache for Health and Environmental Affairs at the Royal Netherlands Embassy in Washington that his Government regrets that it will be unable to support the Health Services Research partnership with Sri Lanka. He has assured me that this information will be communicated directly to your office.

This is disappointing after considerable investment of effort at both ends but I do believe there will be other donors who might be interested in working with Sri Lanka. I shall discuss this with Dr. Sterky when he visits next week.

Sincerely,

John R. Evans  
Director  
Population, Health and Nutrition Department

Dr. Halfdan Mahler  
Director General  
World Health Organization  
1211 Geneva 27  
Switzerland

cc: Mr. North/Mr. Messenger/Dr. Hamilton

JREvans/rmf



✓ FILE HSR

(47)

AMBASSADE VAN HET KONINKRIJK DER NEDERLANDEN

ROYAL NETHERLANDS  
EMBASSY

4200 Linnean Avenue, N.W.  
Washington, D.C. 20008-3896

No. 10306  
VMA/av/503/40

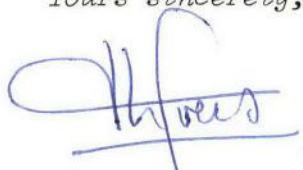
July 20, 1982

Dear Dr. Evans:

On behalf of the Netherlands Ministry of Development Cooperation,  
I herewith inform you that the Netherlands will not participate  
in the WHO project: Health Services Research Sri Lanka.

Following our telephone discussion last July 19, I also can  
inform you that WHO Geneva has already been informed on this  
decision by the Netherlands Permanent Representative.

Yours sincerely,



Theo Evers  
Attaché for Health and  
Environmental Protection

Dr. John R. Evans  
Population, Health and Nutrition Division  
WORLD BANK  
1818 'H' Street, N.W.  
Washington, D.C.

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УПРАВЛЕНИЕ АУИ НЕС КОММУНИКАЦИОНОВ И ИНФОРМАЦИИ

2008



File  
H.S.R.

Carl Taylor

① Tadocena

② Dave Naitie - Lahore  
(U. Maryland)

Indian group -

No involvement

\* | Sty Helms + L. Chen helping  
Rama.

③ Jenna: Mahler  
Review

File HSR. f.wto.

## Kellogg 7dm projects

### Latin America:

- \* - Instituto Unepas Sao Paulo, <sup>hospital</sup> in Sch of Management
- " " " Rio " "
- Cali - Univ. del Valle: Prof Moro
- Bogota - ~~School~~ Univ.

## Australia

Univ. of N.S.W - health management + systems  
Strengthening of nursing program in? Sch of Public Health

South Aust. Inst of Tech. (Adelaide) - NEW  
- first Masters program in health management  
- located in a School of Management

Robert de Vries - now head of health program  
at Kellogg 7dm  
(BDC sparks taking over as head of Kellogg.)



HSR

January 21, 1982

Dear Mr. Terrell:

Thank you for following up on our discussions in December at WHO, Geneva. I am pleased to hear that your team will introduce the topic of Health Services Research into discussions with local health officials during forthcoming visits in Burma and Thailand. I shall look forward to hearing the outcome.

In the Southeast Asian and Western Pacific regions of WHO, health lending by the World Bank is actively underway in Indonesia (Sulawesi) and is planned in India. There are existing population/health projects in India, Bangladesh, Indonesia, Philippines, Malaysia and Thailand. A population project is under development with the Planning Division of the Government of Pakistan. I shall be visiting Thailand in mid-February and hope to have a better idea at that time whether there is an opportunity for further health developments with Bank support and if so, whether the Royal Thai Government would favor health services research development as part of that program of activity. There has been some reluctance on the part of Thailand to borrow for health development since IDA funds were no longer available to them.

The Health Resources Group would be a logical advocate for the development of health services research capability in developing countries and might also facilitate technical assistance through its country consortia. The Health Services Research Subcommittee of the WHO Advisory Committee on Medical Research does not present any problem in this regard since its activity has been completed. The successor, a scientific steering committee on Health Services Research, is intended to be drawn from functioning bilateral partnerships as outlined in the memorandum which I left with you. I certainly agree with your comment that health services research capability is highly relevant to the preparation of country plans to be submitted to the health resources group mechanism. More important, it is a valuable contribution to the design of primary health care delivery systems of high quality and optimal cost effectiveness.

Thank you for your interest in this small but important area.

Sincerely yours,

John R. Evans  
Director

Population, Health and Nutrition Department

Mr. C.E.T. Terrell  
Assistant Secretary  
Program Planning and Review Branch  
Australian Development Assistance Bureau  
P.O. Box 887  
Canberra City 2601  
Australia

cc: Mr. Messenger, Ms. Husain  
JREvans/rmf

*ADAB in Thailand during Basch  
visit in April 1982 and they  
did not think HSR was likely  
area of support.*



file HSR

January 15, 1982

Dear Joe,

How nice to hear from you! Thank you very much for your good wishes for 1982. I presume those good wishes extend to the future of health services research!

For organizational reasons within WHO, there has been no activity to speak of. The Director General seems to have decided that the best way to proceed is to establish bilateral relationships between countries which have technical capability (and preferably some money to offer through their overseas development assistance agency) and developing countries which have an interest in establishing institutional capability for health services research. I have been pushing this idea for some time as one approach and have suggested that the participants in these bilateral partnerships could become part of a future scientific steering committee. The resource base provided by the bilateral agencies would allow the program to move forward at a time when WHO feels that it is not able to devote more of its own resources or raise from external sources the necessary funds for a global program. So far, partnerships have been identified between Sweden and Ethiopia, Denmark and India, Canada and Nepal, Holland and Sri Lanka and some consideration is being given by the United States ~~to~~ the United Kingdom to other developing countries. I wrote to Jim Ingram of ADAB and strongly encouraged the development of a relationship between Australia and one of the Southeast Asian countries. He indicated that Thailand might be a possibility and that this could be followed up at the time of a future mission of Australian development personnel to Thailand. The booklet by Dr. Hassouna was sidelined and Walter Holland from the United Kingdom was commissioned to write a similar document. To the best of my knowledge, this is close to completion but has not been seen by reviewers outside WHO. There have been no further meetings of the Health Services Research Committee.

I believe this is as far as I can go at the present time in filling you in on the missing details. I have had a number of conversations with Dr. Mahler and Dr. Rossi-Espagnet and it is from these sources that my comments are derived.

With kindest personal regards.

Sincerely yours,

John R. Evans  
Director

Population, Health and Nutrition Department

Mr. J.M. Martins  
Director  
Division of Health Services Research  
Health Commission of New South Wales  
Bot



HSR

January 13, 1982

Dear Tom,

What a pleasant surprise to have your letter and the reminder of the delightful occasion at Maastricht last January.

I'm extremely pleased to know that you have been actively promoting health services research and health economics and profoundly impressed by the generosity you and your colleagues have shown in establishing a foundation to finance studies in these fields. That is a splendid accomplishment. I enclose for your information the booklet published by the Rockefeller Foundation based on my brief studies. I hope it may be of interest. I also hope there will be an opportunity to discuss this either in Holland or Canada before too long.

Gay joins me in sending very best wishes and warmest personal regards to you and Constance.

Sincerely yours,

John R. Evans  
Director  
Population, Health and Nutrition Department

Dr. T. Landheer, arts  
Molenweg 10  
7431 BJ Diepenveen  
The Netherlands

Attachment



AUSTRALIAN  
DEVELOPMENT  
ASSISTANCE  
BUREAU

DEPARTMENT OF FOREIGN AFFAIRS

DB



P.O. BOX 887  
CANBERRA CITY, 2601  
Telephone 486644, 619111  
Telegrams AUST DE VAID  
Telex 62631

ACTION OFFICER  
REFERENCE 81/4729

11 JAN 1982

Prof. J.R. Evans,  
Director,  
Population Health & Nutrition  
Department,  
World Bank,  
1818H Street N.W.,  
WASHINGTON DC 20433  
U.S.A.

Dear Prof. Evans,

I was very pleased to meet with you in Geneva during the Extra Budgetary meetings in December 1981 and discuss, among other things, your proposals for health services research.

Since Dr Mitchell's letter of 21 May 1981 and your response of 5 June we have progressed with development of possible PHC initiatives in Burma and Thailand. A preliminary ADAB programming mission visited both countries in October 1981 and we have a project identification team scheduled to visit each country in February 1982.

At this stage neither country has raised the question of health services research but our team will introduce the topic into discussions with local health officials.

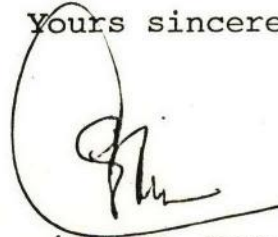
We shall let you know the outcome in due course. In the meantime I would be most grateful for a little more information on the progress of your own plans in this field particularly as they affect Thailand and other countries in the WHO South East Asian and Western Pacific Regions. I would also appreciate your thoughts on the possible way in which the Health Resources Group might be drawn into this field. I appreciate the principal point of activity for health services research is presently the HSR Sub committee of the WHO Advisory Committee on Medical Research. However, it appears to me that the role of the HRG and its potency as a coordinating force would be enhanced if it were more involved with health services research. This may help it give significant priority to the quality and cost effectiveness aspects of designing adequate primary health care delivery systems.



In fact I am not at all clear why this aspect did not receive more prominence in the Country Resource Utilization Reviews we looked at in the last HRG meeting.

I look forward to meeting you again and in the meantime would be grateful for your response to these points.

Yours sincerely,

A handwritten signature in black ink, appearing to be 'C.E.T. Terrell', enclosed within a large, hand-drawn oval.

(C.E.T. Terrell)  
Assistant Secretary  
Program Planning and Review Branch



# Health Commission of New South Wales

• Professor J. Evans,  
Director,  
Population, Health and  
Nutrition Department,  
World Bank,  
1818 H Street N.W.,  
• Washington DC 20433, U.S.A.

• McKell Building  
Rawson Place, Sydney

Address reply to: Secretary  
Box K110 P.O. Haymarket N.S.W. 2000

Telegraphic Address:  
Healthcomm', Sydney

• Our reference: JMM:SG

Your reference:

Phone: 217 6666—Extension: 5900  
(Mr. J.M. Martins)

31 December 1981

Dear John,

This is being written on the last day of 1981, may I wish you a happy New Year for 1982. On this last day of the year, I have been tidying up some papers. The papers from the Addis Ababa meeting required some resolution: are they to be thrown away as another effort that did not quite make it? or should they be kept, because there is some follow up action?

I have not heard from WHO in Geneva, or anyone else regarding the outcome of our meeting. It is possible that the Organisation resolved that our recommendations for action were not acceptable, or that some follow-up has taken place but no news of it has reached Sydney. In any case, I would appreciate any information you might have on the matter. I will keep the papers for the time being.

Sincerely,

J.M. MARTINS,  
Director,  
Division of Health Services Research





# Health Commission of New South Wales


Health Commission  
 Locked Mail Bag 961  
 North Sydney, New South Wales 1585  
 Telephone: (02) 958 9611  
 Facsimile: (02) 958 9612

Attention: Mr. [Name]  
 [Address]  
 [City]

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Dr T. Landheer, arts

Molenweg 10  
7431 BJ Diepenveen  
Tel. 05709-1448



Diepenveen, 19 december 1981.

Dr. John Evans,  
TORONTO.-

Dear John,

Your honorary doctor degree at Maastricht University in Januari 1981 was quite an occasion.

I took the opportunity afterwards to highlight the importance of "health services research" and "health economics" and wrote an article, which was published recently. (copy enclosed).

Why did I do this?

Contrary to North America, both these sciences are not frequently practised here in the Netherlands. I don't know if you are aware of this fact. Therefore first of all I wanted to draw the attention of the readers of Medisch Contact, the magasin of the Netherlands medical association to these subjects.

Secondly, as there is not much interest shown, it is hard to find resources to finance studies.

In collaboration with 7 other European countries, a hospital in the Netherlands is taking part in the "European Collaborative Hospital Study", part of "What value for what money", under the supervision of the London School of Hygiene and Tropical Medicine. I am a honorary visiting research fellow at that School and act as chairman of the meetings of participants.

In asking for financial support for this study I found that no money was available, for this in Holland new field of research. Some ten to twenty foundations were approached here, their answers by and large were "no money available yet, perhaps later".

So in 1980 I founded, with some colleagues a foundation to provide finances for studies in the field of Health Services Research. Some financial support came from the Toto a.o.

I included some of professor Greep's sentences on your work in my article which was written to let people know that there is a foundation to support them if they want to be engaged in research in this field.

I think you will be interested to know that this is one of the results of your presence here.



It is a pity that we had no opportunity to discuss the future of "health services research" and the teaching of public health in a School of Public Health in the Netherlands.

Constance and I are planning to <sup>be</sup> in Canada in October or November of next year.

Are you by any chance in Toronto during these month, so that I could meet you for a brief conversation?

*Or if you by any chance may be in Europe he could meet. Perfect would be if he could meet in Amsterdam. The Hague or at our home, a very restful place in busy free Europe.*

*Constance adds her warmest greetings for Christmas and 1902!*

*Tans.*





# Gezondheidszorgonderzoek

Het gezondheidszorgonderzoek – onderzoek dat erop is gericht inzicht te bieden in de efficiency en de effectiviteit van het gezondheidszorgsysteem – mag zich verheugen in een toenemende belangstelling. De onlangs opgerichte Stichting tot bevordering van het Gezondheidszorgonderzoek wil geïnteresseerden de weg wijzen naar fondsen die wellicht bereid zouden kunnen blijken te zijn dergelijk onderzoek te subsidiëren. Stichtingssecretaris Dr. T. Landheer zet doel en streven van de stichting uiteen.

Gezondheidszorgonderzoek is de Nederlandse term voor activiteiten die elders worden aangeduid met 'operational research', 'operations research', 'health practice research', 'health services research', 'health care investigation', 'planning and evaluation of health care', etc. Het aantal definities van gezondheidszorgonderzoek is groot. Het lijkt alsof iedere auteur zijn eigen definitie hanteert. Ik wil graag de meer algemene definitie van 'operational research' van Watson-Watt (de onderzoeker die aan het begin van WO II radar vervolmaakte) volgen; deze luidt: 'investigation by scientific method on actual operations – current, recent or impending – and explicitly directed to the better, more effective and more economical conduct of similar operations in the future'. Men kan in de praktijk onder gezondheidszorgonderzoek verstaan: het onderzoek dat zich bezighoudt met de planning, de organisatie, de personeelsvoorziening, de financiering, het management, de uitvoering, alsmede het instandhouden en het gebruik van voorzieningen op het gebied van de gezondheidszorg; onder dit onderzoek is mede begrepen de evaluatie en analyse van de efficiency, effectiviteit en doeltreffendheid van het gezondheidszorgsysteem.

Het terrein van gezondheidszorgonderzoek werd beter verkend toen de kosten van de gezondheidszorg, zoals men zegt, de pan dreigden uit te rijzen. Veldkamp, minister van Sociale Zaken en Volksgezondheid, probeerde door het samenstellen van de zogeheten Volksgezondheidsnota van 1966 organisatie en structuur

duidelijker te maken. Door de opsomming van organisaties, instituten, enz. en de vele manieren van financieren werd wel duidelijk dat meer inzicht in het hoe, waarom, wanneer en met wie zijn geld, voor ons land nodig was.

## Het belang van gezondheidszorgonderzoek

In de gezondheidszorg worden veel gegevens verzameld zonder dat er iets mee gebeurt. Dit zal voor een deel te wijten zijn aan het feit dat sommige gegevens achteraf niet bruikbaar blijken.

Een andere oorzaak kan zijn het ontbreken van een persoon die de verzamelde gegevens kan verwerken en weet samen te vatten in een leesbaar, beleidsgericht rapport.

In beide gevallen kan men geen gebruik maken van gezondheidszorgonderzoek als beleidsinstrument. Gezondheidszorgonderzoek kan een belangrijk hulpmiddel zijn bij het bevorderen van de efficiency en effectiviteit van de gezondheidszorg en bij planning en beheer, want '... its broad purpose is to produce knowledge that will contribute to the improvement of the delivery of health care'. Van verschillende zijden wordt die gedachte gesteund, zoals door de staatssecretaris van Sociale Zaken en Volksgezondheid in 1970: 'Voor het bevorderen van een meer rationele benadering van de volksgezondheidsproblematiek verdient het, naar mijn mening, aanbeveling de ontwikkeling en toepassing van technieken op het gebied van operationele research en planning te bevorderen...' (VoMil, 1974, p. 1). De Centrale Raad voor de Volksgezondheid concludeert in 1979, '... dat de stijgende kosten van de gezondheidszorg in de komende jaren in Nederland tot een nog verder toenemende druk van de collectieve lasten op onze samenleving zullen leiden. Dit gegeven legt op de gezondheidszorg de morele verplichting de ter beschikking staande voorzieningen, niet alleen uit oogpunt van zorgverlening doch ook in economisch opzicht, zo zorgvuldig en efficiënt mogelijk te gebruiken. Zo wordt in de memorie van toelichting op de begroting 1979 van het departement van Volksgezondheid en Milieuhygiëne de nadruk gelegd op beleidsgericht onderzoek op het gebied van de volksgezondheid. Hier-

over wordt gezegd: 'Het onderzoek naar het zorgsysteem is ook een gebied, waarop betrekkelijk weinig onderzoek is verricht. Niettemin is juist dit veld van onderzoek voor het toekomstig beleid eveneens zeer relevant en wel in verband met het voornemen voorwaarden te scheppen voor de totstandkoming van een gezondheidszorgorganisatie die meer samenhang vertoont... Het onderzoek naar het zorgsysteem zal dus prioriteit moeten krijgen. Dit omvat naast economisch onderzoek, ook organisatorisch en sociaal-medisch onderzoek' (VoMil, 1978, p. 63-64).

## Toenemende belangstelling

De Rijksuniversiteit Limburg bestond kortgeleden vijf jaar. De jonge universiteit verleende bij die gelegenheid vier eredoctoraten; daarvan één op het gebied van 'health economics' en één voor 'health services research – twee disciplines die zeer nauw moeten samenwerken. Erepromotor Groot kon de verdiensten beschrijven van de voorman van moderne 'health economics', Brian Abel Smith. Daarnaast ging Greep als erepromotor in op het werk van John Evans, niet alleen vormgever van Mac Masters University in Canada maar ook op het gebied van 'health services research' een vooraanstaand man. Greep zei onder meer: 'John Robert Evans is a specialist in internal medicine and cardiology and has been widely recognized as a leading authority on modern education and health services research. In his many publications Evans states his belief that the management of health services is one of the more important modern developments. It includes the assessment of health needs, rational allocation of health resources, and successful implementation of programs. As a response to the growing complexity and run-away escalation of health-care costs in industrialized countries there has been a search for more effective hospital management and administration. Difficulty is experienced by all delivery systems in bridging the gap between the institutions themselves and the community to be served. Doctors have to learn that their clinical decisions have profound implications as regards the use of expensive resources'.

De Association of Schools of Public



Health in the European Region (ASPIHER) begon in 1979 een vergelijkend onderzoek in Europa, 'What value for what money', waarin ons land (Streekziekenhuis Almelo) participeert. Het idee was afkomstig van de eerder genoemde Abel Smith. Om te beginnen werd in acht Europese landen een vergelijkend onderzoek in ziekenhuizen van vergelijkbare grootte ingesteld. De onderzoeken die tot nu toe in het buitenland zijn verricht richtten zich vooral op het gebruik en de 'output' van de ziekenhuizen op basis van opname, ontslag en opnameduur; daarbij werd aangenomen dat de betrokken ziekenhuizen – op zijn minst ziekenhuizen in dezelfde categorie – een zekere overeenkomst zouden tonen. In deze studie, vaak aangeduid als 'European Collaborative Hospital Study', wordt niet van deze premisse uitgegaan. Wel wordt het aantal patiënten en de variatie van ziektebeelden ('case-mix') van de deelnemen-

de landen naast elkaar gezet in de verwachting dat grote verschillen zullen bestaan. Het onderzoek naar die verschillen kan het inzicht in de gezondheidszorgproblemen verruimen en een vergelijking van effectiviteit en efficiency van de onderdelen van de verschillende ziekenhuizen mogelijk maken.

Voor dergelijk onderzoek was bij bestaande fondsen geen geld te krijgen. Teneinde in deze leemte te voorzien werd in december 1980 de Stichting tot Bevordering van het Gezondheidszorgonderzoek opgericht, die nu over enig kapitaal kan beschikken. Het onderzoek 'What value for what money' is het eerste onderzoek dat geld ontvangt van de nieuwe stichting. Het bestuur van de stichting is ervan overtuigd dat op meerdere plaatsen in Nederland over onderzoek op dit gebied wordt gedacht, onderzoek dat onder meer om financiële redenen nog niet is aangevat. ■

Nu blijkt dat gezondheidszorgonderzoek moeilijk in de doelstellingen van bestaande fondsen is in te passen, is het van belang inzicht te krijgen in de behoeften. Heeft u plannen voor onderzoek, wilt u die dan met vermelding van door u relevant geachte gegevens aan het bestuur van de stichting melden? Gezamenlijk kunnen wij dan trachten mogelijkheden te scheppen, zodat onderzoek dat tracht meer inzicht te geven in de efficiency, de effectiviteit en doeltreffendheid van het gecompliceerde en dure gezondheidszorgsysteem van de grond kan komen. Het secretariaat van de Stichting tot Bevordering van het Gezondheidszorgonderzoek is gevestigd: Molenweg 10, 7431 BJ Diepenveen.

## Praktijk perikelen

### Goede oefening

*Op 6 augustus valt een zware bak uit de hijs op de rechterhand van een 46-jarige grondarbeider. Een grote lapwond op de handrug en een strekpeeslesie aan de derde vinger worden chirurgisch behandeld. De bedrijfsarts vindt dat de hand toch wel erg lang dik en pijnlijk blijft en verwijst de man naar de ongevalsverzekeringsgeneeskundige (o.v.g.) van het GAK. Deze chirurg vindt op 10 november zeer pijnlijke verdikkingen in het verloop van MC 2 en 3 en een pijnlijke verende weerstand in MC 4; röntgenfoto's bevestigen de diagnose: met hoekstand en sterke verkorting genezen fracturen van metacarpale 2 en 3, pseudarthrose van metacarpale 4.*

*Met deze foto's wordt de patiënt naar zijn chirurg teruggestuurd; in een brief wordt gevraagd te overwegen de man door te zenden naar een academisch ziekenhuis in de buurt waar een handchirurgisch team werkt. De chirurg schrijft op 29 november contact te zullen opnemen met de orthopaed over de chirurgische mogelijkheden in het eigen ziekenhuis: 'Behandeling op universitair niveau lijkt vooralsnog niet noodzakelijk'. Eind januari vertelt patiënt dat er sprake is van operatie en dat hij nu wordt gemasseerd. Hij zal 24 februari voor het eerst naar de orthopaed gaan en dan 11 maart weer terug naar de chirurg. Op 15 maart ziet de o.v.g. de patiënt, die het eindoordeel meedeelt: 'Er zal niets aan te doen zijn'. De handfunctie blijkt inmiddels sterk achteruitgegaan. De handpalm is zeer drukpijnlijk zowel op de callusknobbels als ter plaatse van de pseudarthrose. Voor het werken met een schop is deze man volkomen ongeschikt. Onmiddellijk contact met de behandelend chirurg levert, eind maart, twee brieven op. De orthopaed schrijft dat het werken met een schop voor de man een goede oefening zal zijn: 'Het is echter gebleken dat de man niet werkwilleg is. Opereren van deze hand heeft daarom geen zin, het zal patiënt eerder versterken in zijn ziekte idee'. De chirurg schrijft na hernieuwd contact met de patiënt deze mening te delen. Het advies is werkhervatting.*

*Zo zal de o.v.g. moeten proberen deze man via zijn huisarts toch naar een handchirurgisch team verwezen te krijgen. Nu inmiddels negen maanden verloren zijn gegaan is het arbeidsperspectief voor deze nu 47-jarige buitenwerker wel somber geworden!*

Korte door artsen geschreven signalen. Nieuwe perikelen worden gaarne ingewacht door de redactie van Medisch Contact.



File: HSR Sub.  
With ACHUR

I am aware of and personally pleased at the interest and commitment of Sri Lanka to the goal and strategy of health for all by the year 2000 through the provision of primary health care to all its citizens. To facilitate the task of countries, WHO has for sometime been promoting the concepts and practice of health services research as one of the main tools contributing to the formulation of health policies and the translation of these policies into action.

To support national efforts in the development of manpower and institutional capabilities for health services research as part of an integrated health management process, a recent meeting in Copenhagen between bilateral funding agencies and WHO proposed the establishment of partnerships by mutual agreement between an industrialized and a developing country. Such a partnership would draw on the technical resources of the industrialized country on a sustained basis for 4-5 years and be assisted financially through its bilateral aid agency. The national manpower and institutional capability developed with this support would carry out health services research which is action oriented and addressed to problems of moment~~um~~ to managers and political<sup>city</sup> leaders and would also act as a resource to stimulate and train others.

I know of the collaboration in progress between the Government of Sri Lanka and the Netherlands Development Agency and I propose that WHO and the N.D.A. should send a team of experts to work together with national colleagues in Sri Lanka to identify priority needs for health services research emerging from your effort to implement primary health care. Based on these needs, the necessary programme of research and research-related activities, including resource requirements, could be formulated in detail and WHO and N.D.A. aid based on it. If you are in agreement the team could visit Sri Lanka early next year.



The programme of health services research should be closely related to the promotion of National Health Development Networks being advocated by WHO as the mechanism by which available national institutions, including those engaged in research and development, are mobilized, involved and strengthened to serve a common health goal. It could also be linked to the effort of the UNICEF/WHO Joint Committee on Health Policy on "Support to Governments for the Implementation of Primary Health Care" which is under consideration.

If these suggestions are agreeable to you I should be grateful if you would indicate a suitable date for the team to visit Sri Lanka.

Yours sincerely,

H. Mahler, M.D.  
Director-General

cc SEARO

file WHO / HBR Subcom.

## MEMORANDUM

From Dr John R. Evans

To Dr L. Kaprio  
Regional Director, EURO

Date 10 December 1981

Our ref.

Attention

Your ref.

Originator

Subject ACMR SUB-COMMITTEE ON HEALTH SERVICES  
RESEARCH IN RELATION TO PRIMARY HEALTH  
CARE FOR THE POPULATION OVER 5 YEARS OLD

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PURPOSE: To identify the principal causes of serious morbidity and chronic disability in children over 5 years and adults in developing countries and to identify those interventions to prevent or control these disorders which are appropriate to the financial, institutional and managerial circumstances of these countries.

To propose to ACMR in 1982:

- (1) health services research activities designed to study means for giving greater emphasis in primary health care services of these countries to health problems of high priority for which cost-effective, appropriate technology now exists.
- (2) research to develop appropriate technologies for the priority health problems for which technologies are not now available.

Examples of common serious disorders which might be considered:

- preventable blindness and deafness
- management of burns, fractures and traumatic injury to avoid disability and complications
- environmental and occupational health hazards
- hypertension and cardiovascular disorders
- respiratory diseases and tuberculosis
- skin disorders
- mental and neurological disorders
- aged
- etc.

It is estimated that 15-20% of the adult population in developing countries is isolated from economic activity by severe chronic disability.

There is concern that unless priorities for primary health care are established in terms of the health impact on the population over 5 years of age and feasibility of affordable interventions, the demand for health services will lead to use of available resources for other purposes, and thereby jeopardize the chance of achieving the goals of HFA/2000 for population of all ages.



The composition of the sub-committee would be established in consultation with the Chairman of ACMR and the budget for operation of the sub-committee through the office of the Director-General.

Dr John R. Evans

cc: Dr H. Mahler, Director-General  
Dr S. Bergström  
Dr A. Rossi-Espagnet, SHS/HSI

*File HSD*  
✓

Overseas Development Administration

Eland House

Stag Place London SW1E 5DH

Telephone 01-213: 4886  
or Switchboard 01-213: 3000

Dr John R Evans  
Director  
Population, Health & Nutrition Department  
The World Bank  
1818H Street NW  
Washington DC 20433  
USA

23 November 1981

Dear John

Thank you for your letter of 30 July which seems to have come across by sea mail as it didn't arrive here until the end of October.

We have agreed in principle our interest in the health services research initiative, but have not yet taken any definitive decision to identify a developing country with whom we could enter into a possible partnership - although I have identified the institute here that we are likely to use at our end. The reason for our delay is that we are awaiting clarification on the financial side. I am afraid that this might take a little time yet, but as soon as I have anything definite I will be in touch with you.

With best wishes,

Yours sincerely

Dictated by ..... IAN T FIELD  
but despatched in his  
Health & Population Division  
absence to avoid delay.



RECEIVED  
1981 NOV 30 PM 3:45  
INCOMING MAIL UNIT

UNITED STATES DEPARTMENT OF JUSTICE

FEDERAL BUREAU OF INVESTIGATION

WASHINGTON, D.C. 20535

TO: DIRECTOR, FBI

FROM: SAC, NEW YORK (100-123456)

RE: [Illegible]

[Illegible]

[Illegible]

[Illegible]

Meeting Minutes Nov 21

File HSR

1. Canada / Nepal - Chacall could help.

2. Thailand / Japan

Chacall will help - on their

going to Thailand Feb/82

? When Aestran mission going

Subcommittee

- Steady - funded for "under 5's"

- Kapers to head up "over 5's"



Nov 3/81 (phone call to  
Bryant)

Revised

File: Subcom. HSR.  
LOHO

Blueprint re Stevedore Contract

1. Authority G-S as agent implement  
of Subcom → Reporting to Noble

2. Budget → Noble

3. Name of Subcom  
Bryant + Stevedore → Noble  
decide

4. Ethiopia for Mission / <sup>to prepare</sup>  
Chr. Subcommittee <sub>allied</sub> for signing  
by S. [unclear] / [unclear]  
Ethiopia + LOHO

5. Working <sup>stevedore</sup> Subcommittee to follow up



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<b>Additional Comments</b>		<p>The item(s) identified above has/have been removed in accordance with The World Bank Policy on Access to Information or other disclosure policies of the World Bank Group.</p> <table border="1"><tr><td><b>Withdrawn by</b> Chandra Kumar</td><td><b>Date</b> February 19, 2015</td></tr></table>	<b>Withdrawn by</b> Chandra Kumar	<b>Date</b> February 19, 2015
<b>Withdrawn by</b> Chandra Kumar	<b>Date</b> February 19, 2015			