

Medical Analysis of the Human Loss in Gorkha Earthquake

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ネパールと日本の被災地の方々に心からお見舞い申し上げます
We are with the people affected by the Nepal (Gorkha) Earthquake
and all affected areas in Japan



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<http://aso1592.jp/photos/photo/0928.jpg>

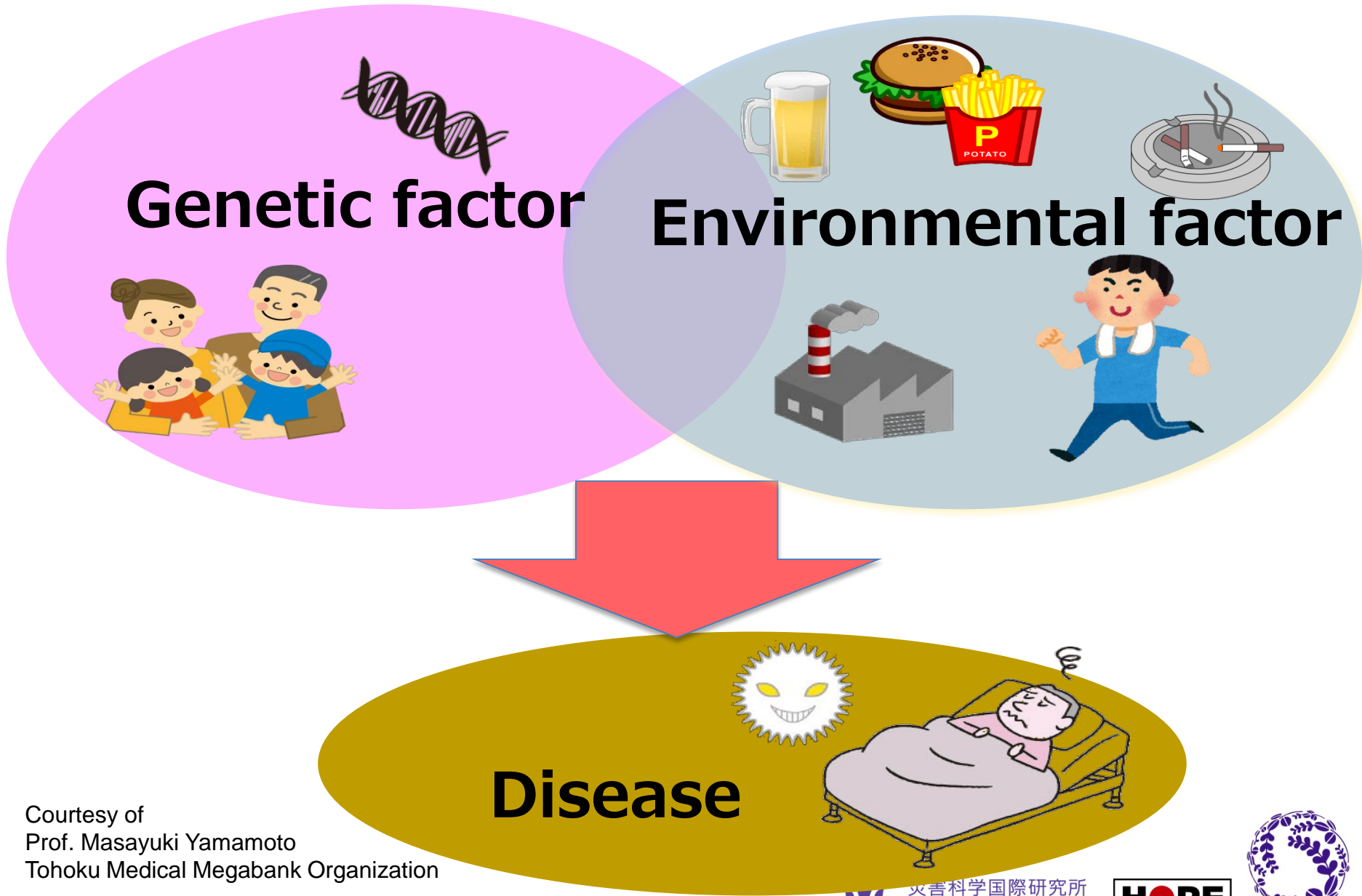


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Concept

Disaster Risk Reduction

Similarity of disease and disaster



Courtesy of
Prof. Masayuki Yamamoto
Tohoku Medical Megabank Organization

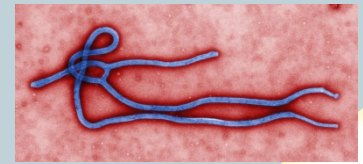
Similarity of disease and disaster



Vulnerability & Capacity



Hazards



Disaster

- Life, Health
- Properties
- Family
- Community





Disaster Risk Reduction

- Know your risk
- Reduce your risk
- Prepared to act

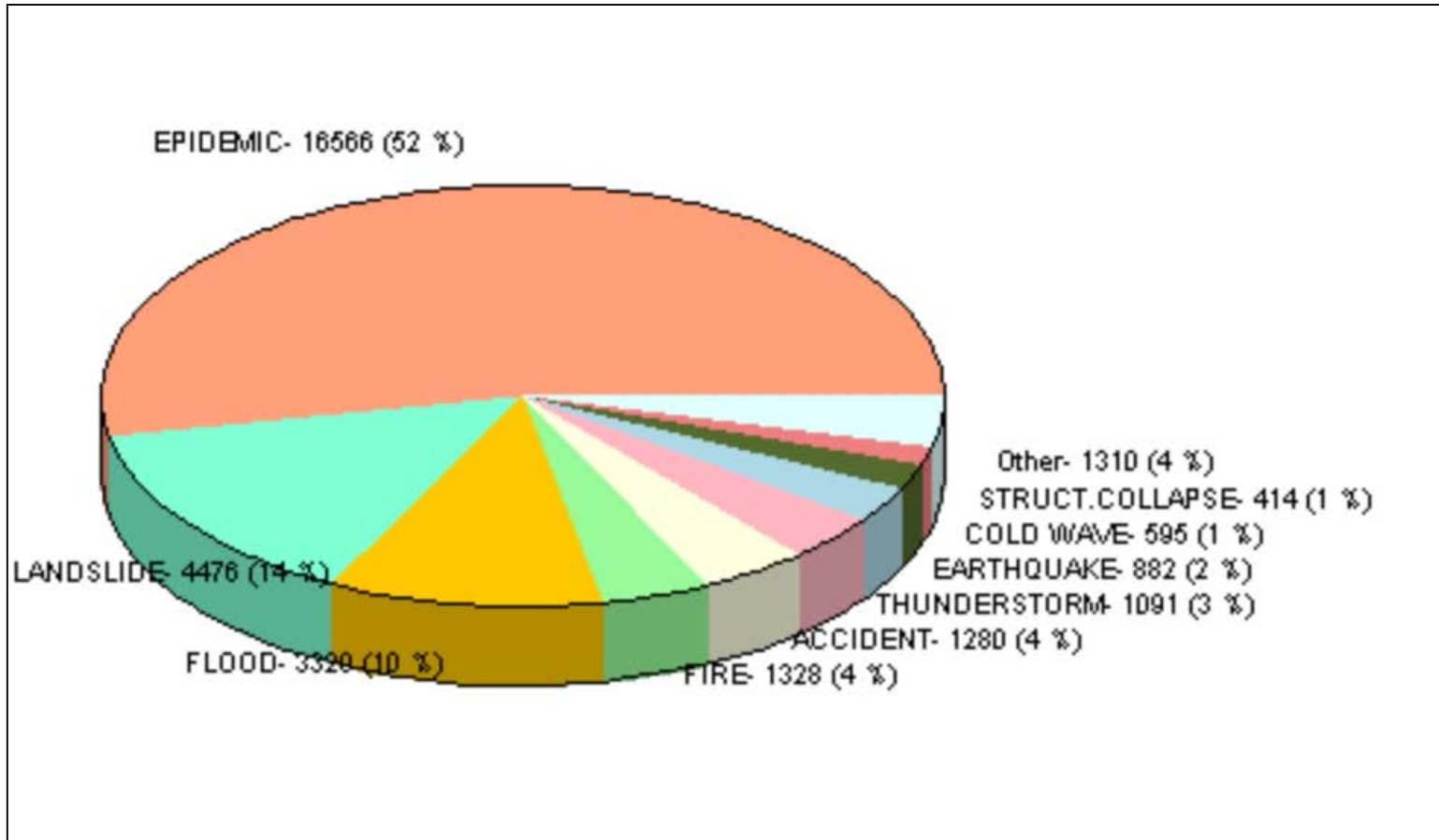
To reduce the disaster risk,

$$\text{Risk} = \frac{\text{Hazard} \times \text{Vulnerability}}{\text{Capacities}}$$

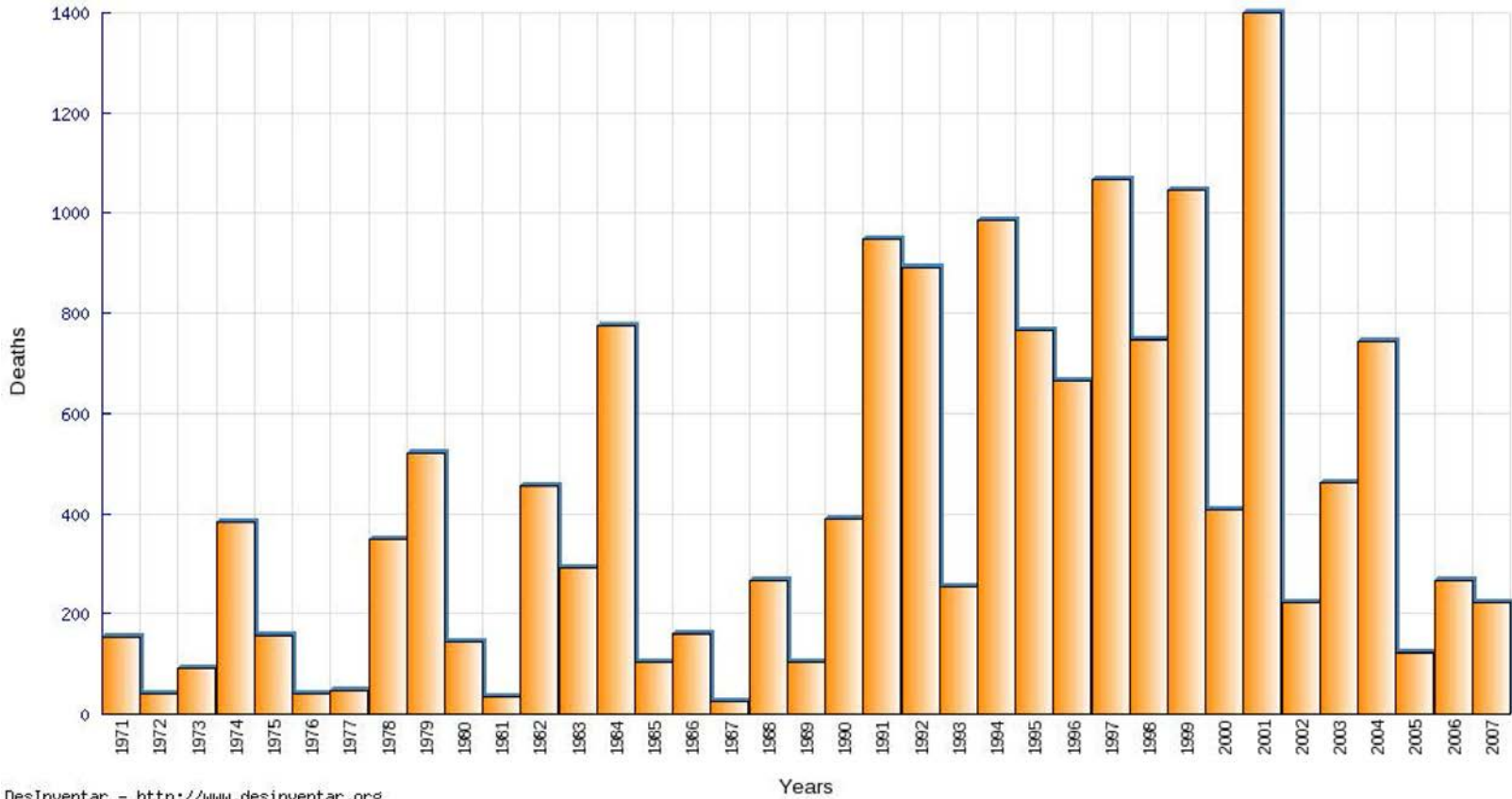
Gorkha Earthquake

Health Indicators and Preparedness in Nepal

Cause of death in disaster

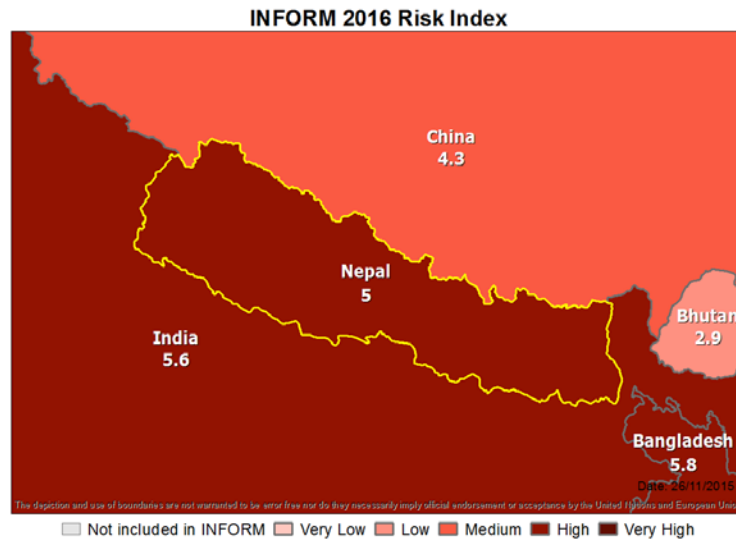


Trend of death by epidemics



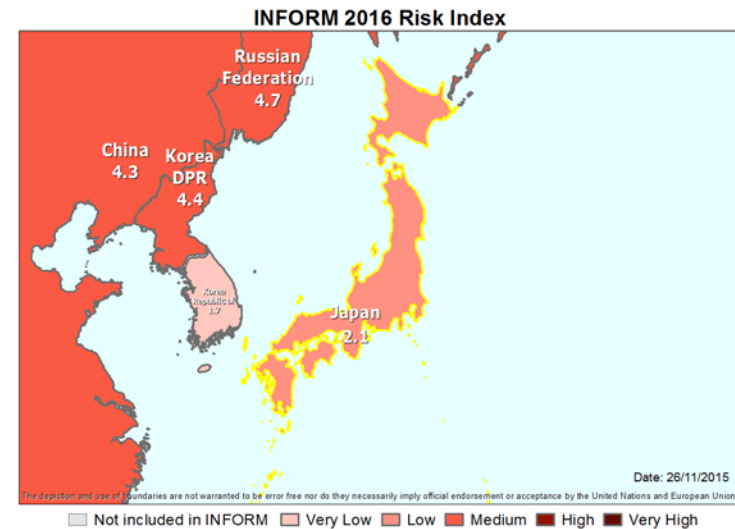
DesInventar - <http://www.desinventar.org>

INFORM risk and resilience assessment



Southern Asia
Low income

	Value	Rank	Trend
INFORM	5.1	31	—
Hazard	4.2	48	—
Vulnerability	5.1	50	—
Coping Capacity	6.1	53	—



Eastern Asia
High income

	Value	Rank	Trend
INFORM	2	154	—
Hazard	6.2	26	—
Vulnerability	0.8	187	—
Coping Capacity	1.6	182	—

INFORM model

Risk	INFORM																
Dimensions	Hazard & Exposure				Vulnerability				Lack of Coping Capacity								
Categories	Natural		Human		Socio-Economic		Vulnerable Groups		Institutional	Infrastructure							
Components	Earthquake	Tsunami	Flood	Tropical cyclone	Drought	Current Conflict Intensity	Projected Conflict Intensity	Development & Deprivation (50%)	Inequality (25%)	Aid Dependency (25%)	Uprooted People	Other Vulnerable Groups	DRR	Governance	Communication	Physical Infrastructure	Access to Health System



Deteriorates health



Health promotion reduces



De Goreve T, Poliansek K, Vernacchini L. JRC Scientific and Policy Reports: Index for Risk Management - INFORM Concept and Methodology Version 2016 ISBN 978-92-79-52741-8

Primary Health Care (PHC)

Declaration of Alma-Ata 1978

International Conference on Primary Health Care

Health, which is a state of complete physical, mental and social wellbeing, and not merely the absence of disease or infirmity, is a fundamental human right.

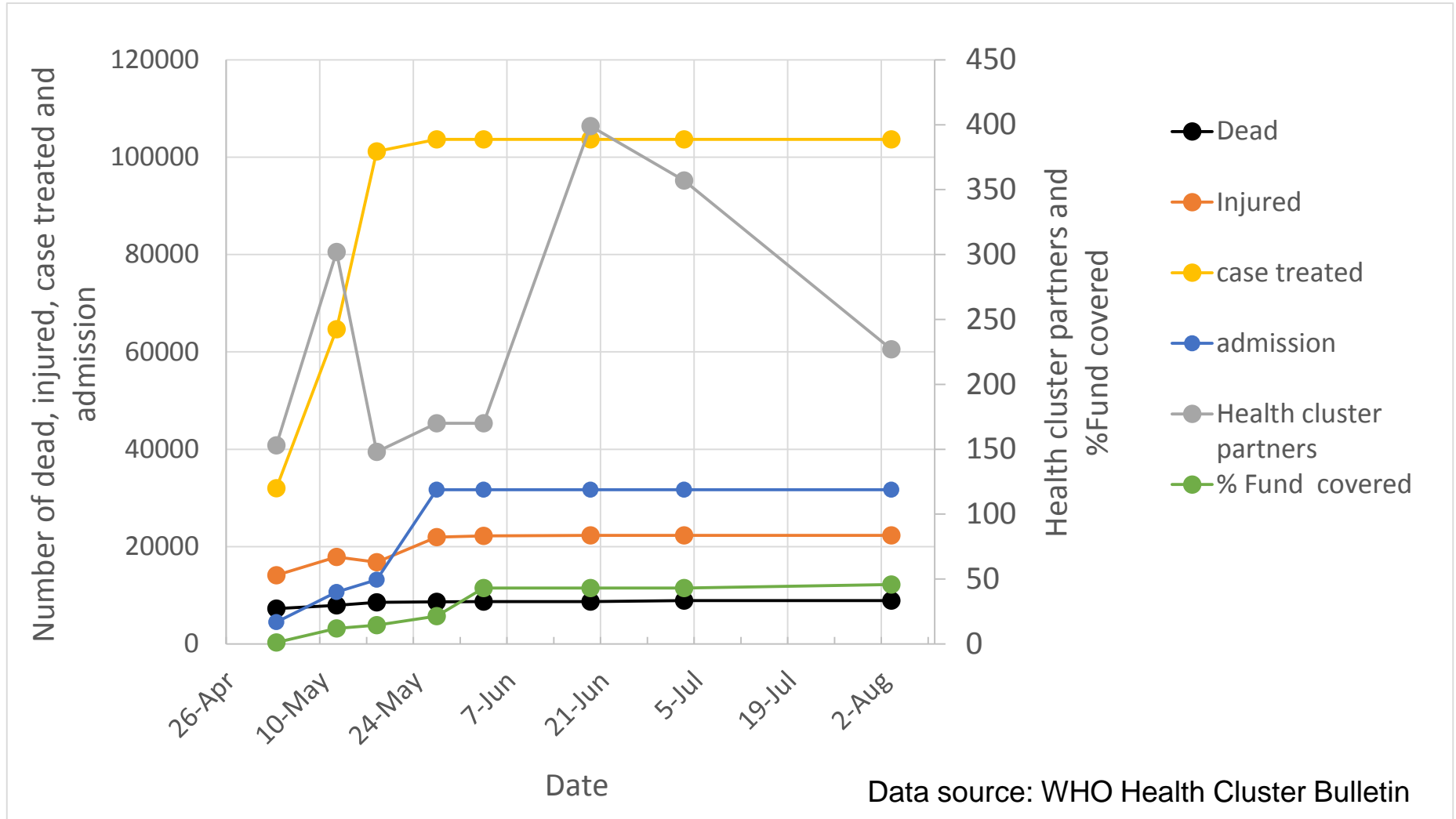
The attainment of the highest possible level of health is a most important world-wide social goal whose realization requires the action of many other social and economic sectors in addition to the health sector.

http://www.who.int/publications/almaata_declaration_en.pdf

Gorkha Earthquake

Medical and public health perspective of health damage

Human damage in Nepal



Good practices and gaps

1. Dignity, autonomy and resilience of people in Nepal

- Constitution: 2015/9/20
- Relief aid through Nepali Government
- Recovery and reconstruction by people in Nepal

2. Preparedness and response in health sector was successful

- HOPE program by Tribhuvan University
- Coordination of Emergency Medical Team by Ministry of Health and Population
- Prevention of infectious disease by hospitals and local governments
- Rapid establishment of sub-clusters
 - Trauma
 - Care for mothers and Children
 - Rehabilitation
- Mental health care for affected people and relief providers

3. Basic health level should be improved

- The biggest cause of death by disaster is Epidemics
- Prevalence of Water sanitation is still low
- Daily power outage
- Rapid urbanization in Kathmandu
- Health insurance coverage

4. Safe hospitals and schools should be increased

- Seismic strengthening in big hospitals are improved
- Insufficient stockpile of emergency water and foods
- Discrepancy between Kathmandu and remote area

HOPE: Hospital Preparedness for Emergencies

- Overview of Disasters
- Disaster Risk Management
- Disaster Epidemiology and Patterns of Injury
- Hazards
- Structural Components
- Non Structural Components
- Functional Collapse of Hospitals
- Pre- Hospital Care
- TRIAGE
- Emergency Department
- Principles of Disaster Medicine
- Hospital Emergency Incident Command System (HEICS)
- Hospital Preparedness Planning
- Techno-Industrial Disasters
- Complex Emergencies
- Mass Casualty Incident
- Mass Gathering Event
- On-Site Medical Care
- Psychosocial Consequences of Disaster
- Inter-agency Coordination
- Hospital Internal Disaster
- Mass Fatality Management
- Disaster Risk Communications
- Resource Management
- Epidemics and Emerging Infections
- Return to Normal Health Operations



Program for Enhancement of Emergency Response (PEER)

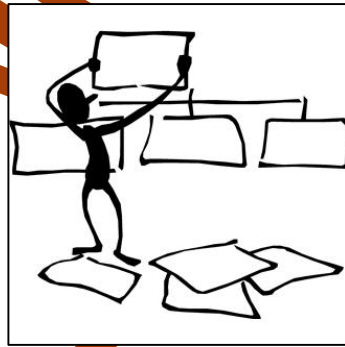
Coordination of Emergency Medical Teams

Affected People

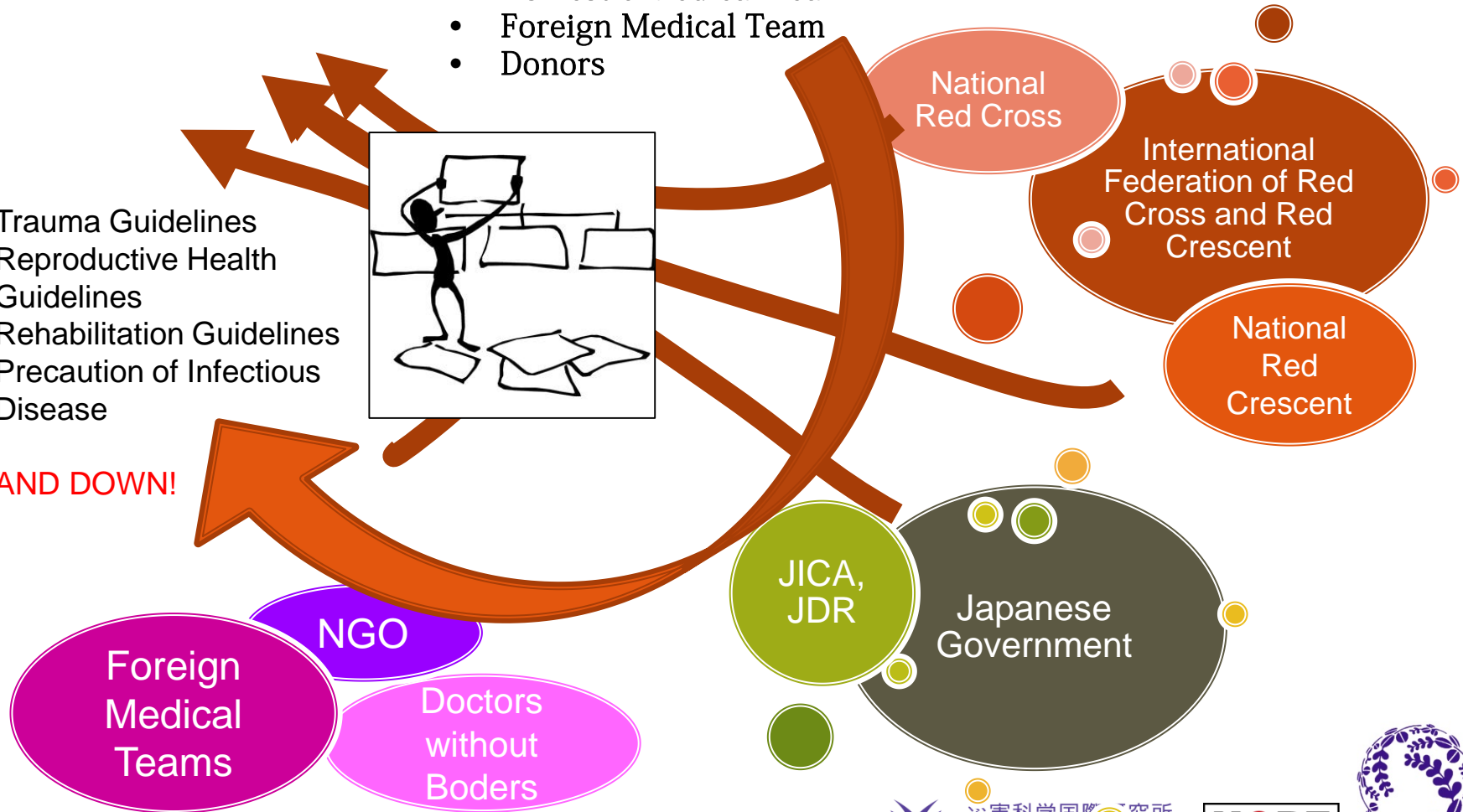
Health Cluster Meetings

- Ministry of Health and Population
- WHO
- Domestic Medical Team
- Foreign Medical Team
- Donors

- Trauma Guidelines
- Reproductive Health Guidelines
- Rehabilitation Guidelines
- Precaution of Infectious Disease

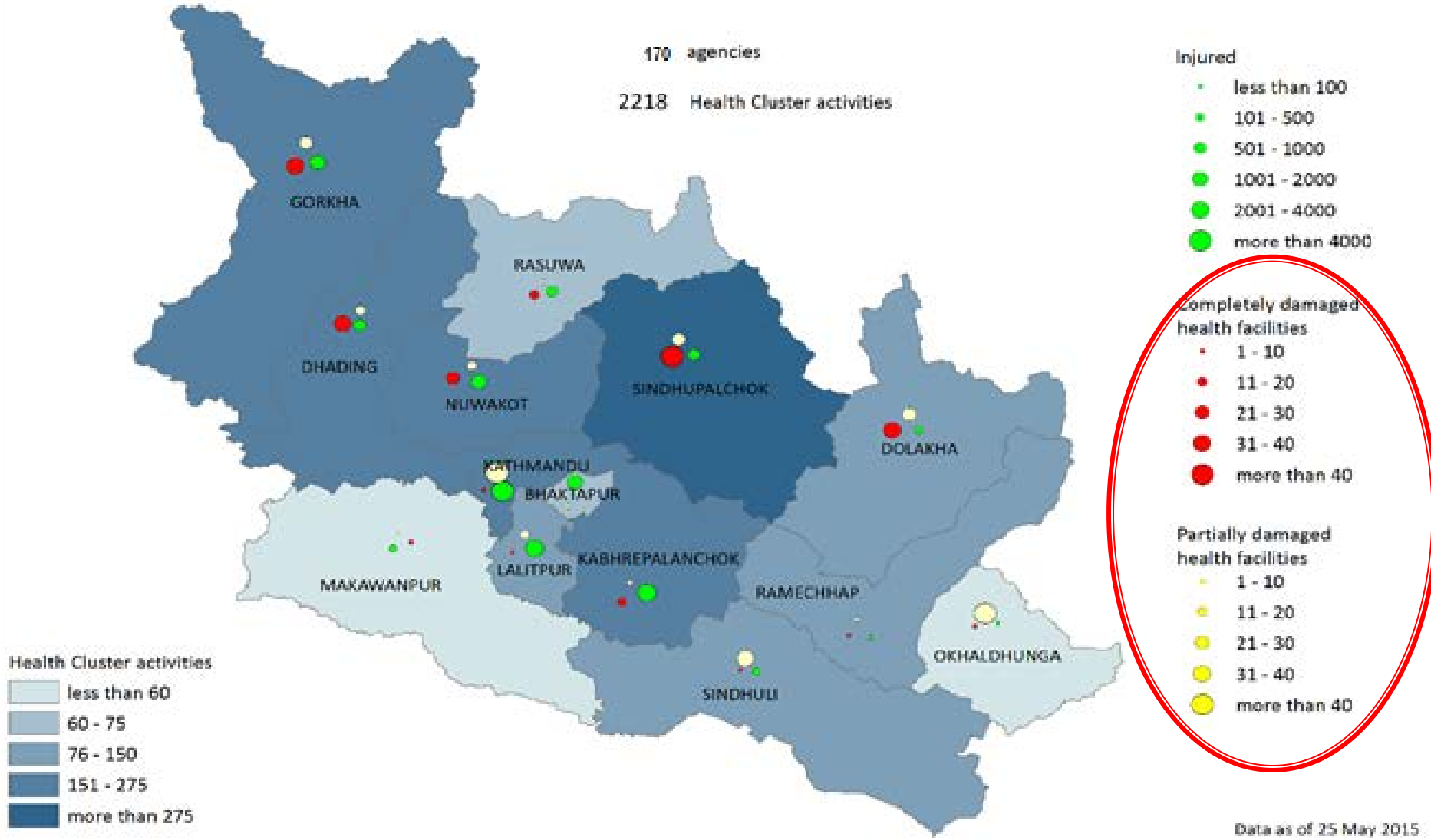


STAND DOWN!




Result of coordination

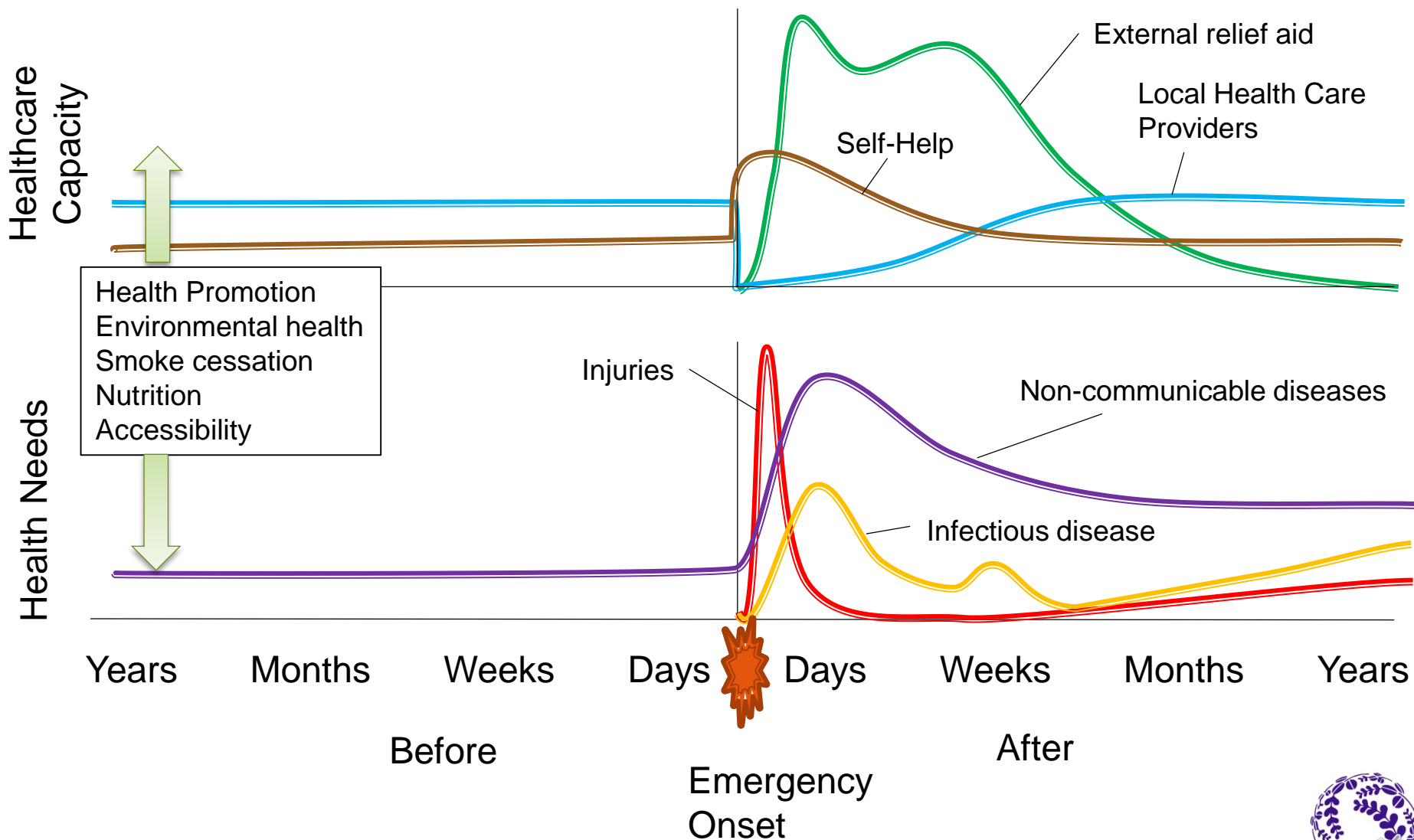
Nepal Earthquake, 2015: Who does What Where When (4Ws) in Health



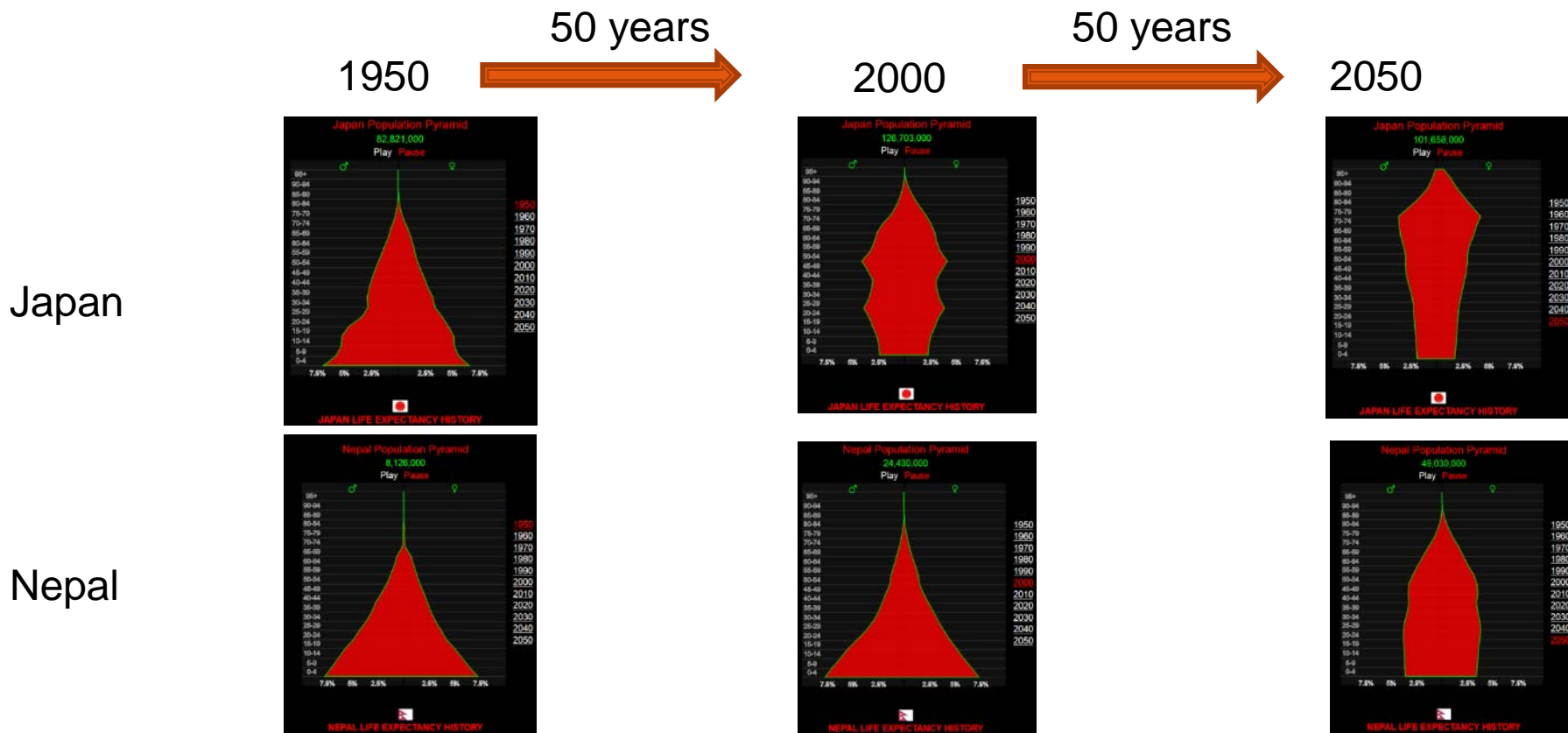
Socio-economic impact of injuries

- More than 20,000 injuries were treated according to the Trauma Guidelines.
 - No un-necessary amputation was performed
 - Children, youth (Age 6-18) and older citizens over 60 of years attributed one in six of trauma patients.
 - 60% Bone fracture
 - 13% Spinal cord injuries
 - 11% Head injuries
- 
- Additional facilities and long-term care (step-down) are needed for rehabilitation and psychosocial support

Medical and public health needs and capacity



Age distribution in Japan and Nepal



Change the concept of Risk Reduction

Needs

Top 3 priorities for communities (UN Survey)

1. A good education
2. Better healthcare
3. An honest and responsive government

Paradigm Shift



Climate Change
Rapid urbanization
Poverty
Lack of resource
Loss of biodiversity

Change of Risk



Better access

Resilient
Community

Safe Hospital

Effective
Response

Injury
Illness
disability

Hazard-proof
Structure

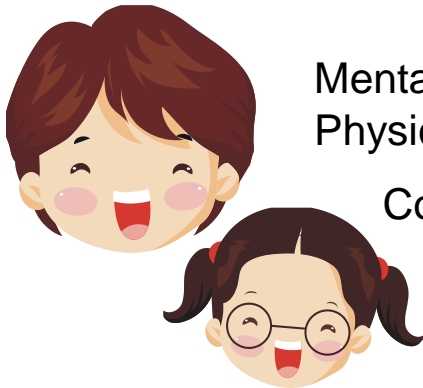
Safe School

Quality
of Life

Early Warning

Mental and
Physical

Communication
Funding and
Development



International Workshop on Education of Disaster Medicine and Public Health

Feb 9, 2016



Delegates and students in Human Security Course



Discussion



World Café Discussion