ASIA & THE PACIFIC HEALTH FINANCING FORUM

Assessing PHC Effectiveness:
Analyzing Hospitalizations for Ambulatory-Care Sensitive Conditions

Session 9

Financing Primary Health Care:
Opportunities at the Boundaries

September 15-16, 2022
Bangkok, Thailand

Co-hosted by: WORLD BANK GROUP, Australian Aid, GLOBAL FINANCING FACILITY, USAID FROM THE AMERICAN PEOPLE

Supported by: The Global Fund, Joint Learning Network, Gavi The Vaccine Alliance, Bill & Melinda Gates foundation

Session 9

Assessing Primary Health Care Effectiveness: Analyzing Hospitalizations for Ambulatory-Care Sensitive Conditions

Chair

Ms. Trina S Haque
Practice Manager, HNP
Global Practice, South Asia,
World Bank

Panelists

Dr. James Fong
Permanent Secretary for
the Ministry of Health and
Medical Services,
Fiji

Dr. Sudha Chandrasekhar
Executive Director, Health Policy &
Hospital Engagement Assurance,
National Health Authority,
India

Presenters

Dr. Huong Lan Dao
Senior Health Specialist,
HNP Global Practice , EAP
World Bank

Ms. Sheena Chhabra
Senior Health Specialist
HNP Global Practice , SAR
World Bank

Dr. Sarah Bales
Consultant
World Bank

Dr. Valeria de Oliveira Cruz
Regional Adviser
Health Financing and
Governance
WHO

Dr. Edson Correia Araujo
Senior Health Economist
HNP Global Practice, SAR
World Bank

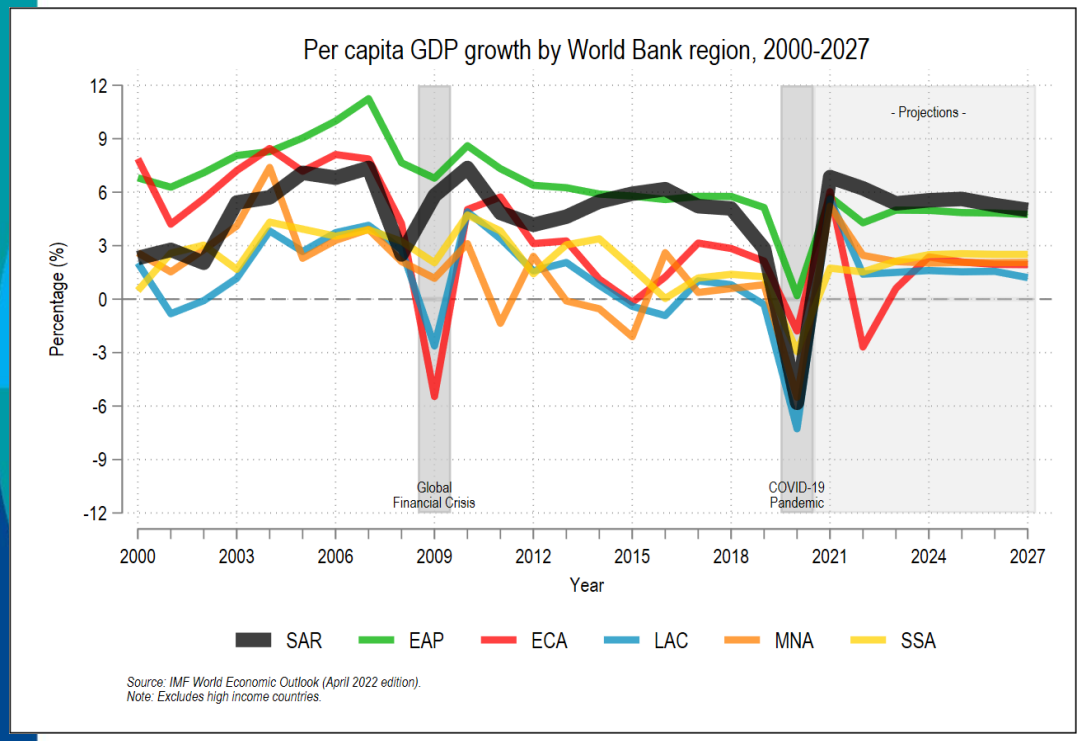
2022
ASIA & THE PACIFIC
HEALTH FINANCING
FORUM

Objective of the Session

To provide an overview concept of Potentially Preventable Hospitalization (PPH) and ambulatory care sensitive conditions (ACSCs) and discuss its measurement and potential for implementation in EAP–SAR countries.

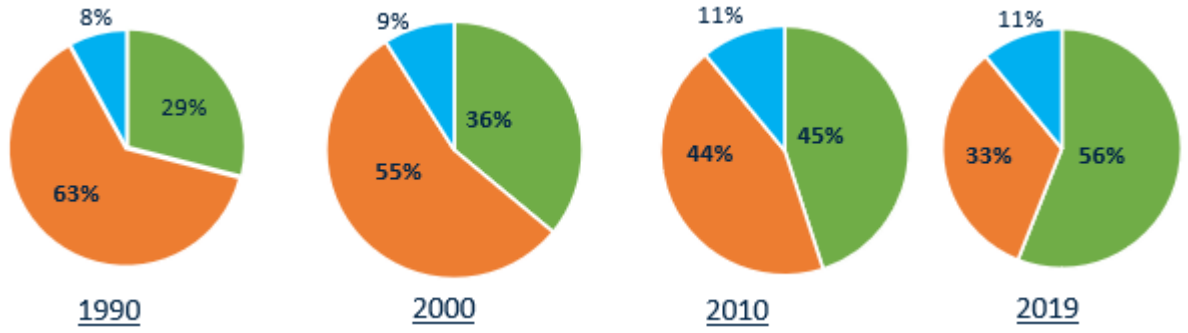
- To understand the concept of PPH and ambulatory care sensitive conditions (ACSCs) and why hospitalizations for ACSCs are increasingly being used globally to routinely assess the effectiveness of PHC across countries;
- To understand how hospitalizations of ACSCs conditions can be measured and assessed - case study from Vietnam;
- To provide an overview of how incentive payments to community health workers and other provider payment mechanisms are often tied to bringing down hospitalizations for ACSCs (e.g.. under Brazil's Family Health Strategy); and
- To discuss applicability, challenges, and other reactions from government counterparts from India and Fiji.

Backdrop: Rapid Economic, Demographic, & Epidemiological Transition in SAR & EAP

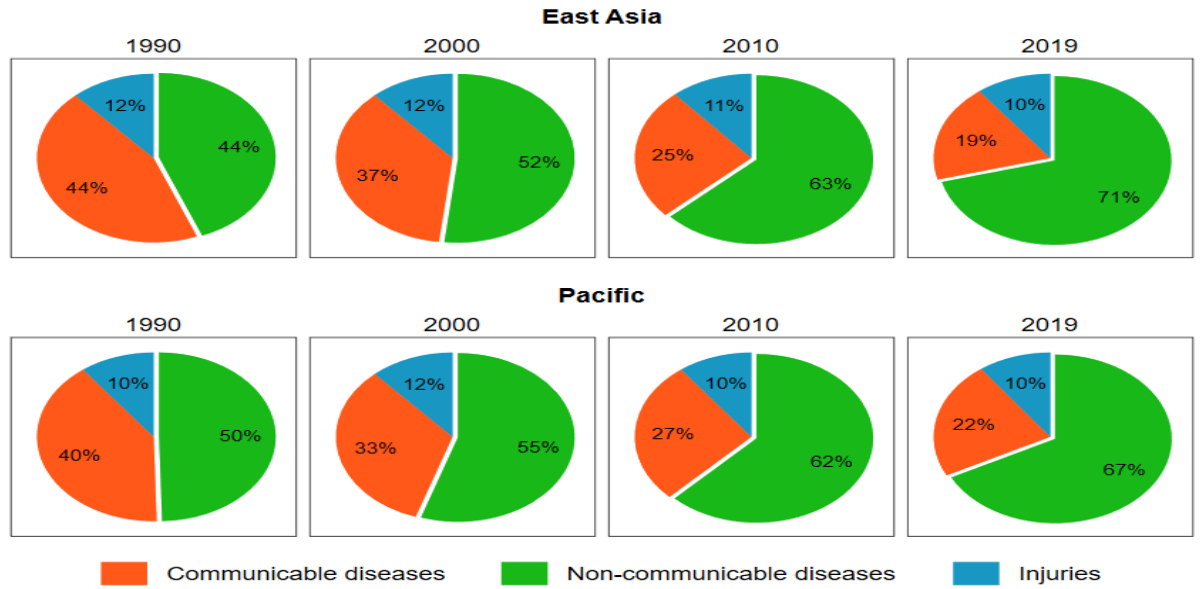


- SAR & EAP are the fastest growing region pre & post-pandemic
- EAP has more older people and is ageing faster than any other region - ~270 million 65+ population in EAP & 115 million in SAR in 2020
- The epidemiological transition is underway, with greater & growing disease burden of NCDs though '1st generation' challenges such as TB remain an issue in both the regions

Disease burden by type, SAR, 1990-2019 (% DALYs)

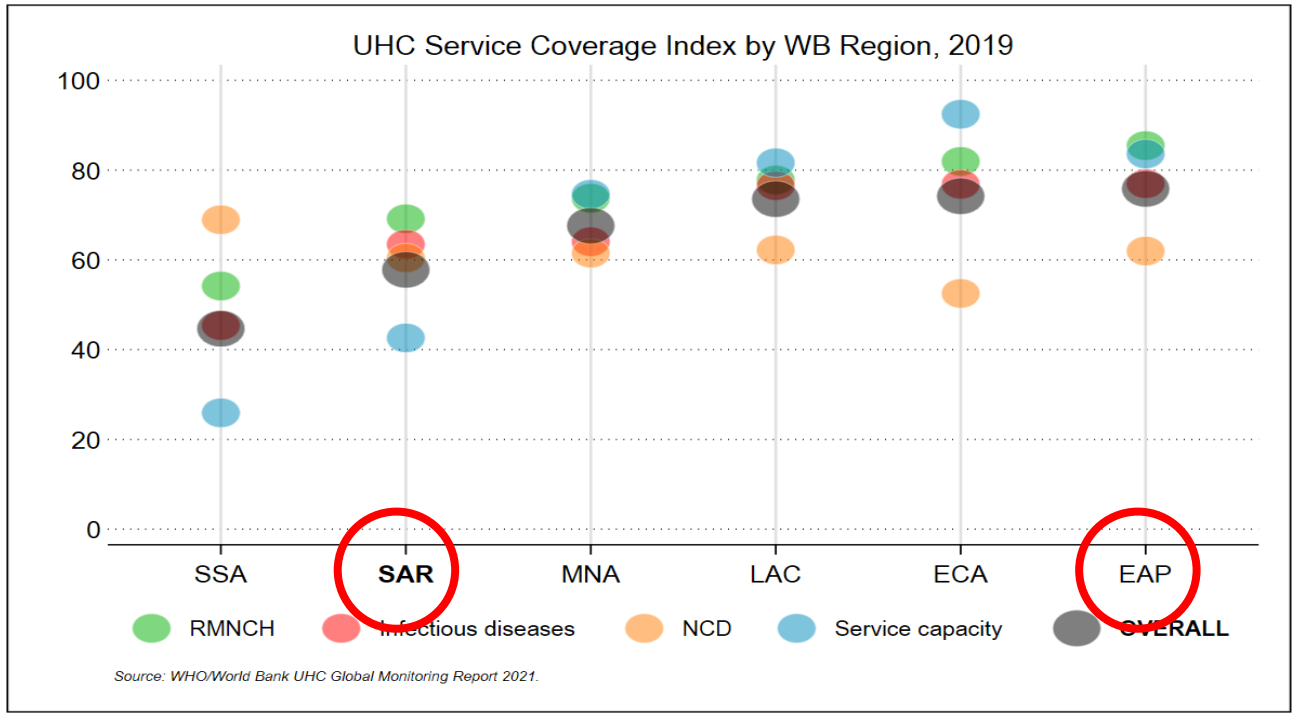


Disease burden by type, SAR, 1990-2019 (% DALYs)



Source: Institute of Health Metrics and Evaluation. Excludes high income countries.

RMNCH service coverage is quite high while NCD coverage lags in both regions



- EAP is amongst the best performing regions in terms of UHC Service Coverage Index (SCI) while SAR has second lowest index value
- Service capacity in SAR is a matter of concern

ASIA & THE PACIFIC HEALTH FINANCING FORUM 2022

Potentially Preventable Hospitalization for Ambulatory-Care Sensitive Conditions : An Overview

- What are ambulatory-care sensitive conditions (ACSCs)?
- What are Potentially Preventable Hospitalization (PPH)?
- Why monitor and track hospitalizations for ACSCs?
- How to monitor and track hospitalizations for ACSCs?

What are Ambulatory-Care Sensitive Conditions ?

- **'...**conditions for which timely and effective ambulatory care can help reduce the risks of hospitalization by preventing the onset of an illness or condition, controlling an acute episodic illness or condition, or managing a chronic disease or condition**.'**
  -- *Billings (1992)*

- '…chronic conditions for which access to appropriate primary care could prevent the need for the current admission to hospital.'

  --- *OECD*

- '...conditions for which hospitalizations can be avoided by timely and effective care in ambulatory settings.'
  -- *WHO*

- '…conditions where effective community care and case management can help prevent the need for hospital admission
  --*NHS England*

Preventability: Besides vaccinations, counselling or advice on lifestyle changes such as quitting smoking or changing diet and exercise could help to prevent many diseases such as COPD, hypertension, stroke.

Ability to treat and/or manage the disease in an ambulatory care setting. Examples of diseases that can be managed effectively in an ambulatory setting include asthma, anemia, acute respiratory infection, hypertension, diabetes, etc.

Origin of ACSC concept

Billings et al. (1993) is widely cited as the first study of ACSCs.

- The focus of this study was differential hospitalization rates for ACSCs by income status. Higher hospitalization rates among low-income people were attributed to lower access to ambulatory care.
- The study showed the usefulness of small area analysis for identifying areas with less effective primary health care.
- Since then, ACSCs and related PPHs have been used in numerous countries as KPIs for monitoring prevention quality or health equity, or as an important indicator for use in PHC quality improvement systems.

Examples of ACSCs

Vaccine-Preventable ACSCs	Acute ACSCs	Chronic ACSCs
Bacterial pneumonia	Dehydration	Atrial fibrillation and flutter
Influenza	Pediatric gastroenteritis	Angina
Diphtheria	Perforated appendix	Congestive heart failure
Whooping cough	ENT infections	Hypertension
Measles	Kidney/urinary tract infections	Asthma
Rubella	Perforated/bleeding ulcer	COPD
Acute hepatitis B	Cellulitis	Diabetes complications
Mumps	Dental conditions	Iron deficiency anemia
Rubella arthritis	Convulsions and epilepsy	

Early symptoms of urinary tract infections can be detected and treated in ambulatory settings; a failure to do so can lead to acute glomerulonephritis which will most likely require hospitalization

Acute episode may be dealt with at primary care without requiring unplanned/emergency hospital admissions

Avoid need for emergency care via improved primary care management

PHC and ambulatory care for ACSCs in the patient journey

Patient with ACSC

Yes

ACSC prevented through PHC intervention: vaccination, lifestyle change …

No

Yes

ACSC managed effectively in PHC or ambulatory care: -acute disease -chronic disease

No

Care sought at hospital -Referral -Bypass PHC

Patient not admitted to hospital

No hospitalization

Potentially preventable hospitalization

Patient admitted to hospital

Admission clinically necessary

Admission NOT clinically necessary

FORUM

Why monitor and track Hospitalizations for ACSCs?

- Big Data: large-scale hospitalization data increasingly collected and available

- ACSC hospitalization metrics can indirectly provide information on access to quality primary health care. Powerful signal of information and potential problems related to continuum of care (although not all ACSC hospitalizations are necessarily due to lack of access to quality primary care).

- Reduced rates of hospitalizations for ACSCs reduce morbidity and mortality; Effective frontline management of ACSCs can also help free scarce hospital beds in resource-constrained settings. Unnecessary hospitalizations are also bad for patients: admissions can lead to hospital-acquired infections as well as loss of mobility and increased frailty from inactivity.

Analysis of ACSCs has been implemented covering at least 48 countries, including studies in Asian countries of Japan, South Korea, Taiwan, Hong Kong, Singapore and Thailand, although some of the studies only look at one or two specific ACSCs

Why measure and assess Potentially Preventable Hospitalizations (PPH) in the context of strengthening PHC?

- **Identifying localities where PPH rates are high**, suggesting weak PHC service provision.
- **Identifying specific priority diagnoses** requiring strengthened capacity at the PHC level to address and prevent hospitalization. These include both acute illnesses such as respiratory infections, and chronic diseases such as diabetes or hypertension.
- Potentially **identifying specific population groups** (age, sex, vulnerable groups) with higher rates of PPH for specific conditions to aide in targeting PHC programs.
- Reliance on **health insurance claims data** allows timely analysis of PPH for prompt interventions to strengthen PHC.
- Targeted improvements in PHC informed by PPH studies not only improves convenience for patients and reduces burden of disease but can also **strengthen efficiency of the health system** by shifting care from hospitals to PHC providers.
- Lack of investment in improving PHCs will show up as delayed and unnecessary costs related to PPHs, bad for the system, bad for the individual.

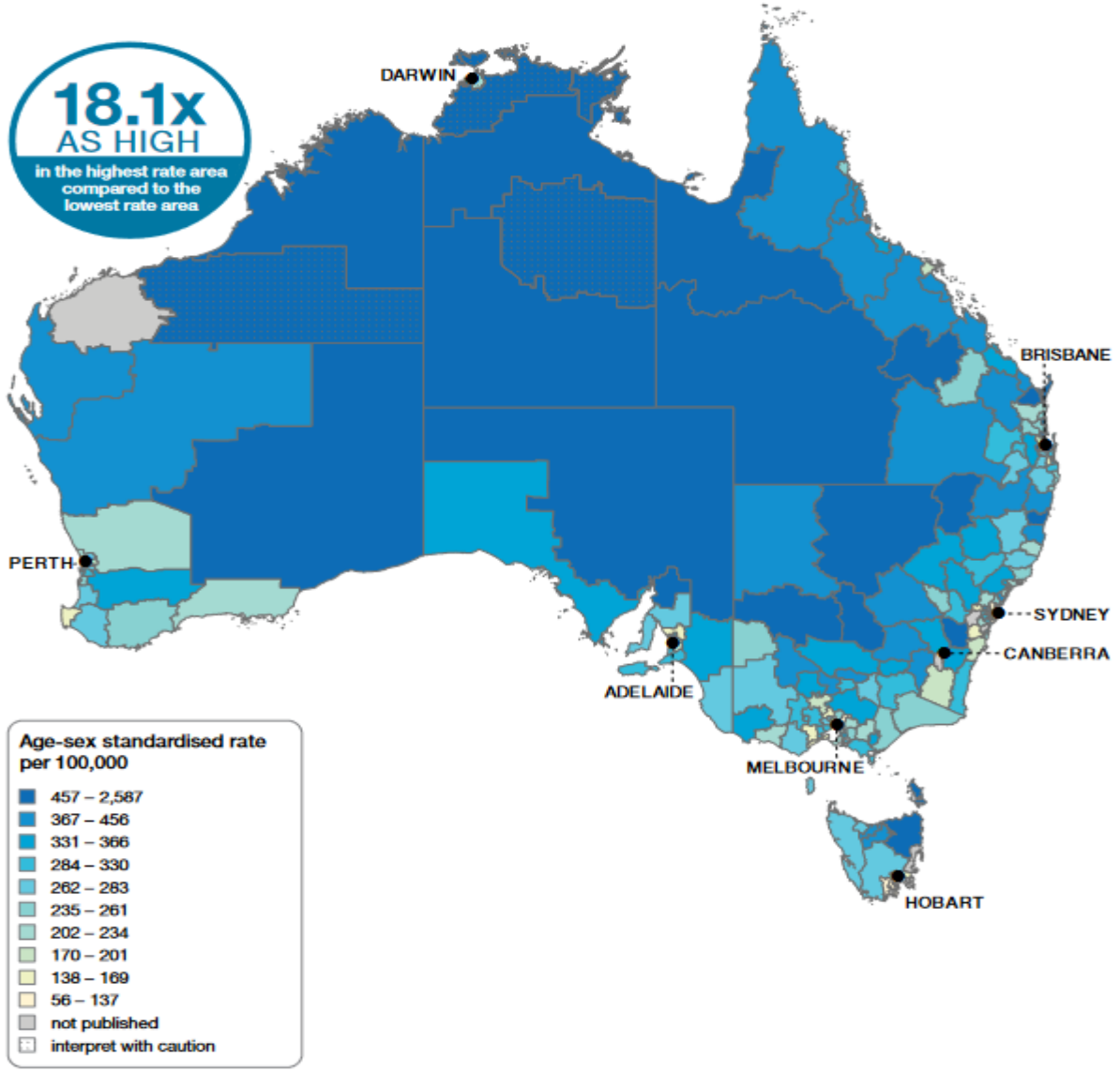
Examples of use of ACSCs in health system monitoring

- Australia examination of geographic inequalities in PPH rate for COPD

- More remote and poorer areas have higher PPH due to low access to effective PHC for COPD management.

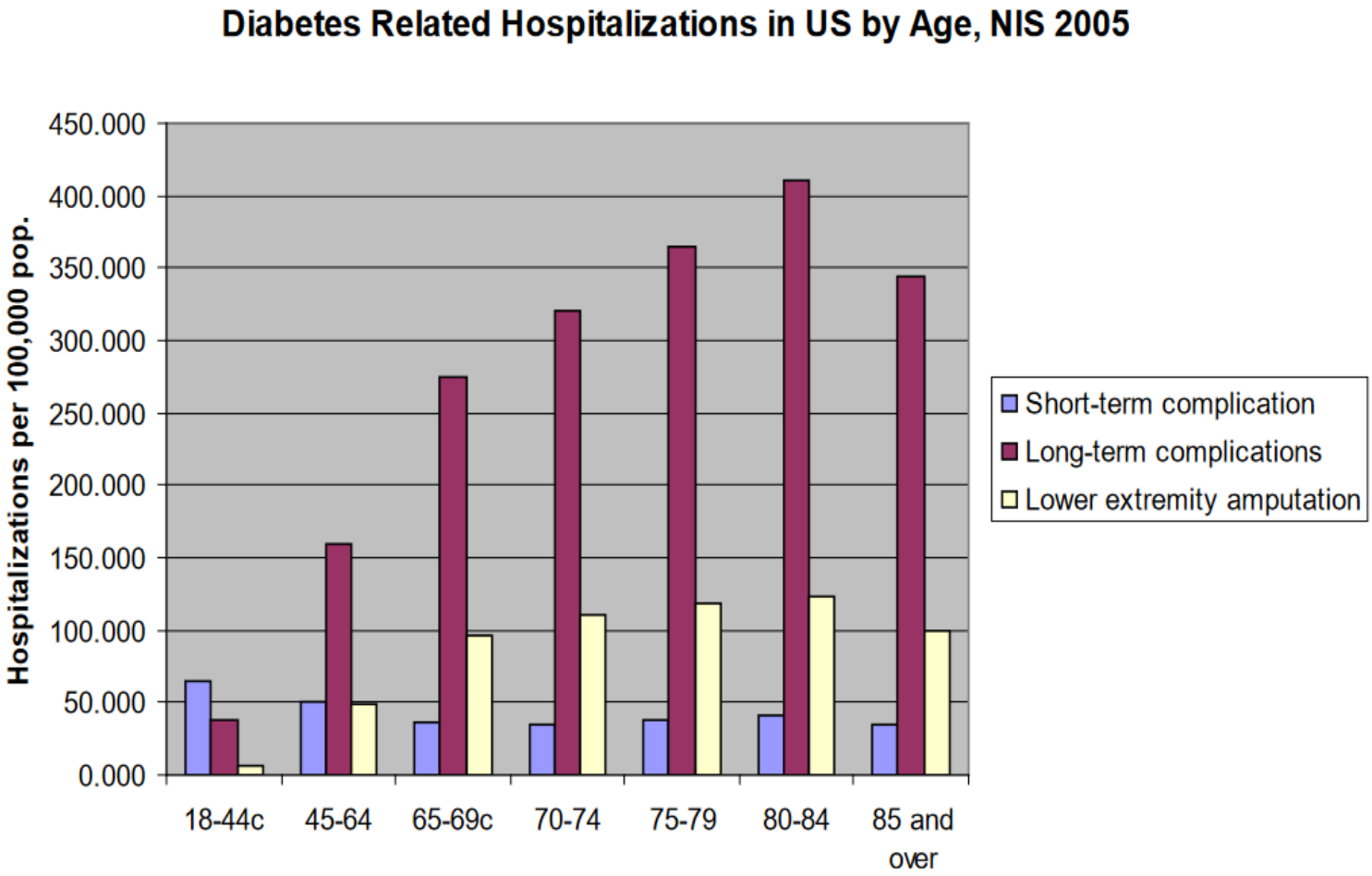
Source: Australian Commission on Safety and Quality in Healthcare. ***The Fourth Atlas of Health Care Variation 2021.*** *https://www.safetyandquality.gov.au/sites/default/files/2021-04/fourth_atlas_2021_-_2._chronic_disease_and_infection.pdf*

Number of PPH- COPD per 100,000 people of all ages, age and sex standardized, by Statistical Area Level 3 (SA3) of patient residence, 2017-18



Examples of use of ACSCs in health system monitoring

United States Prevention Quality Indicators (PQIS) are a set of measures that can be used with hospital inpatient discharge data to identify "ambulatory care sensitive conditions" (ACSCs).

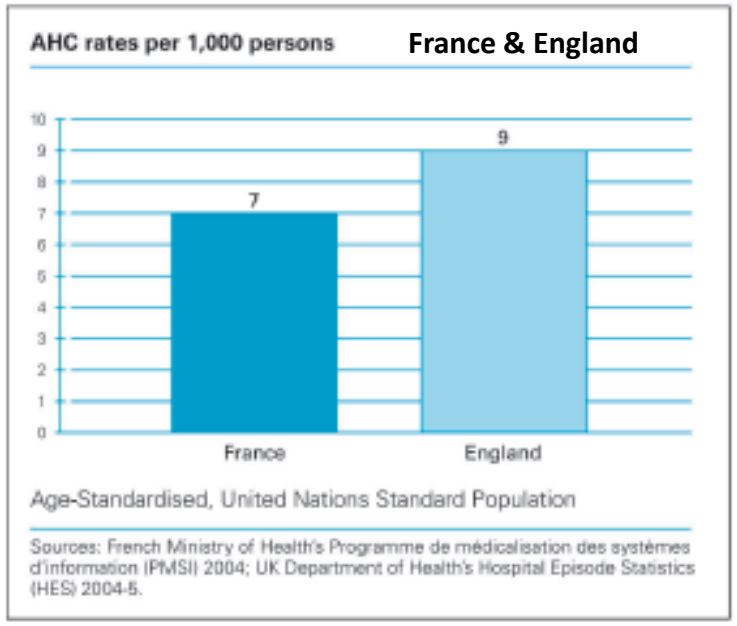


Existing Evidence On PHC Quality & Lower ACSC Nexus

- United States has identified 22 ACSCs for which effective primary care significantly reduces the incidence of hospitalizations (Fiorentini et al. , 2011)
- PPH due to ACSCs steadily decreasing in South Korea over recent years. Attributed to improved quality and accessibility of primary care to manage ACSCs . Estimated costs of PPH justify allocation of resources for primary care that leads to reduced hospitalization (Kim et al., 2019). Reducing ACSC hospitalizations can reduce cost pressures on health systems given the generally lower unit costs of implementing frontline interventions.
- Another study based on hospitalizations in Singapore emphasized on evaluating the magnitude of ACSC to understand the quality of primary healthcare. Study revealed a consistent decline in avoidable hospitalizations, attributed largely to improvement in quality of primary care, also highlighting the higher rates of PPH in women than in men, and in Malays and Indians compared with Chinese suggesting persisting demographic and social inequities (NITI & NG, 2003).
- Using a systematic review approach, Rosano et al. (2012) found that majority of studies confirmed the expected inverse association between accessibility to PHC and the risk of hospitalization for ACSC. Adjustment for socio-economic status is a key factor for the right interpretation of the studies.
- Not only the studies have evaluated critical role of PHC in this context but also aspects of PHC that are responsible for preventing hospitalization (Caminal, 2004).

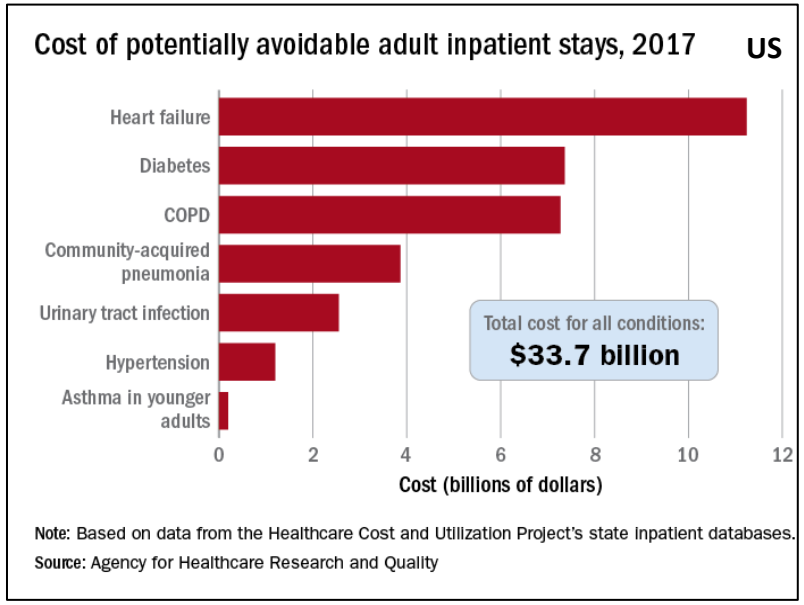
Type of intervention	Infectious diseases	Non infectious diseases
1 Primary prevention	Infectious diseases susceptible to prevention through immunization	Hypertensive heart disease
2 Early diagnosis and treatment	Rheumatic fever	Diabetes mellitus
	Congenital syphilis	Disorders of hydro-electrolyte metabolism
	Other tuberculosis	Hypertensive heart disease
	Peritonsillar abscess	Heart failure
	Pneumonia	Bleeding or perforating ulcer
	Appendicitis with complications	
	Acute pyelonephritis	
	Pelvic inflammatory disease	
3 Good ongoing, control and management		Diabetes mellitus
		Hypertensive heart disease
		Heart failure
		Bleeding or perforating ulcer

Evidence Of Cost Savings



Millions of Potentially Avoidable Hospital 'Bed Days'

The total number of avoidable hospitalisations in France and England are enormous, and the potential savings associated with reducing them are great. In France there were more than 400,000 hospitalisations for AHCs among adults in 2004, with an average length of stay of about 5.5 days. This represents about two million total bed days. In England, there were more than 600,000 hospitalisations for AHCs among adults with an average length of stay of 6.3 days. This represents about four million total bed days. Together, these represent billions of euros in potentially avoidable hospital expenditures.



Summary

- Ambulatory care-sensitive conditions (ACSCs) account for one in every six emergency hospital admissions in England.
- The proportion of emergency admissions for ACSCs is larger in under-5s and over-75s. Children are predominantly admitted for acute conditions, older people for chronic conditions, and both groups for vaccine-preventable conditions.
- According to our estimates, emergency admissions for ACSCs could be reduced by between 8 and 18 per cent. We estimate this would result in savings of between £96 million and £238 million per year.

A study aimed to measure the avoidable hospitalization rate and the treatment cost per hospitalization time in large cities of eastern China looked at five ACSC: hypertension, diabetes, asthma, COPD, and CHF between 2015-2018.

Condition	Number in 2018	Average cost per case
Hypertension	30,957	$1,307
Diabetes	41,975	$1,593
Asthma	3,060	$1,301
COPD	35,122	$2,068
CHF	14,258	$2,084

Some issues for consideration

Each country can have consensus on their common ACSCs and can review them overtime.

Be aware of the shortcomings of ACSC studies, e.g. patients who forego hospital care when they face an ACSC will not appear in the statistics, because only patients who present at hospitals are covered. Thus, PPH is usually considered an underestimate.

Thank You!

2022
ASIA & THE PACIFIC
HEALTH FINANCING
FORUM

2022

ASIA & THE PACIFIC
HEALTH FINANCING
FORUM

Potentially preventable hospitalization in Vietnam: Analysis using social health insurance claims data

Financing Primary Health Care:
Opportunities at the Boundaries

September 15-16, 2022
Bangkok, Thailand

Co-hosted by:

WORLD BANK GROUP
Australian Aid
GLOBAL FINANCING FACILITY
USAID FROM THE AMERICAN PEOPLE

Supported by:

The Global Fund
Joint Learning Network
Gavi The Vaccine Alliance
Bill & Melinda Gates foundation

Presentation structure

- Vietnam's health service delivery and health financing context
- Data and methodology
- Results of analysis of ACSCs and policy implications
- Conclusions

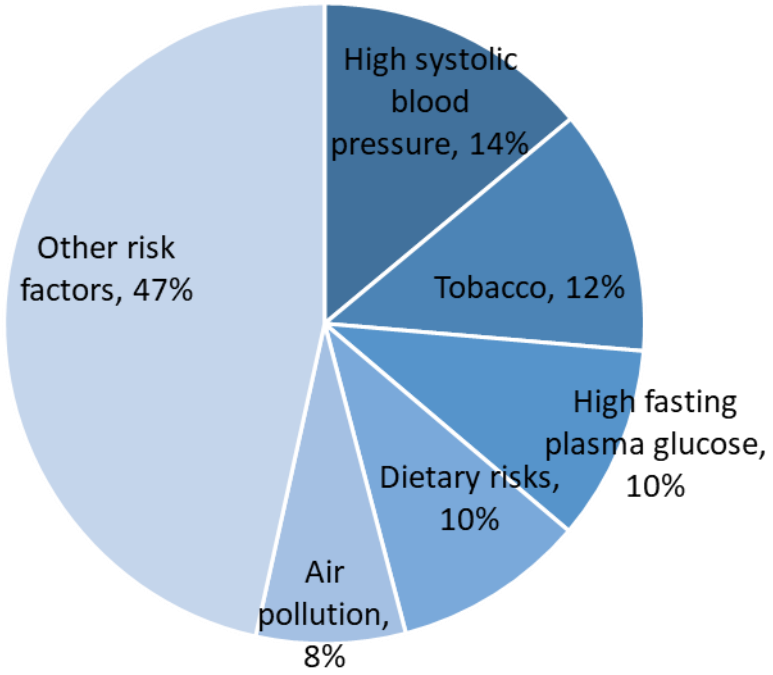
Overview: Vietnam's health service delivery and health financing

ASIA & THE PACIFIC HEALTH FINANCING FORUM 2022

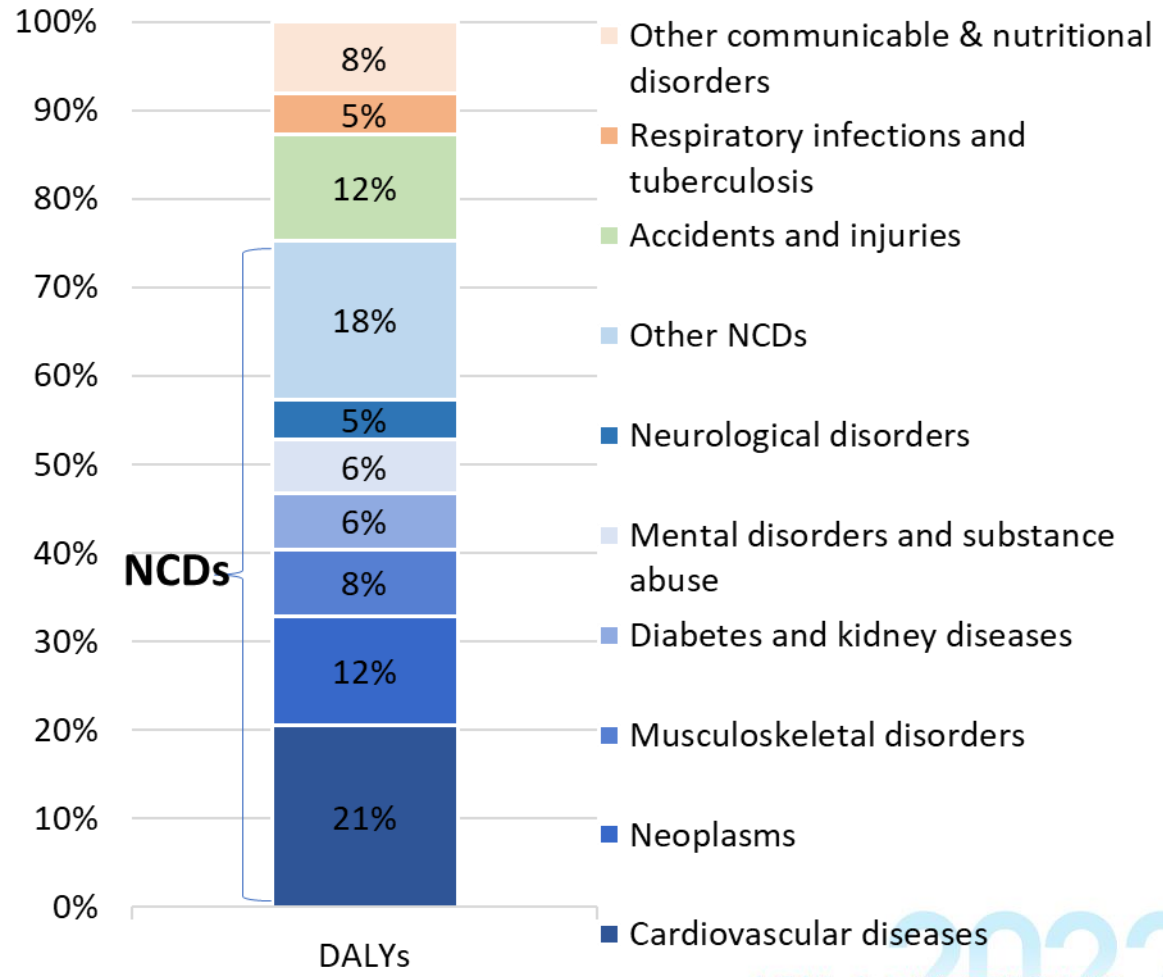
Population and health situation

- Population 98.51 million people (2021)
- Population aged 60+: 11.41 million (11.5%)
- IMR 13.9/1000 births
- Child full immunization rate 96.8%

Risk factors for DALYs, Vietnam 2019



Cause of burden of disease, Vietnam 2019



2022
ASIA & THE PACIFIC HEALTH FINANCING FORUM

Source: Global Burden of Disease Study 2019 (GBD 2019) Results

Health service provision

Primary and preventive health care

Public

~700 District health centers	Center for prevention and PHC management
~11,000 commune health stations	87.7% have medical doctor; 94.5% have staff with OB/GYN training
97,700 village health workers	

Private

- Private family practice and multi-specialty clinics; moonlighting practice of doctors
- Workplace clinics; school health programs

Hospital care

- ~1500 hospitals (7% of hospital beds in private sector facilities)
- 29 acute care hospital beds per 10,000 population
- Bed occupancy ratio 129%
- Average length of stay 6.7 days
- 1 in 5 inpatient cases is surgical

- Average of 2.1 ambulatory consultations/person in population
- 1 admission per 6 people in the population
- 50% of outpatient contacts and 88% of inpatient admissions were in government hospitals (VHLSS 2020)

Sources: MOH Health Statistics Yearbook 2020; GSO VN Household living standards survey (VHLSS) 2020.

Health financing in Vietnam

- 2019 health spending per capita: US$ 181
- OOP share of CHE: 43% (growing)
- Health share of government spending: 10.1% (44% of CHE)
- 2020 Population covered by social health insurance: 91%
- Provider payments: FFS for curative care; budget allocation for preventive/PHC.
- Hospitals account for three-fourths of CHE (NHA 2020)

WHO Global health expenditure database
CHE=current health expenditure

Main sources of current health expenditures:

- Prevention and primary health care
  - local budget allocations
  - central budget for priority issues
- Curative care:
  - social health insurance (34%);
  - private health insurance (4%);
  - OOP

BẢO HIỂM XÃ HỘI VIỆT NAM

Brief summary of data and methodology for analyzing ambulatory care sensitive conditions (ACSCs) in Vietnam

ASIA & THE PACIFIC HEALTH FINANCING FORUM 2022

Motivation and data opportunity

- Vietnam Social Security (VSS) faces cost escalation that threatens SHI fund sustainability
- Policy goal of increasing effectiveness in use of health insurance fund
  - Reducing unnecessary hospitalization and length of stay are important strategic goals
- Since 2017 electronic claims data available from nearly all providers with detailed episode-level data
- Strong interest of VSS to use the claims data for greater efficiency to achieve its institutional goals.

Review key concepts

- **Ambulatory care sensitive condition (ACSC)-** a set of medical diagnoses for which there is evidence that timely and effective outpatient care can help to reduce the risks of hospitalization
- **Potentially preventable hospitalization (PPH)**-inpatient stays for treating ACSCs.

Data

- Vietnam's SHI claims database contains all the information needed to undertake a study of potentially preventable hospitalizations. **No need to undertake expensive primary data collection.**
- Very few data elements needed to identify ACSCs
  - ICD-10 of principal and secondary diagnoses
  - Age to be used in age standardization
  - Procedure codes to eliminate specific more severe cases from ACSCs *(many countries do not use these when defining ACSCs)*
- Additional data elements can be used for disaggregated analysis

Summary of methodology

Step 1: Create definitions of ACSCs using simple criteria (ICD-10 codes, age) based on literature review

Step 2: Extract de-identified information from the claims database on all episodes meeting the ACSC definition

Step 3: Calculate indicators:

- Age-standardized rates of hospitalization per 10,000 population
- Total potentially preventable hospitalizations
- Total bed days (total payments) related to hospitalization for ACSCs
- Average length of stay (payment per episode) for ACSCs

Conditions included as ACSC	Type
Bacterial pneumonia (not vaccine preventable)	Acute
Cellulitis	Acute
Dehydration, non-infective gastroenteritis, intestinal infections	Acute
Dental conditions	Acute
Ears, nose and throat (ENT)	Acute
Nutritional deficiencies	Acute
Pelvic inflammatory disease	Acute
Perforated/bleeding ulcer	Acute
Pyelonephritis and urinary tract infections	Acute
Tuberculosis	Acute
Angina	Chronic
Asthma	Chronic
Atrial fibrillation	Chronic
Cerebrovascular disease	Chronic
Cervical cancer	Chronic
Chronic obstructive pulmonary disease (COPD)	Chronic
Colorectal cancer	Chronic
Complications of hypertension	Chronic
Congestive heart failure	Chronic
Diabetes and related complications	Chronic
Iron-deficiency anemia	Chronic
Rheumatic heart disease	Chronic
Seizure disorders	Chronic
Influenza and pneumonia (vaccine preventable)	Vaccine preventable
Other vaccine preventable (EPI and non-EPI)	Vaccine preventable

Diagnoses included and in Vietnam's ACSCs

Main indicator- PPH rate

- $\text{PPH rate} = \frac{\text{Hospitalizations for ACSC} * 10{,}000}{\text{Population}}$
- *Note: numerator and denominator were calculated for insured population*
- Direct age standardization was used to eliminate the influence of different age structures for different population groups or ACSCs.
- PPH rates are comparable across population groups, time, localities.

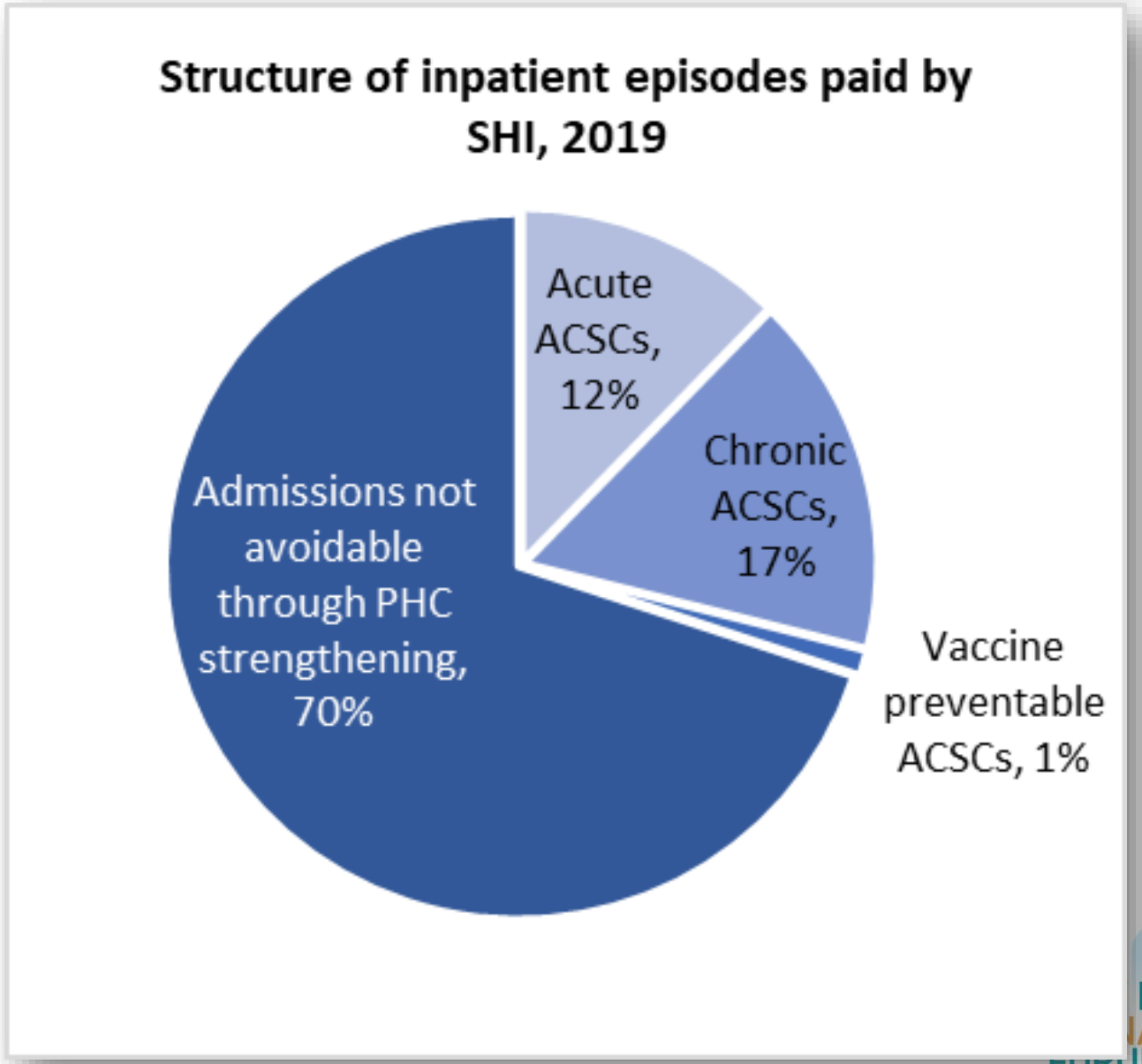
Results

ASIA & THE PACIFIC
HEALTH FINANCING
FORUM
2022

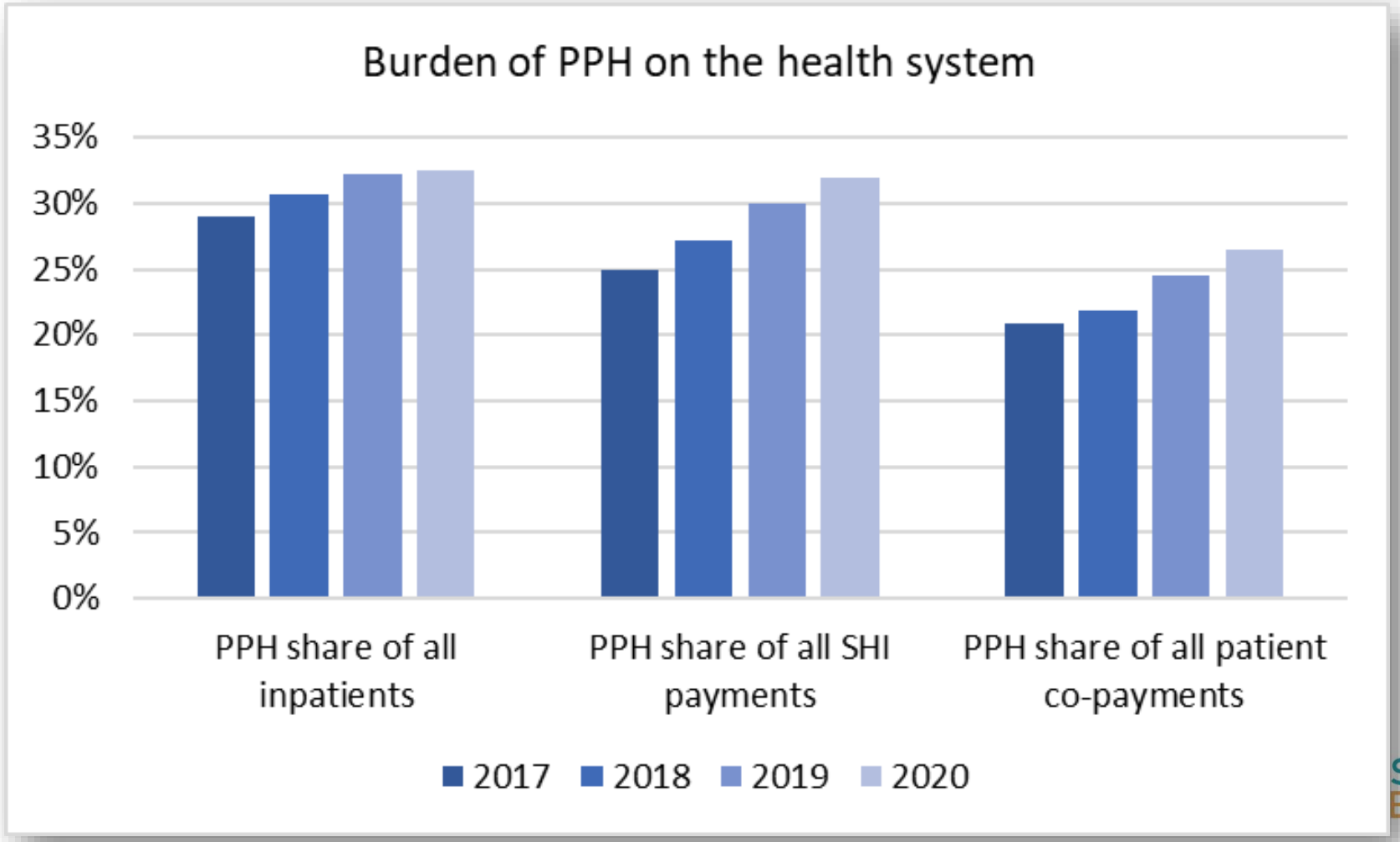
Some guidance for interpretation of results

- *This list of ACSCs is incomplete:* there may be other diagnoses where hospitalization could be prevented by improved PHC and public health measures.
- *There is no expectation to push the PPH rates to zero*. Movement of all groups towards the national average could improve the situation.
- **Remember:** analysis of PPH is NOT an assessment of the appropriateness of admission at time of presentation to the hospital. It is a measure of potential for reducing hospitalizations by preventing disease or treating early and effectively to prevent the need for hospitalization.

Approximately 30% of Vietnam's inpatient episodes in 2019 were potentially preventable through strengthened PHC and prevention

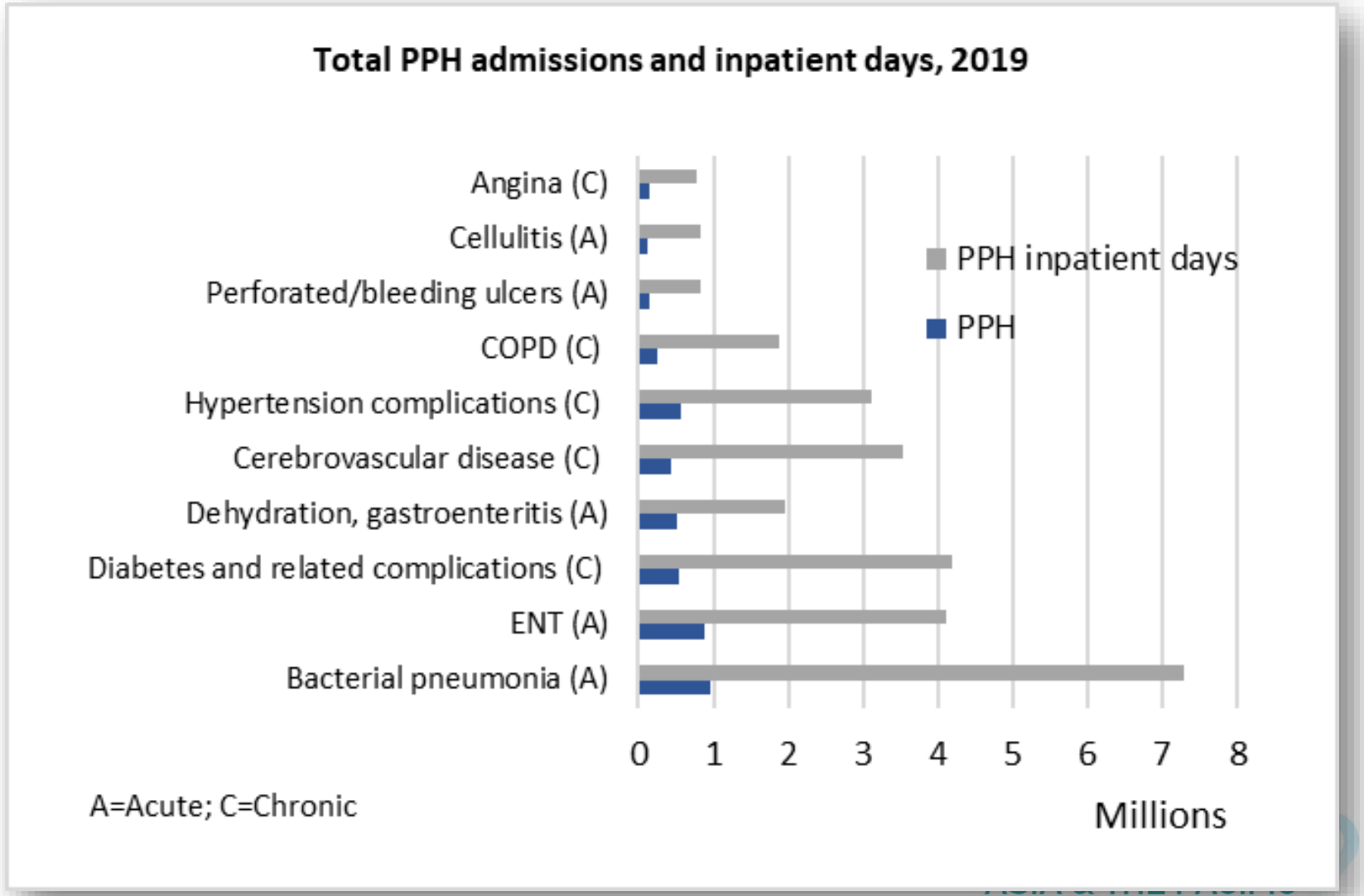


Growing burden of potentially preventable hospitalizations, 2017-2020



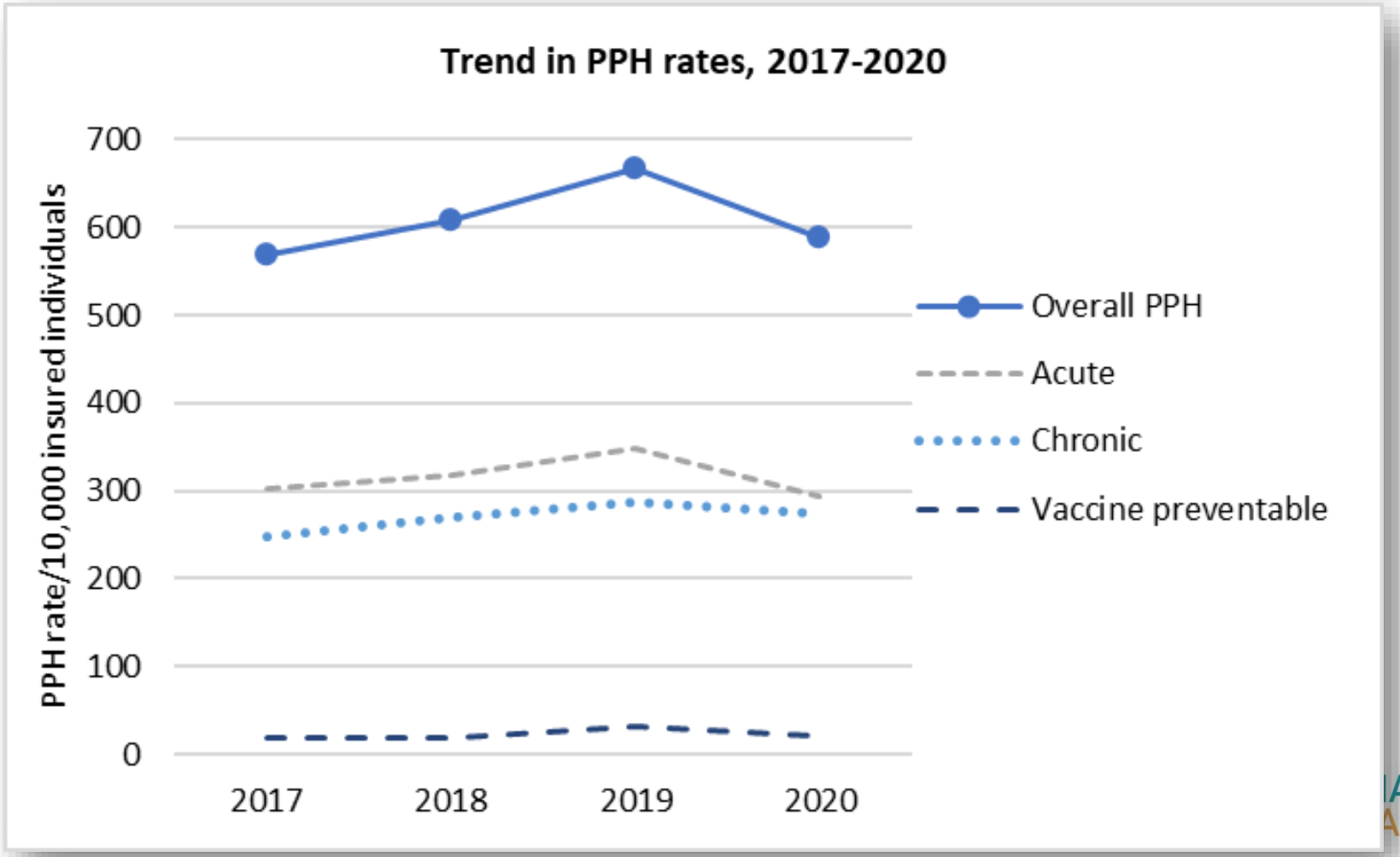
Top 10 ACSCs account for 82% of PPHs

(ranked using age-standardized PPH rate)

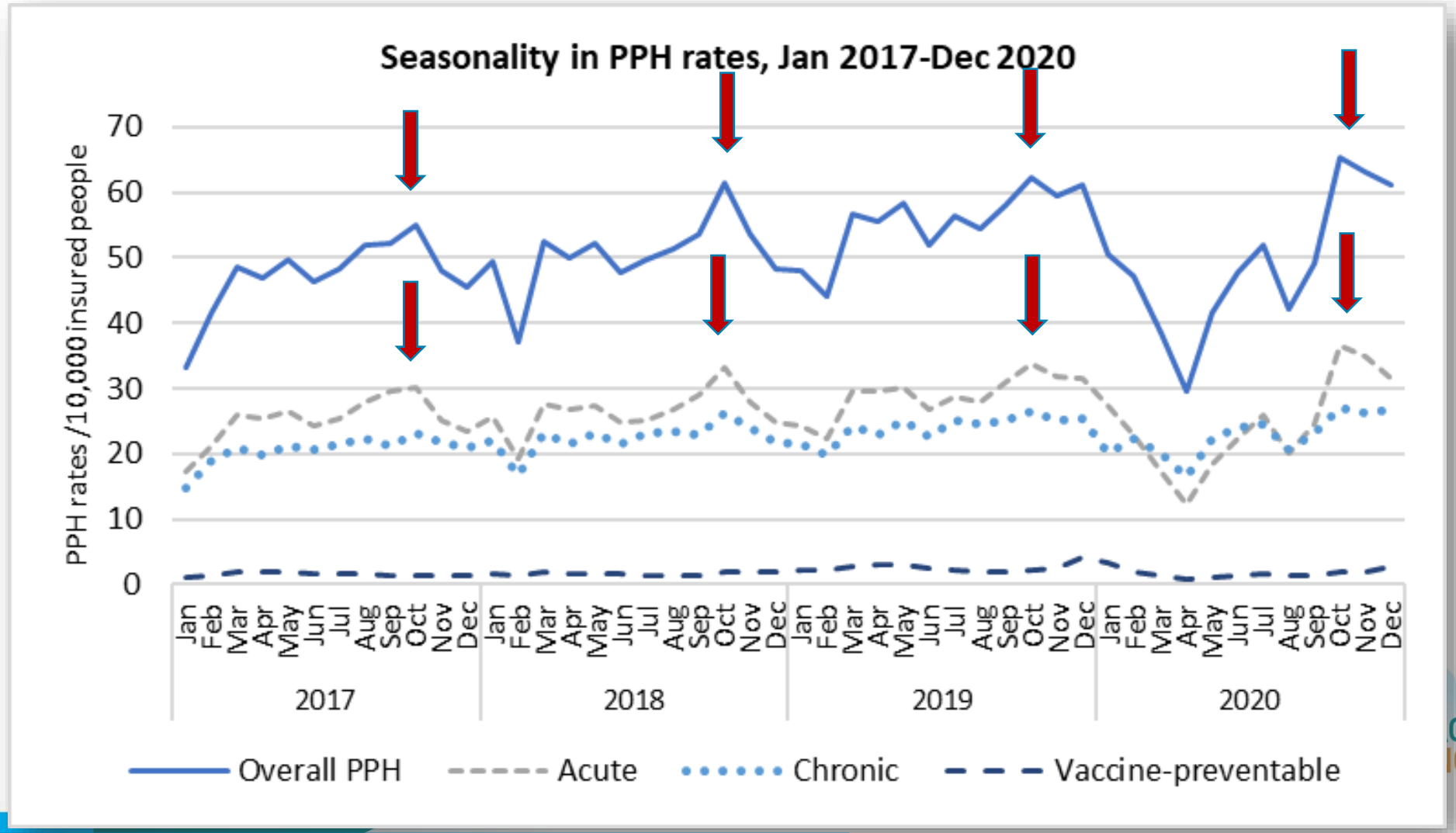


A=acute
C=chronic

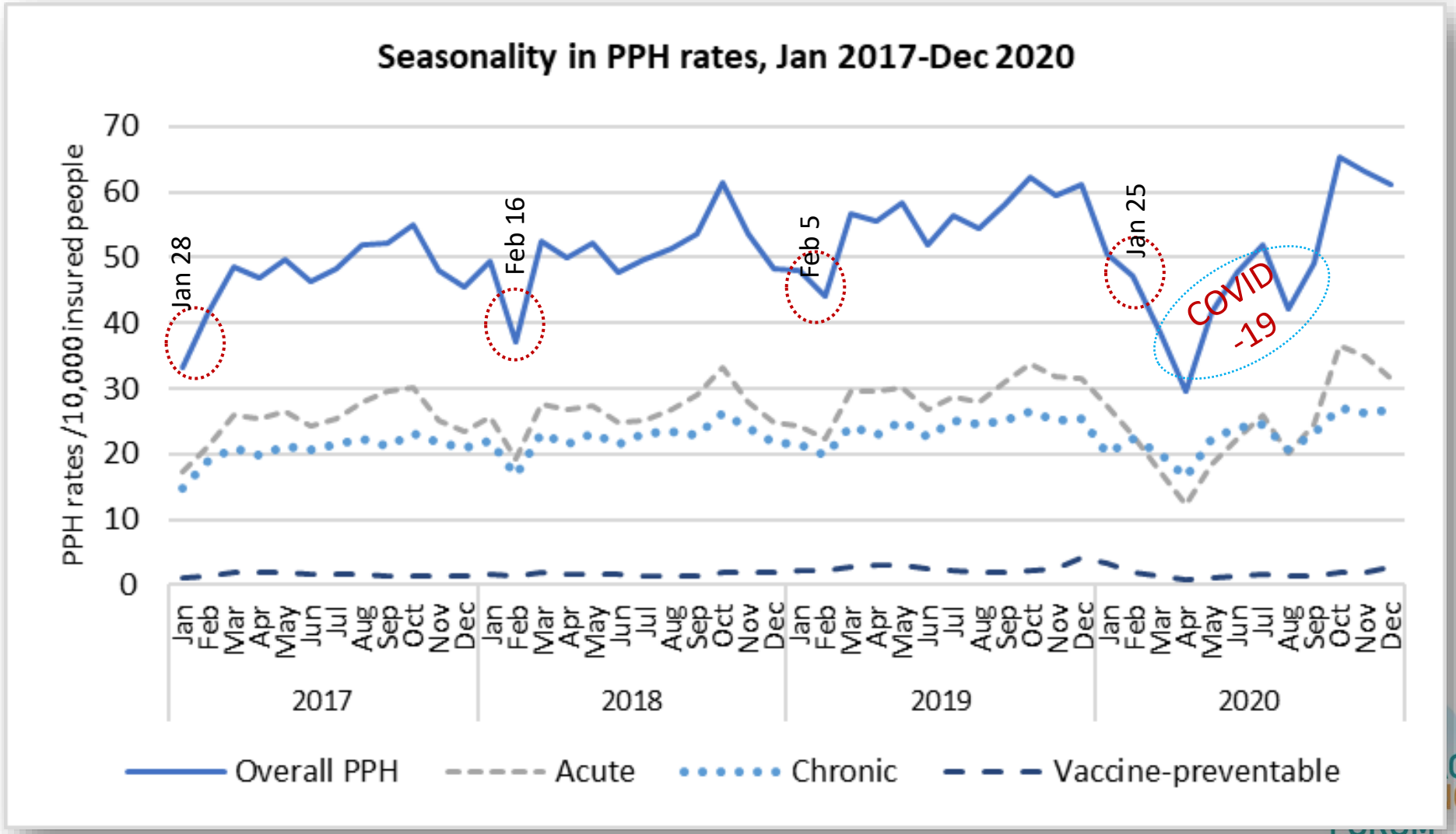
Increasing trends in PPH rates prior to COVID-19 pandemic



Seasonality – Autumn peaks for acute conditions

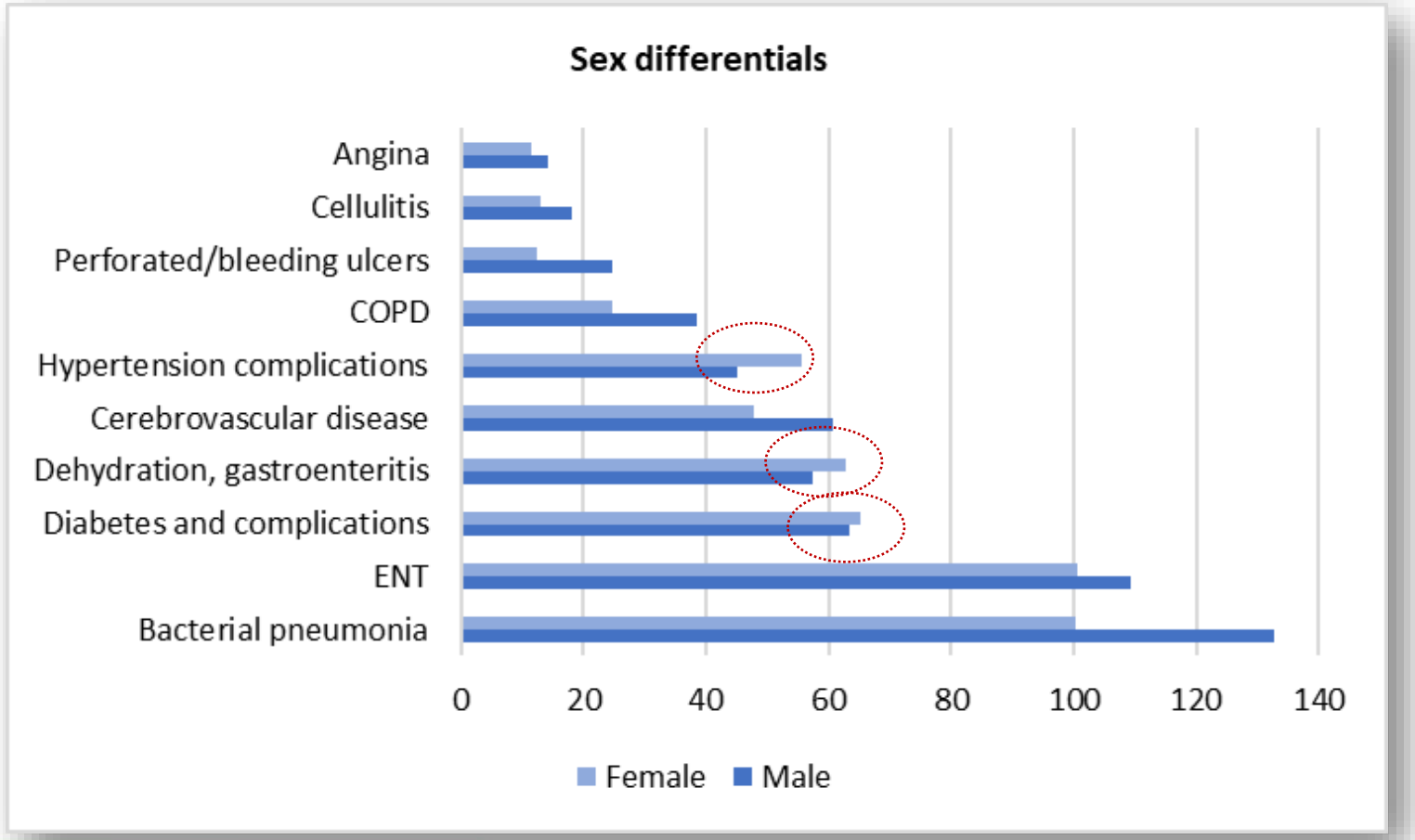


Seasonality – dips around the Tet holiday

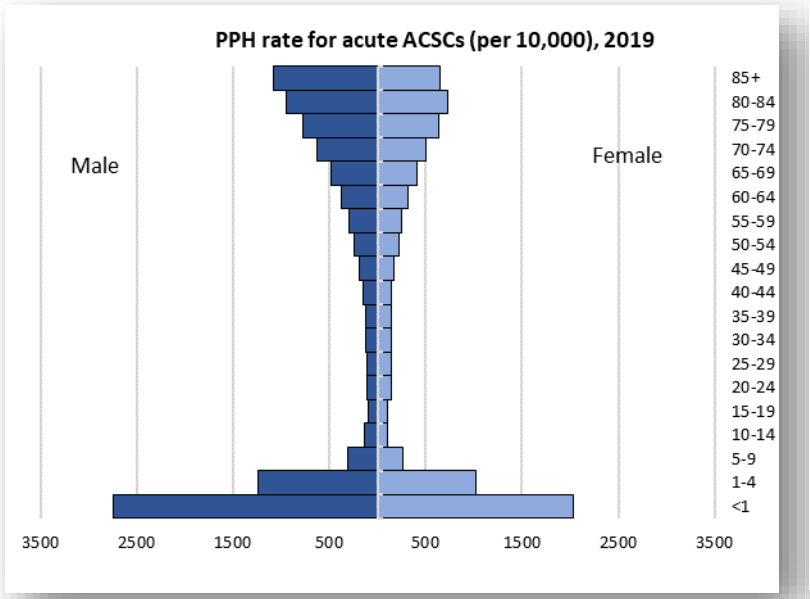


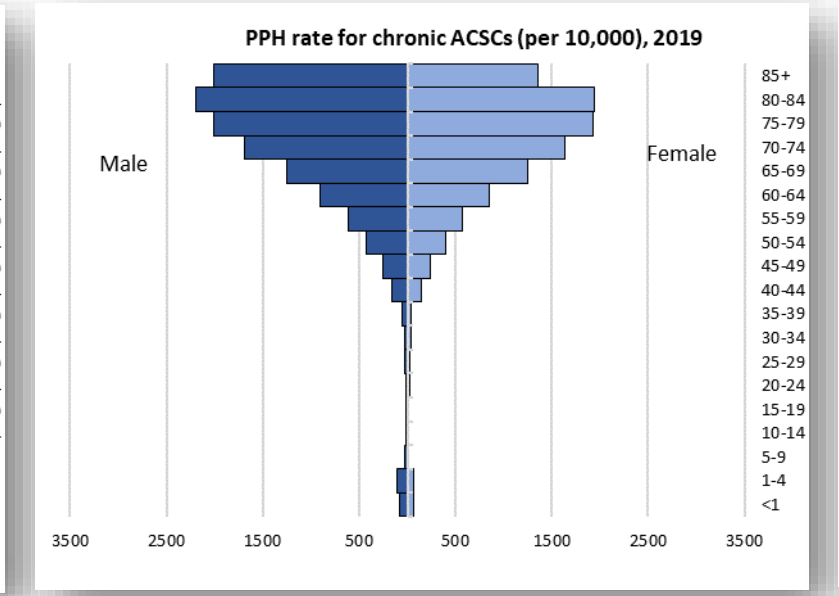
PPH rates generally higher among males with three exceptions (hypertension, gastrointestinal, diabetes)

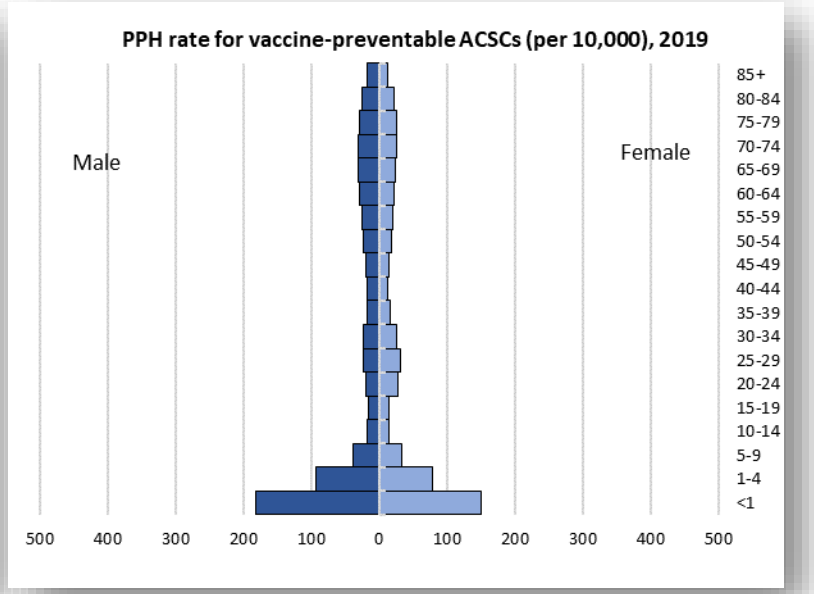
Age-standardized PPH rates per 10,000



Different age patterns by type of ACSC requires different targeting in PHC







Note: The range for vaccine preventable PPH rates is smaller

Acute

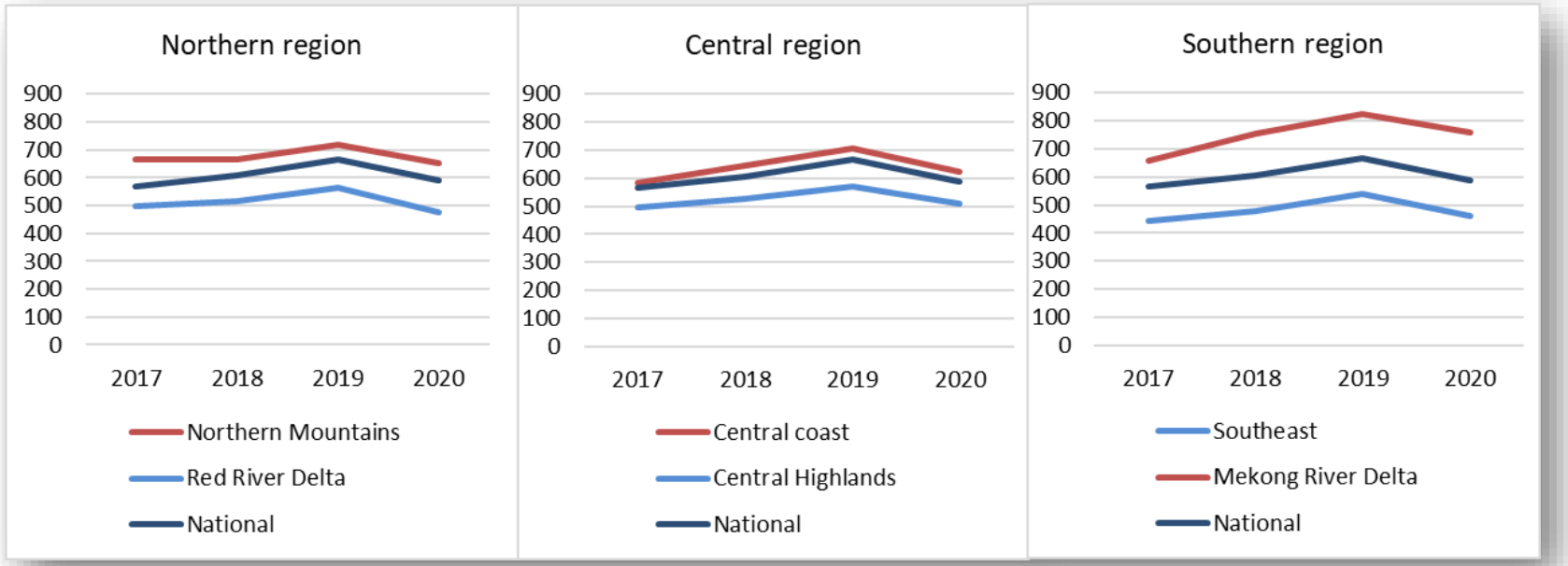
Chronic

Vaccine preventable

ASIA & THE PACIFIC HEALTH FINANCING FORUM

Room for regional improvement: Some sub-regions have PPH rates above and others below the national average rate

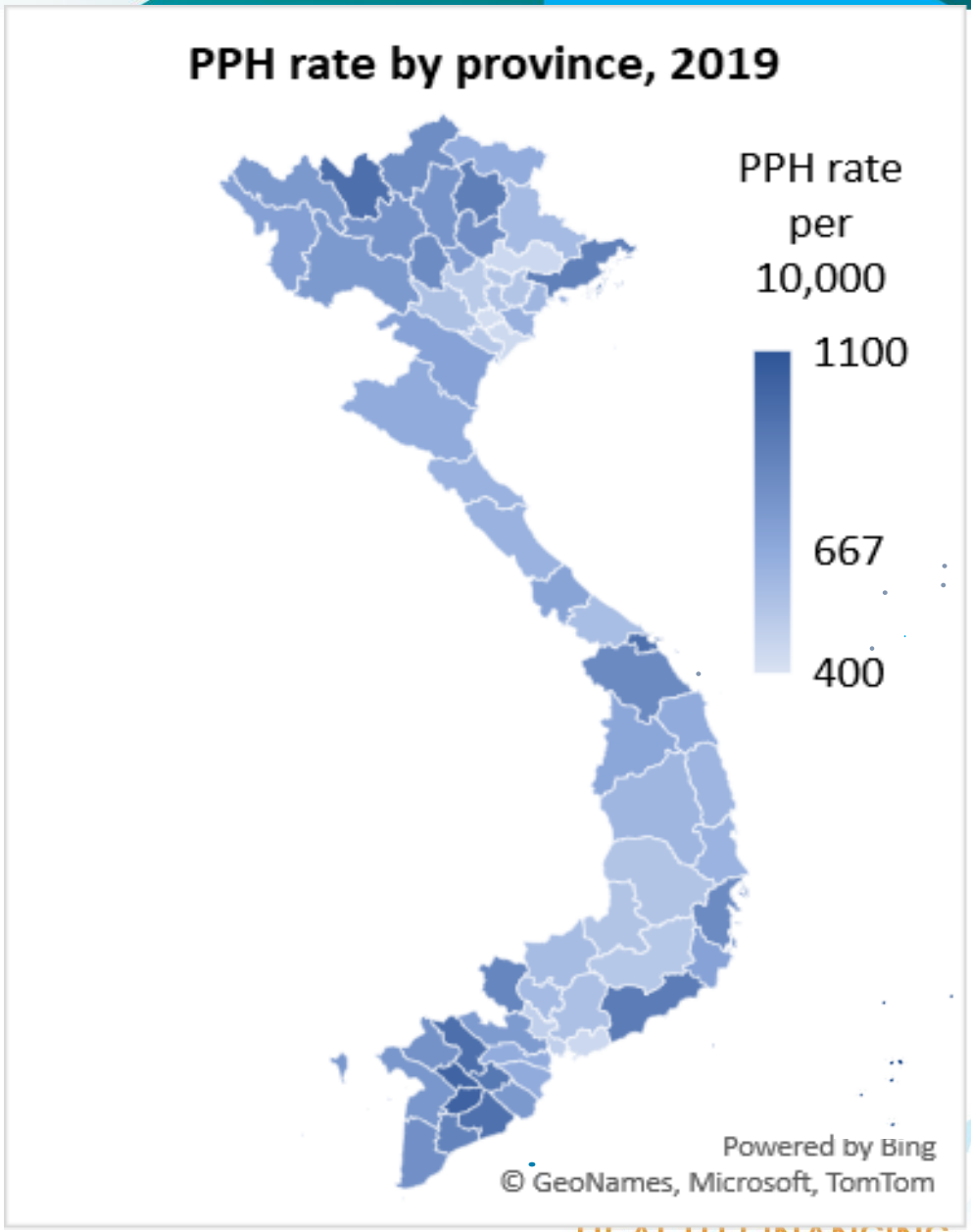
Age-standardized PPH rates per 10,000



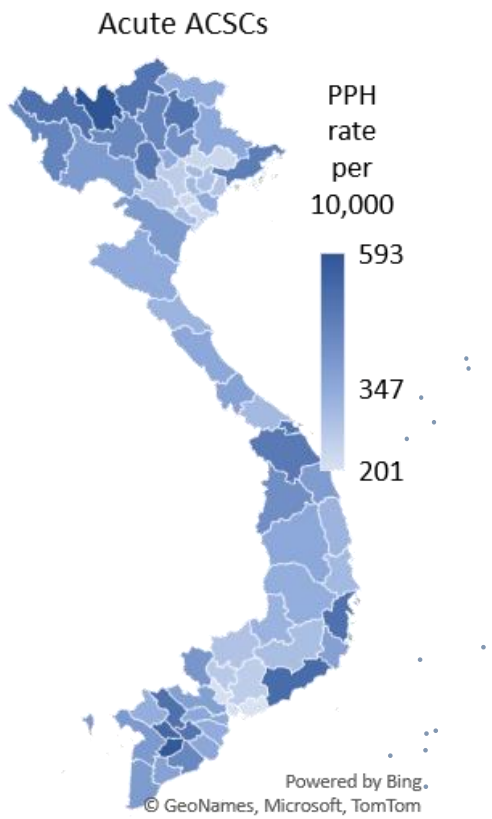
ASIA & THE PACIFIC HEALTH FINANCING FORUM 2022

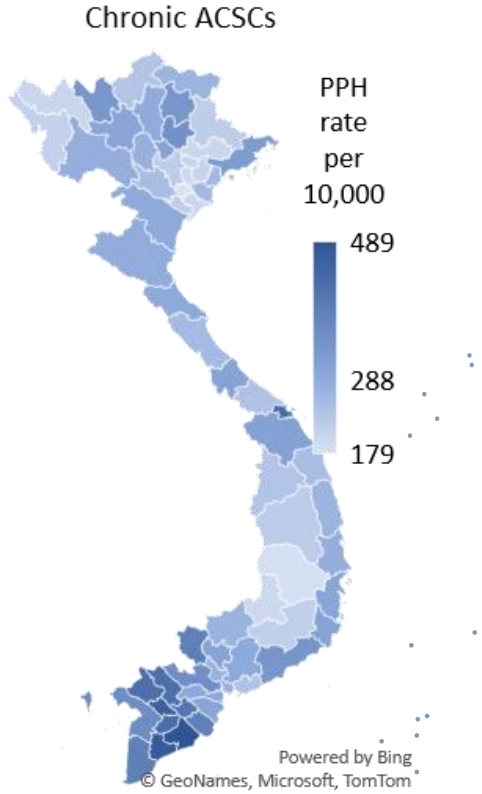
Potential for provincial-level KPI and benchmarking of PPH rates

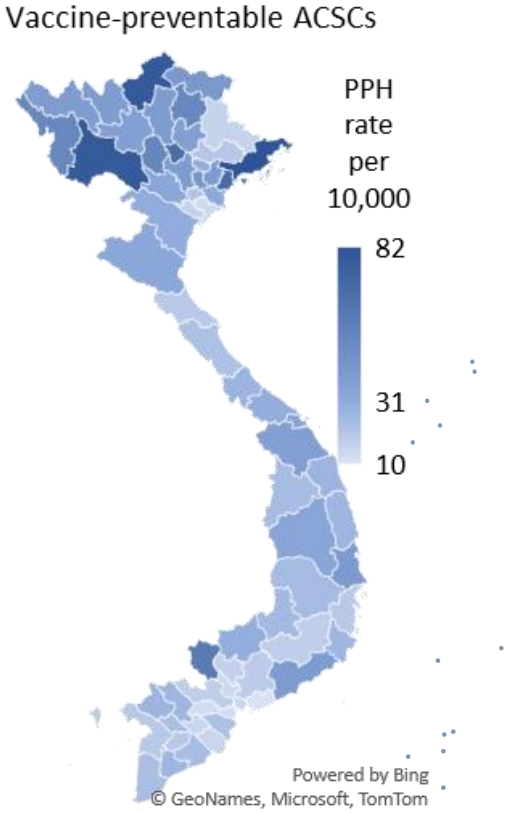
Analysis by province of residence of the insured members allows us to assess performance of provincial PHC services and identify provinces that may need extra support (or pressure) to strengthen PHC.

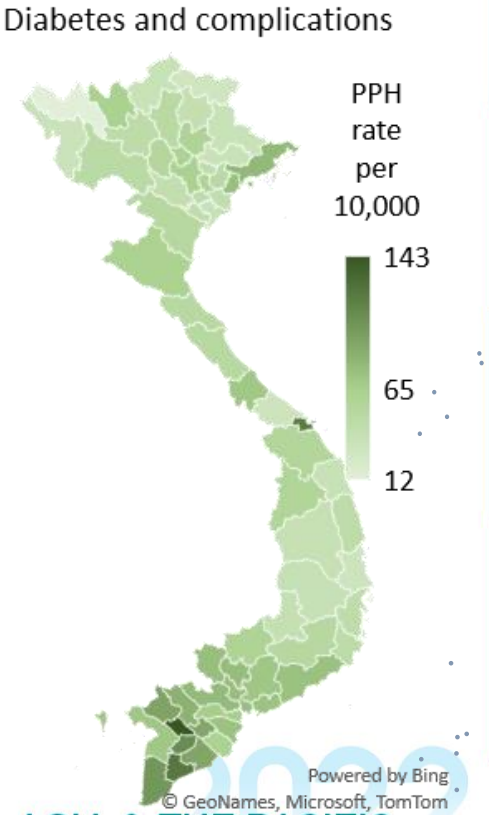


Provincial benchmarking can also be done by ACSC category or even individual condition





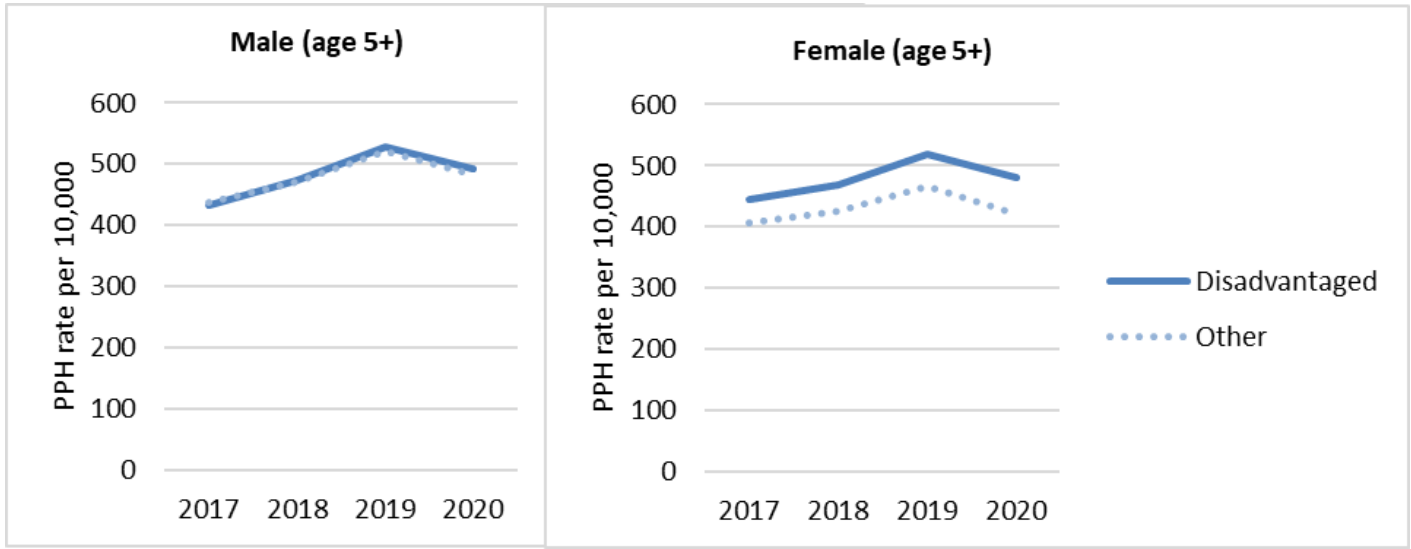




ASIA & THE PACIFIC HEALTH FINANCING FORUM

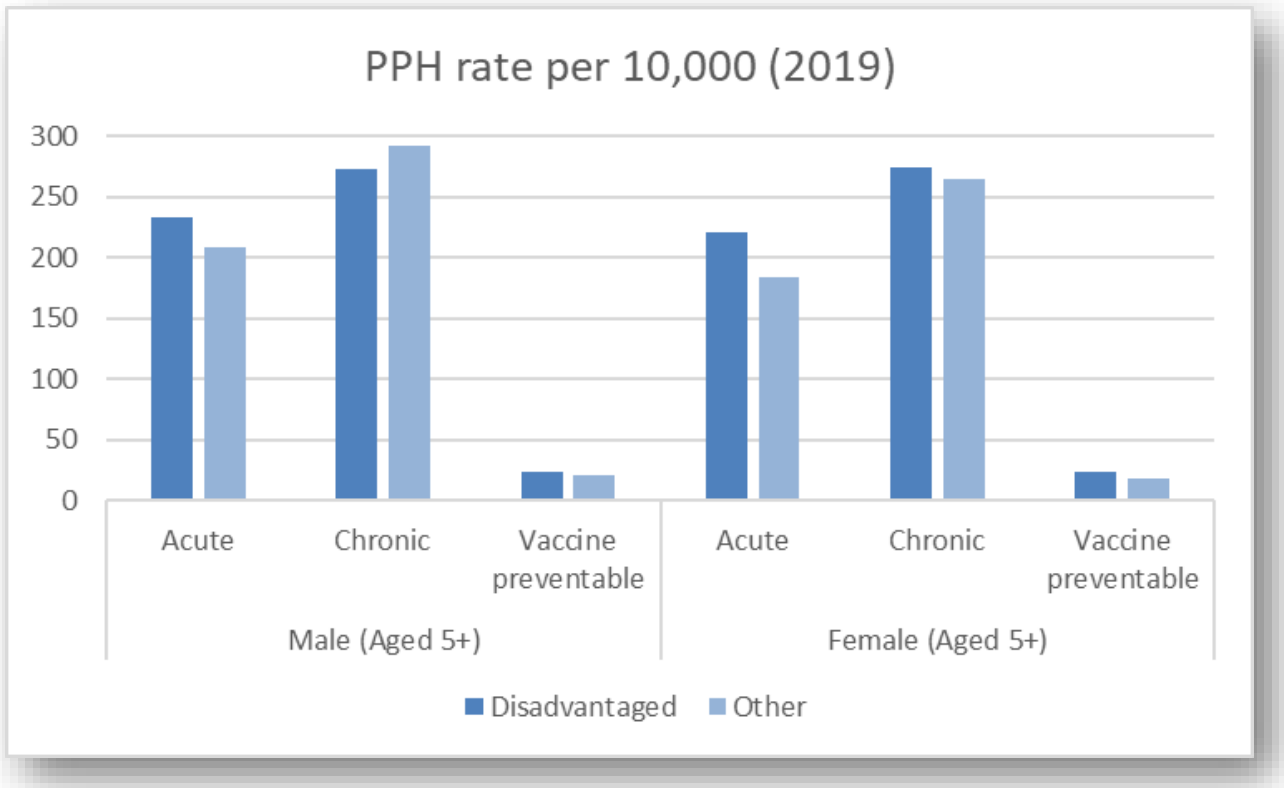
Disadvantaged women (aged 5+) have higher PPH rates

Equity analysis of PPH in other countries has helped to identify remote localities and vulnerable groups where PPH rates are highest, helping to focus resources to resolve these PHC priorities.



In Vietnam, among males, there is little difference in PPH rates between disadvantaged and other groups. However, PPH rates are higher among disadvantaged females than the other groups.

Analysis by disadvantaged groups suggests the need to target improved PHC to disadvantaged groups



- Among women, PPH rates are higher for the disadvantaged group for acute, chronic and vaccine preventable conditions.
- Among men, PPH rates are higher for the disadvantaged group for acute and vaccine preventable conditions, but lower PPH rates for the chronic group.

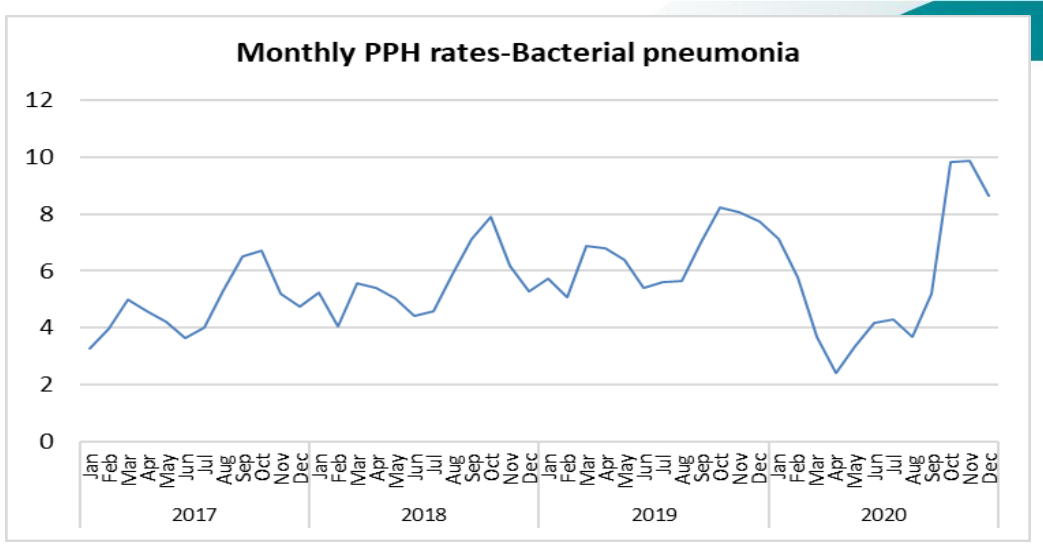
Note: Analysis is limited to cases aged 5+ due to children under age 6 not classified into disadvantaged and other groups.

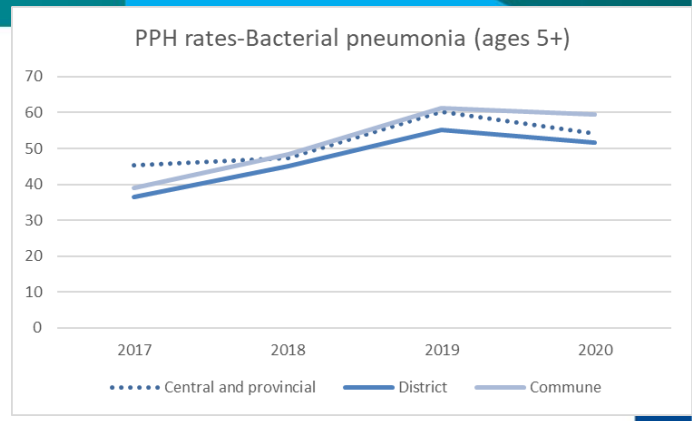
Dashboards for individual ACSCs

Potential for highly granular policy advice

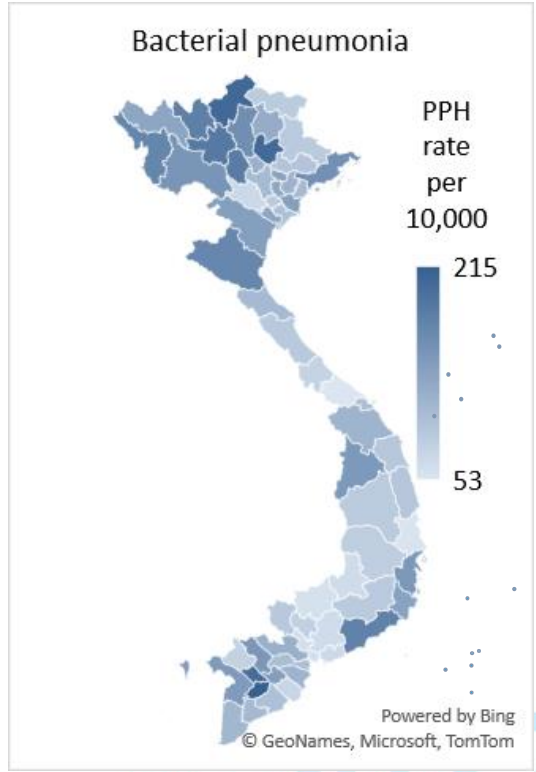
2022
ASIA & THE PACIFIC
HEALTH FINANCING
FORUM

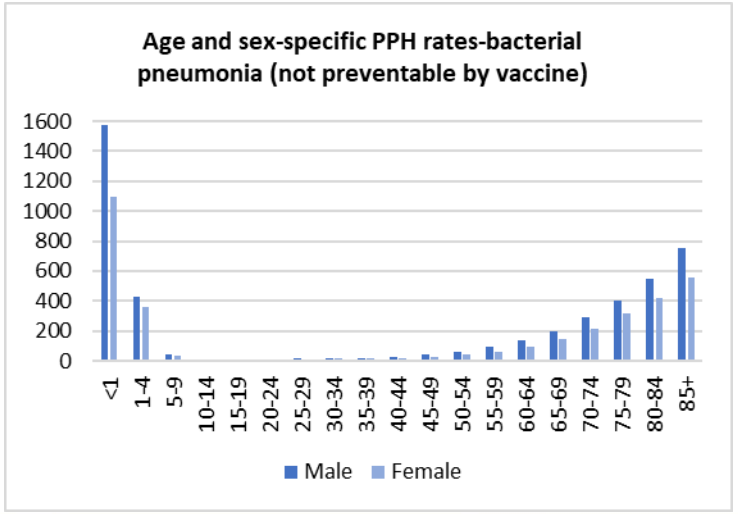
Bacterial pneumonia (not vaccine preventable)

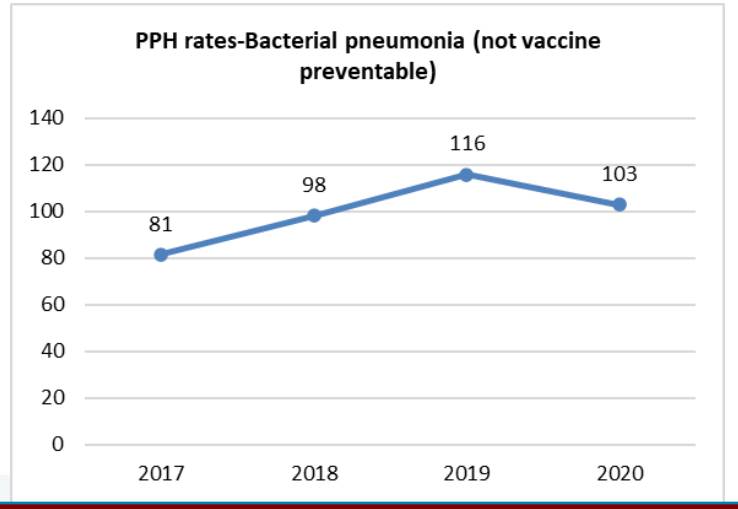




Total PPHs	Total inpatient days	Total SHI payments (billion VND)	Total patient payments (billion VND)
945,535	7,280,558	4557	445

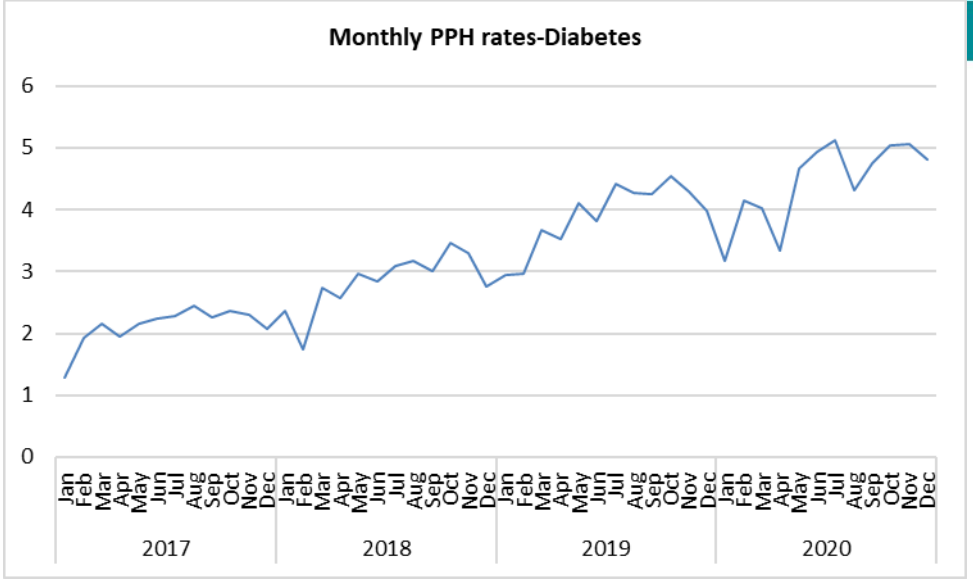


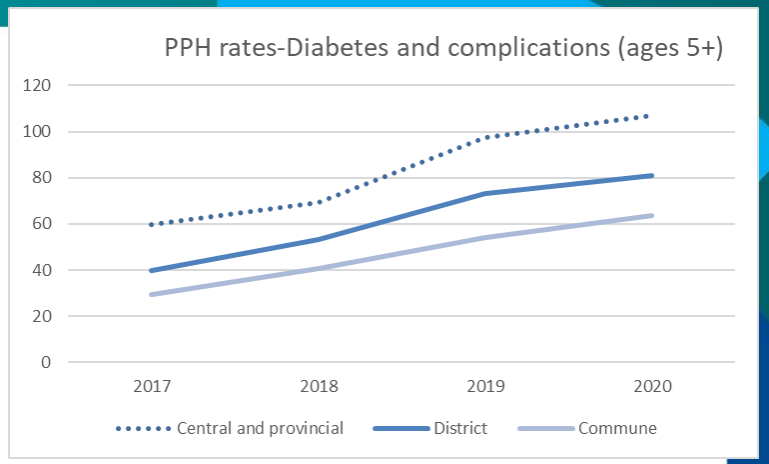




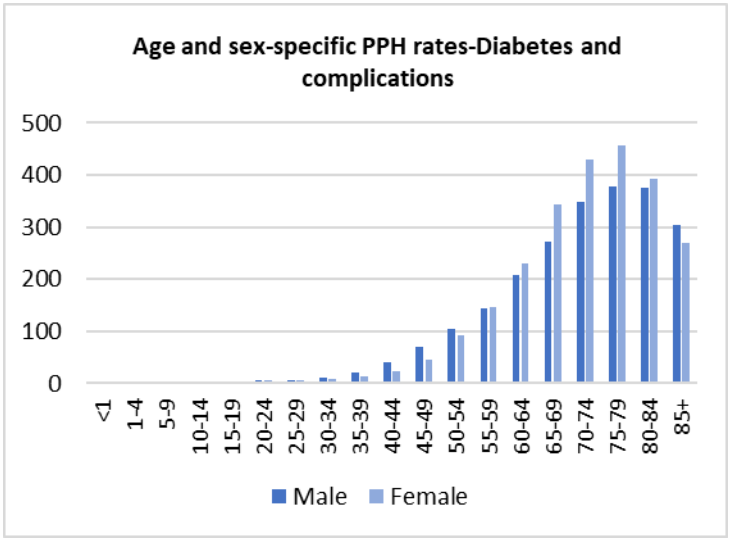
ASIA & THE PACIFIC HEALTH FINANCING FORUM

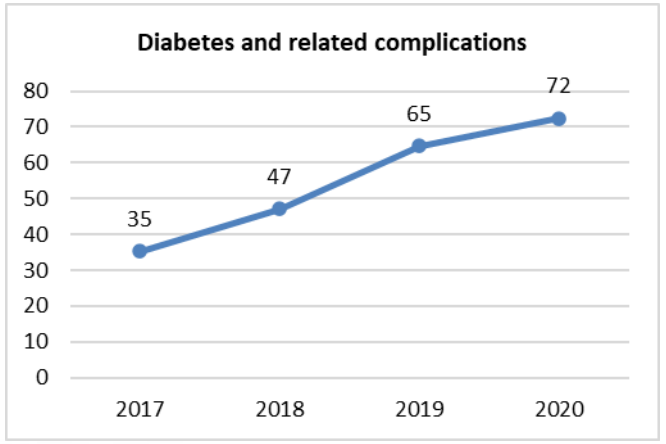
Diabetes and complications

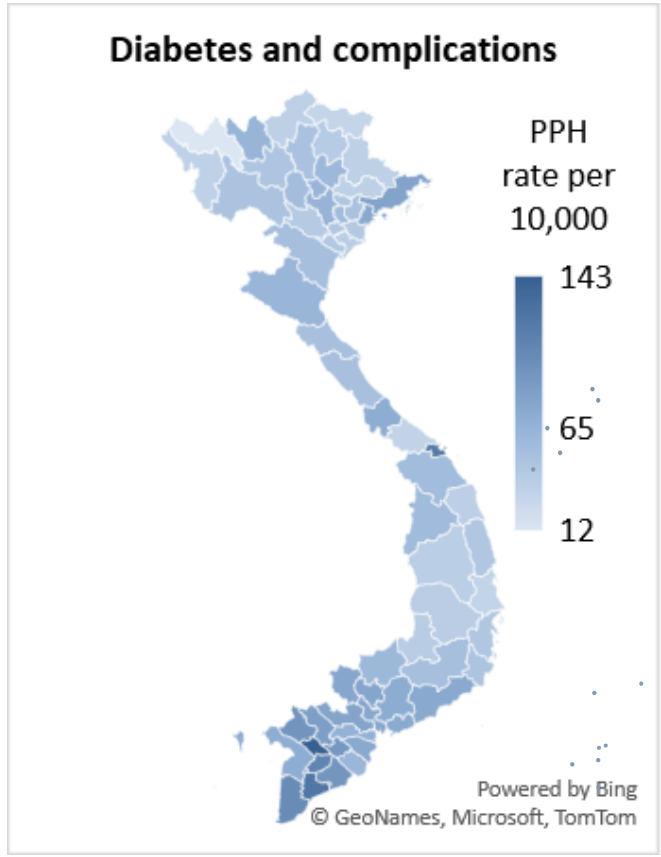




Total PPHs	Total inpatient days	Total SHI payments (billion VND)	Total patient payments (billion VND)
529,779	4,191,798	2771	415







Conclusions

- In Vietnam, VSS agrees on the importance of routinely calculating PPH rates.
- The cost of calculating PPH rates is low because it relies on existing administrative data.
- Results can be incorporated into the health system performance monitoring framework, specifically to monitor performance of provinces (or even districts) on outcomes, rather than just inputs.
- Results can help in prioritizing diagnoses for action at the PHC level
- Results can be useful for targeting interventions for each specific ACSC by age, sex, province, month, disadvantaged groups and type of facility where registered for primary care
- Further engagement with clinicians is required to more effectively use results of this analysis.

Thank You!

Research team

Sarah Bales, *World Bank consultant*

Dao Lan Huong, *World Bank-Vietnam*

Nguyễn Thị Thùy Duyên, *Hanoi University of Public Health*

Trần Tiến Hưng, *Vietnam Social Security*

2022 ASIA & THE PACIFIC HEALTH FINANCING FORUM

Analyzing Hospitalizations for Ambulatory-Care Sensitive Conditions

The Brazilian Experience

THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP

Summary

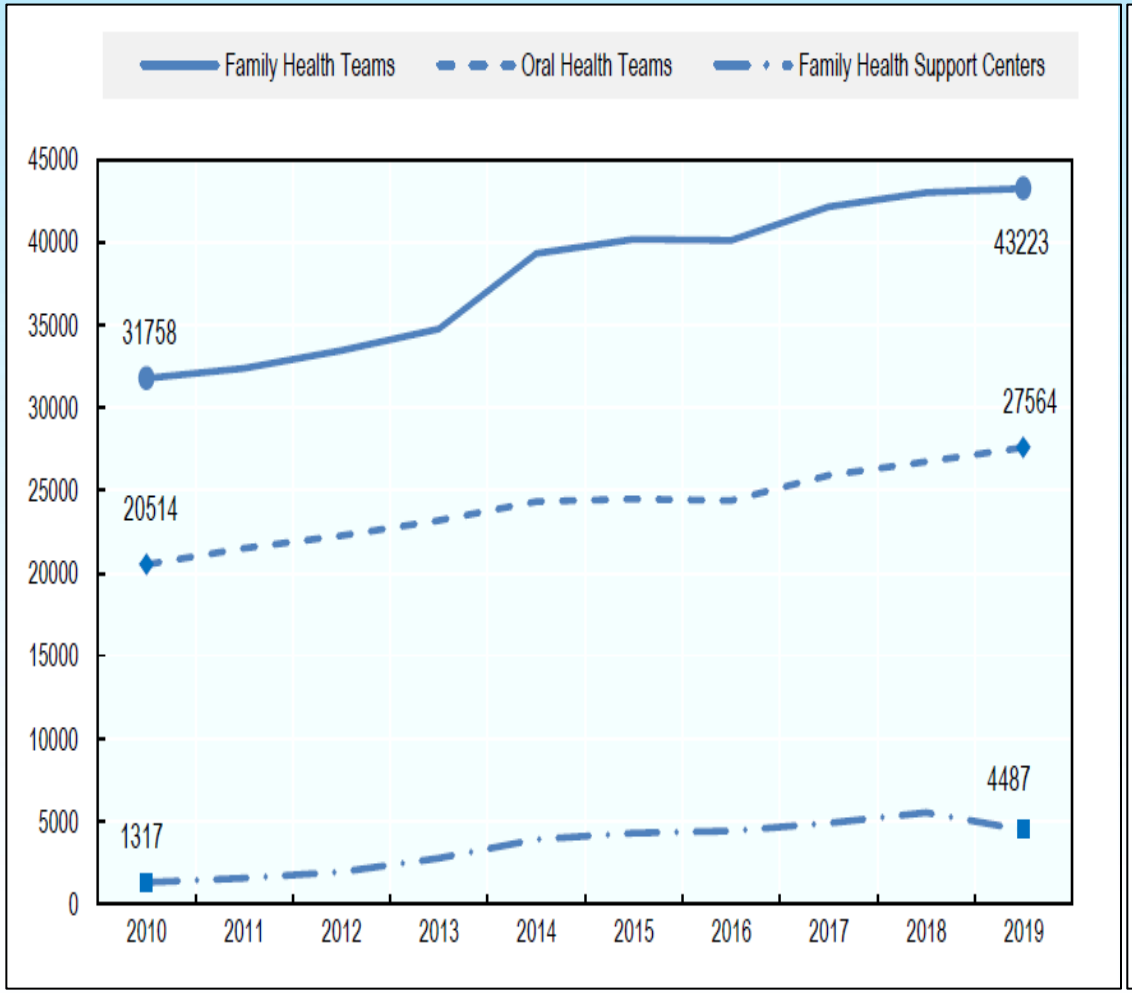
1. The Brazilian Family Health Strategy (FHS)
2. FHS and ACSC: a summary of the evidence
3. ACSC to incentivize PHC performance

Brazil's Public PHC Network

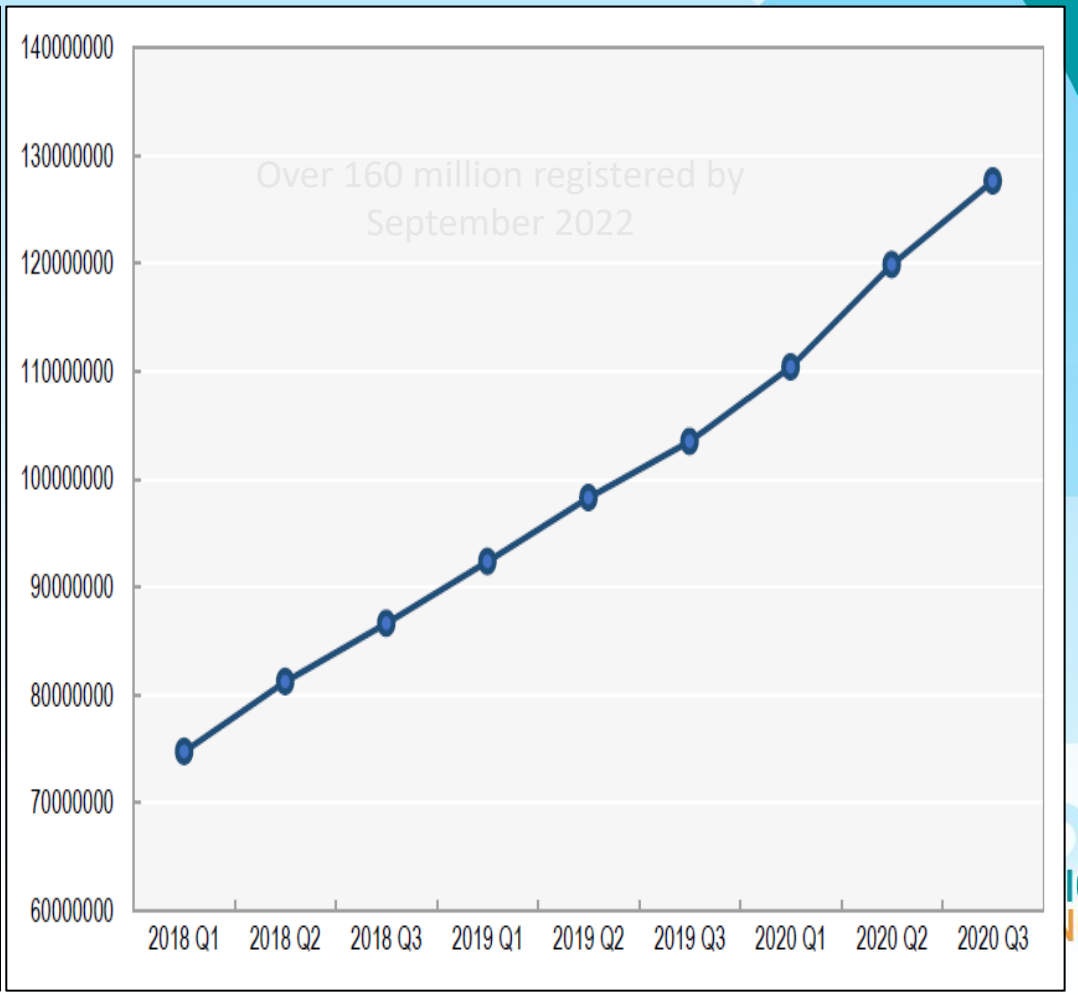
- **The Brazilian SUS offers preventive services and PHC free of charge to its population**
- **The MoH is responsible for the central management of the health system, and the 5570 municipalities are responsible for the organization, management and delivery of PHC services**
- **Multi-professional family health teams (FHTs) are responsible for the delivery of PHC, each assigned to a geographic area and covering up to 4 000 individuals**
- **The FHT includes physicians, nurses, and up to 12 community health workers (plus other PHC workers depending on local needs)**
- **FHTs are expected to be the initial contact point to access SUS services (but does not work as a "gatekeeper")**

Over the past two decades, reforms have sought to expand SUS PHC network

Number of FHTs



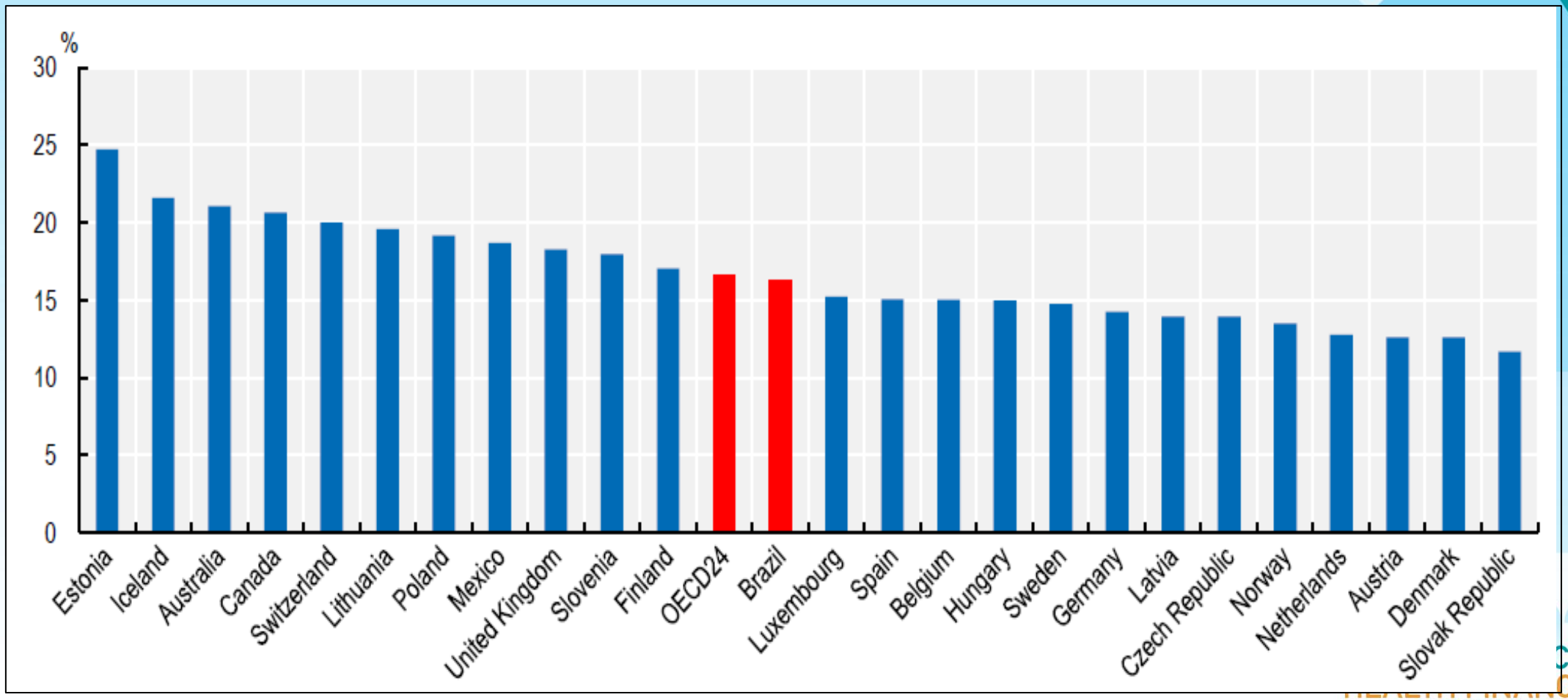
Number of people registered with a FHT



Source: OCDE, 2021.

SUS PHC spending is higher than many OECD countries

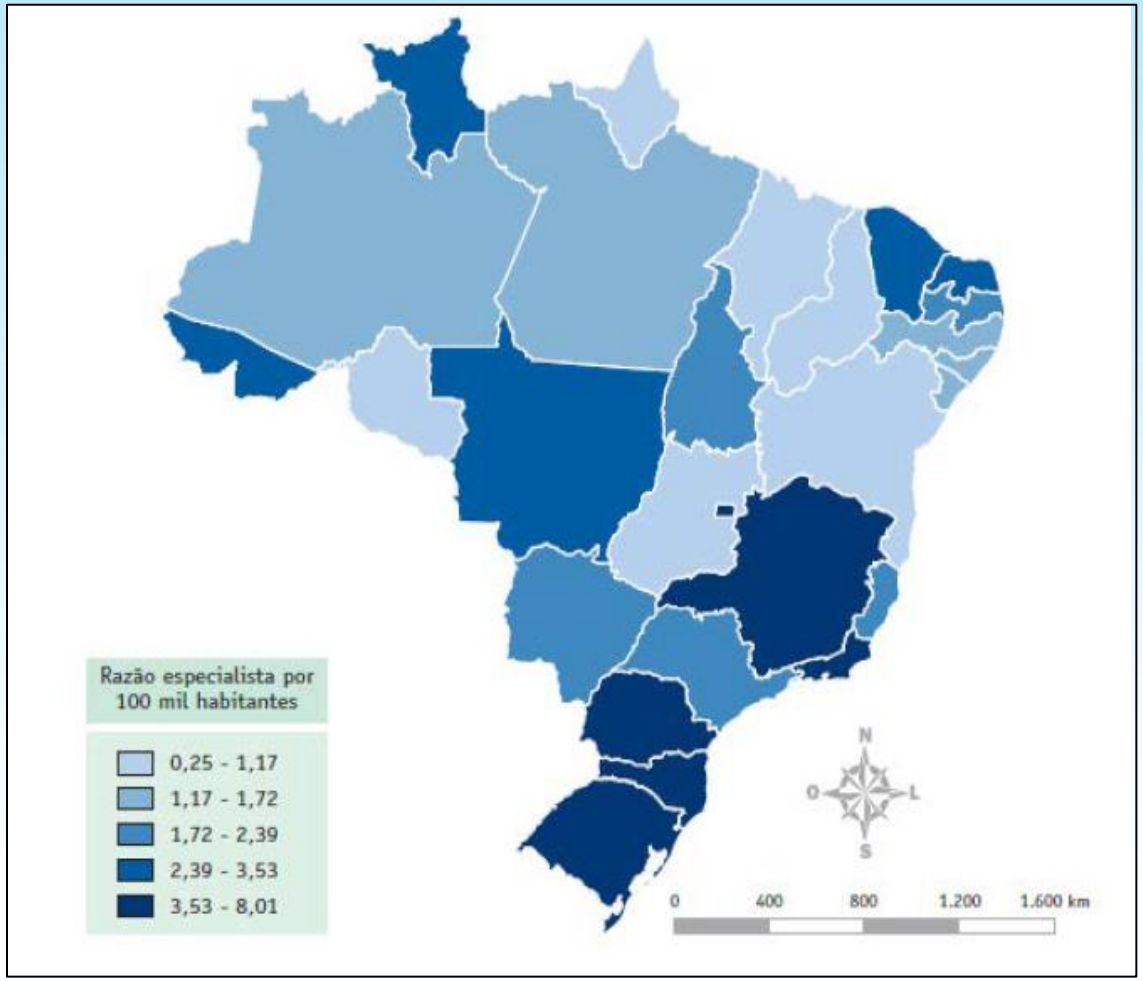
Spending in PHC as a share of current health spending, 2019 or nearest year



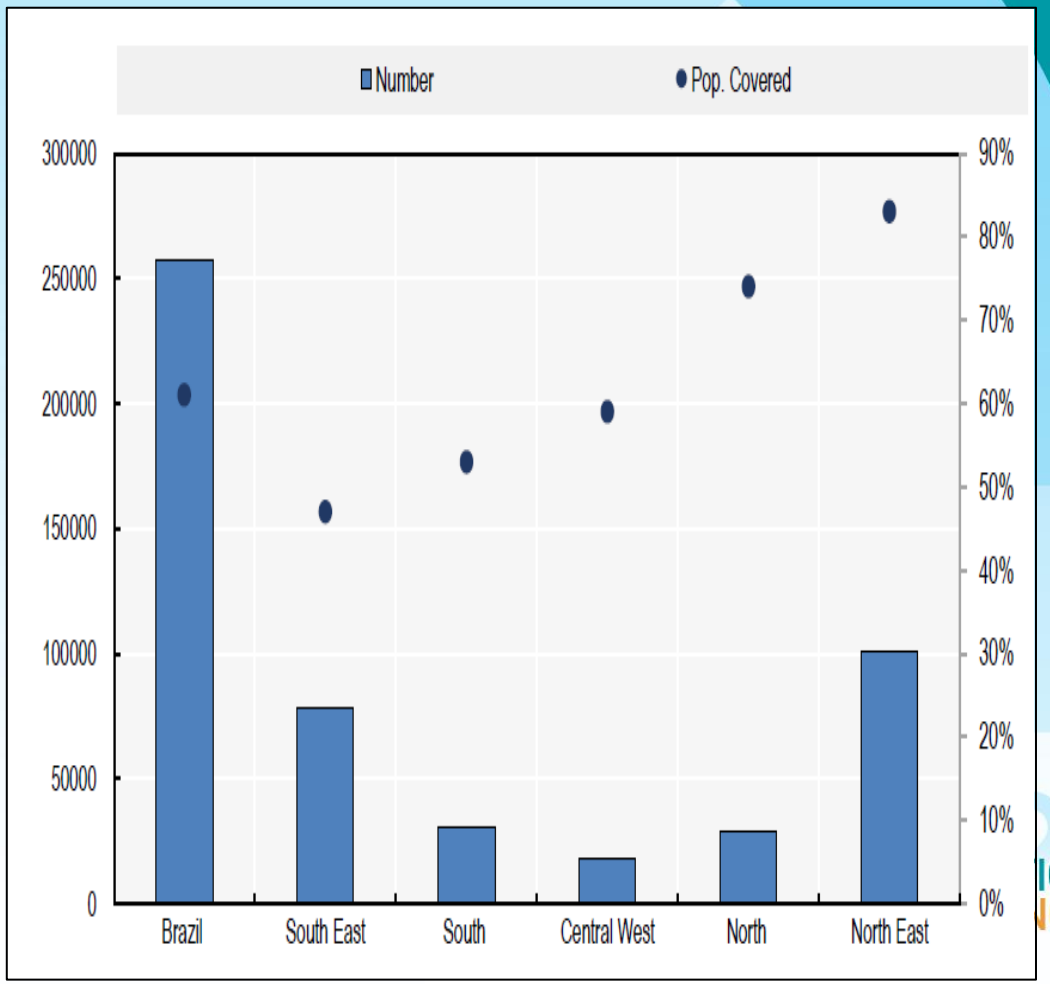
Source: OCDE, 2021.

Regional differences in the distribution PHC workforce, particularly physicians, is a challenge affecting PHC performance across states and regions

Distribution of family and community specialists per states



Number of community health workers by regions



Source: OCDE, 2021.

Summary

1. **The Brazilian Family Health Strategy (FHS)**

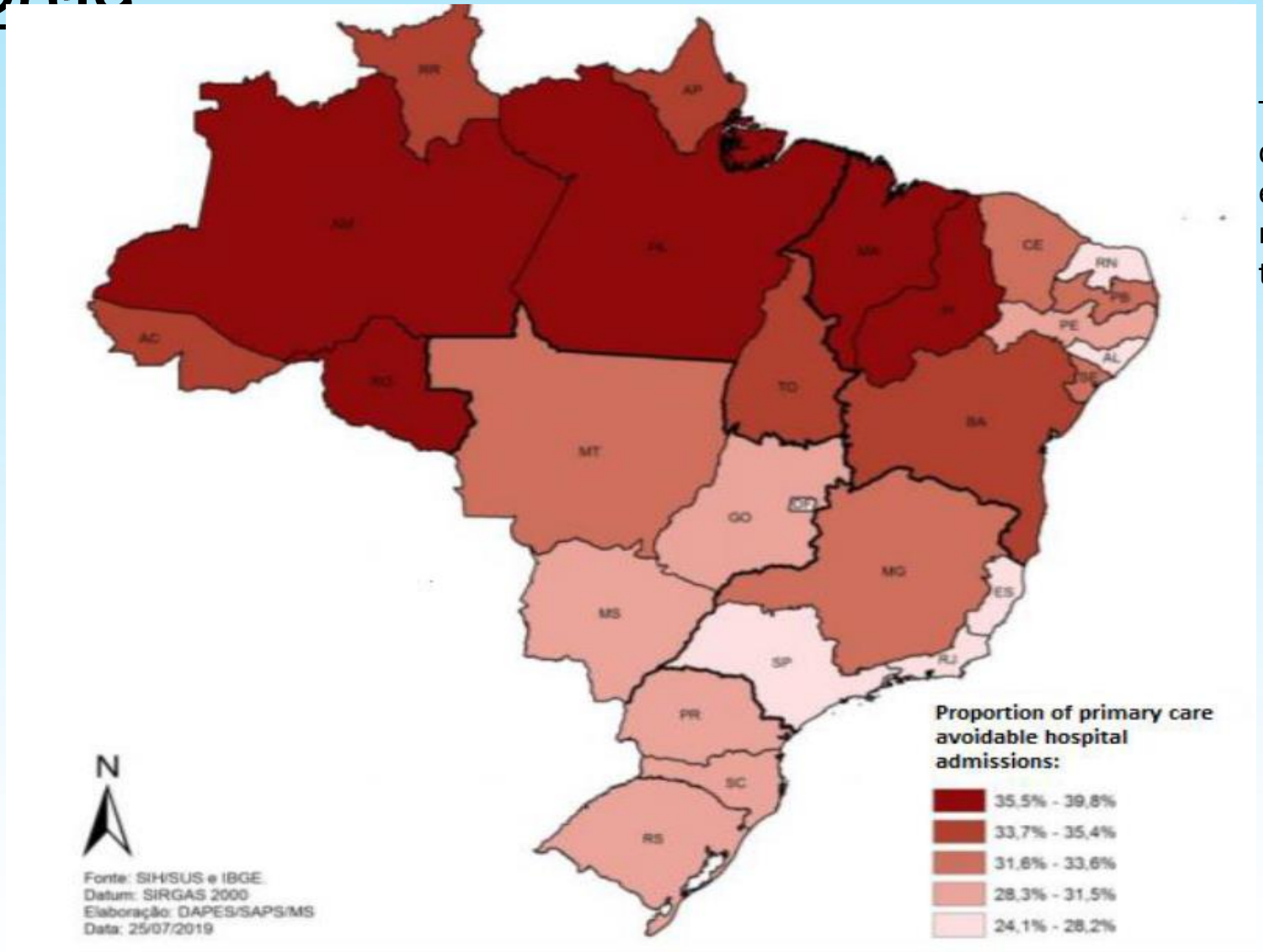
2. **FHS and ACSC: a summary of the evidence**

3. **ACSC to incentivize PHC performance**

The Brazilian list of ambulatory care sensitive conditions (ACSCs) by groups of diagnosis according to the International Classification of Diseases (ICD-10)

Group of diagnosis	ICD-10
Preventable diseases by immunization and avoidable conditions	A15.0-A15.3, A15.4-A15.9, A16.0-A16.2, A16.3-A16.9, A17.0, A17.1-A17.9, A18, A19, A33-A35, A36, A37, A51-A53, A95, B05, B06, B16, B26, B50-B54, B77, G00.0, I00-I02
Infectious gastroenteritis and complications	A00-A09, E86
Iron deficiency anaemia	D50
Nutritional deficiency	E40-E46, E50-E64
Ear, nose and throat infections	H66, J00, J01, J02, J03, J06, J31
Bacterial pneumonia	J13, J14, J15.3, J15.4, J15.8, J15.9, J18.1
Asthma	J45, J46
Lung diseases	J20, J21, J40, J41, J42, J43, J44, J47
Hypertension	I10, I11
Angina pectoris	I20
Heart failure	I50, J81
Cerebrovascular diseases	I63-I67, I69, G45-G46
Diabetes mellitus	E10.0, E10.1, E11.0, E11.1, E12.0, E12.1, E13.0, E13.1, E14.0, E14.1, E10.9, E11.9, E12.9, E13.9 E14.9, E10.2-E10.8, E11.2-E11.8, E12.2-E12.8, E13.2-E13.8, E14.2-E14.8
Epilepsy	G40, G41
Kidney and urinary tract infection	N10, N11, N12, N30, N34, N39.0
Infections of the skin and subcutaneous tissue	A46, L01, L02, L03, L04, L08
Inflammatory diseases of female pelvic organs	N70, N71, N72, N73, N75, N76
Gastric ulcer	K25-K28, K92.0, K92.1, K92.2
Prenatal and childbirth-related diseases	O23, A50, P35.0

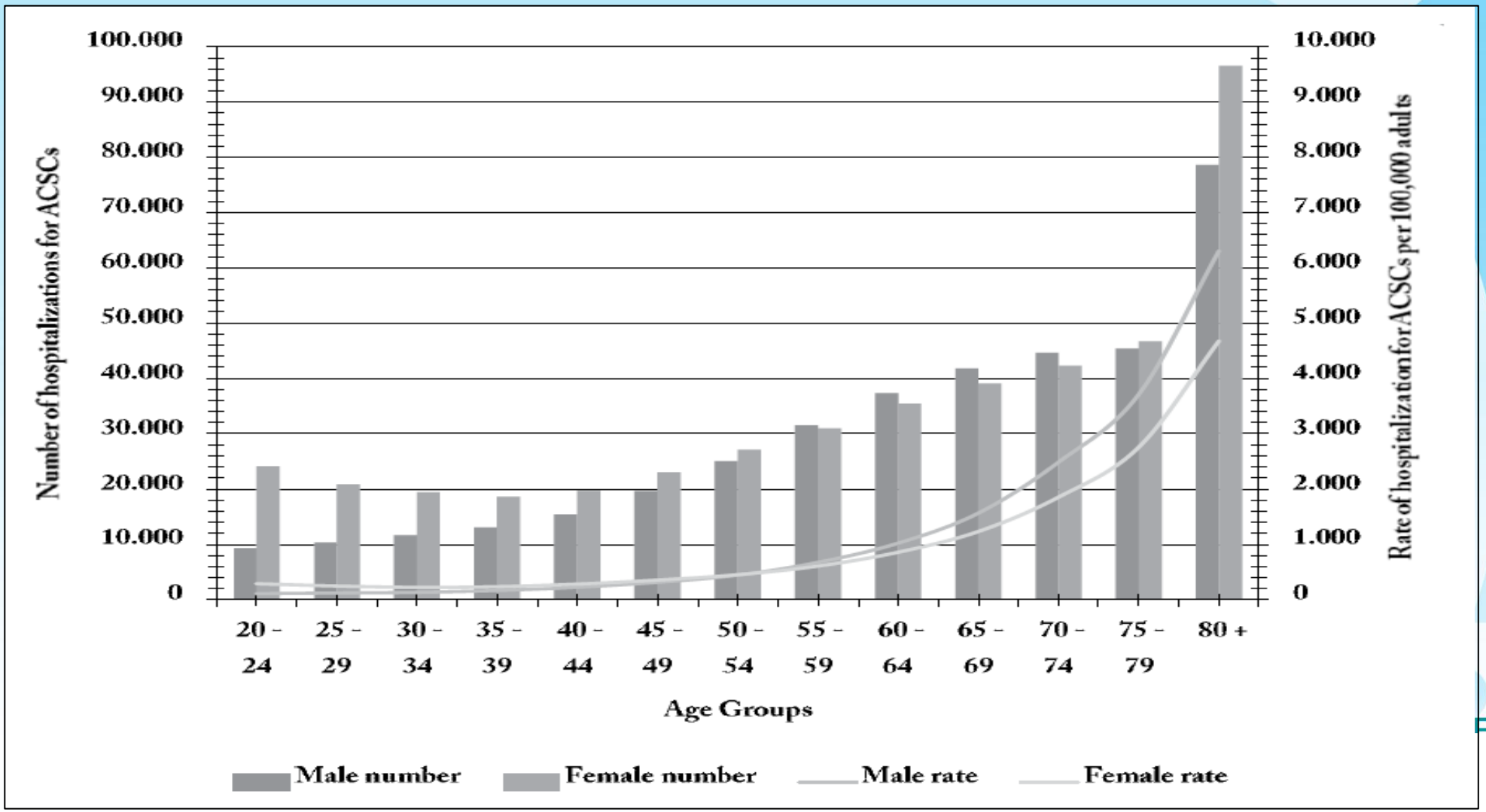
Share of hospital admissions due to conditions that are treatable in PHC, population aged 60 or more by region, 2019



The proportion of hospitalizations due to conditions that could be more effectively treated in the PHC setting ranges from 24% in the South region to 40% in the North region

Potentially avoidable hospitalizations were concentrated among older age groups (~52%) and among females (65%)

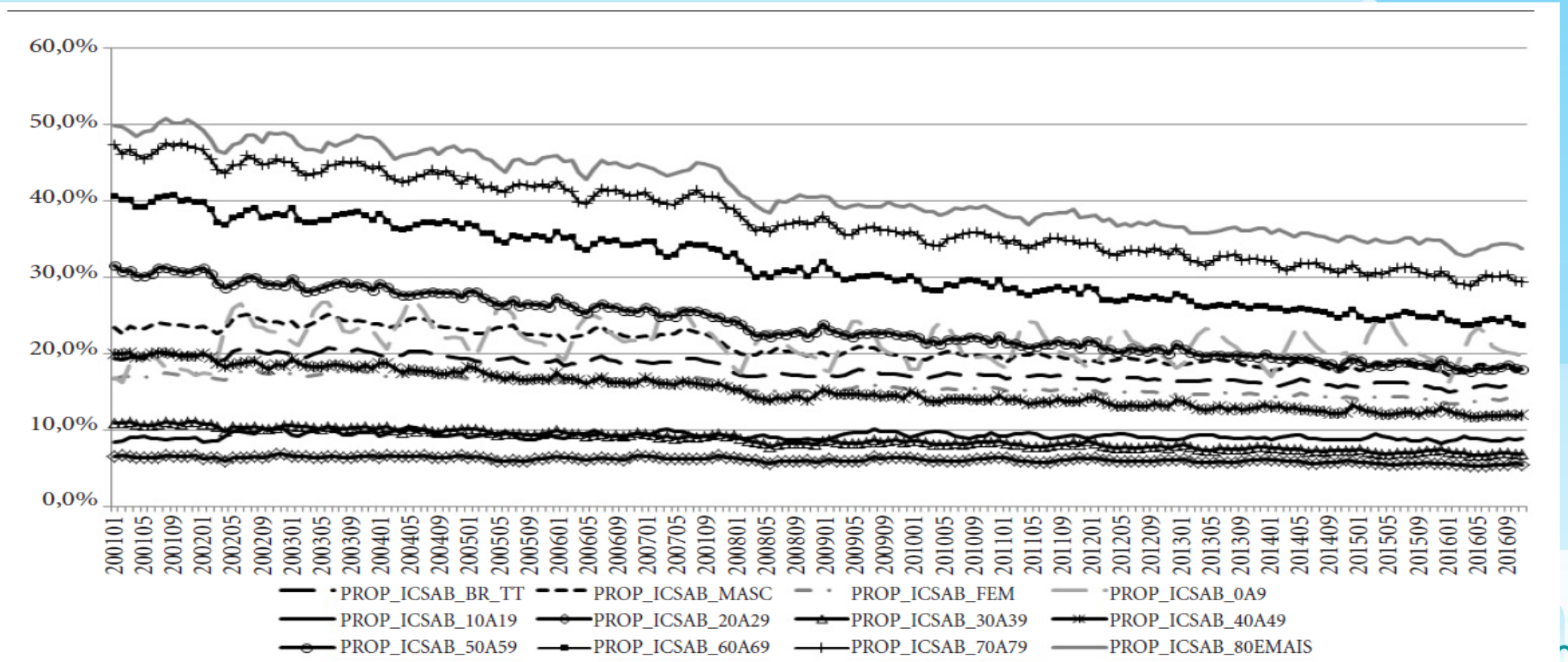
Age and sex distribution and rates of patients admitted for ACSCs, Brazil 2015



Source: Rocha et al (2019)

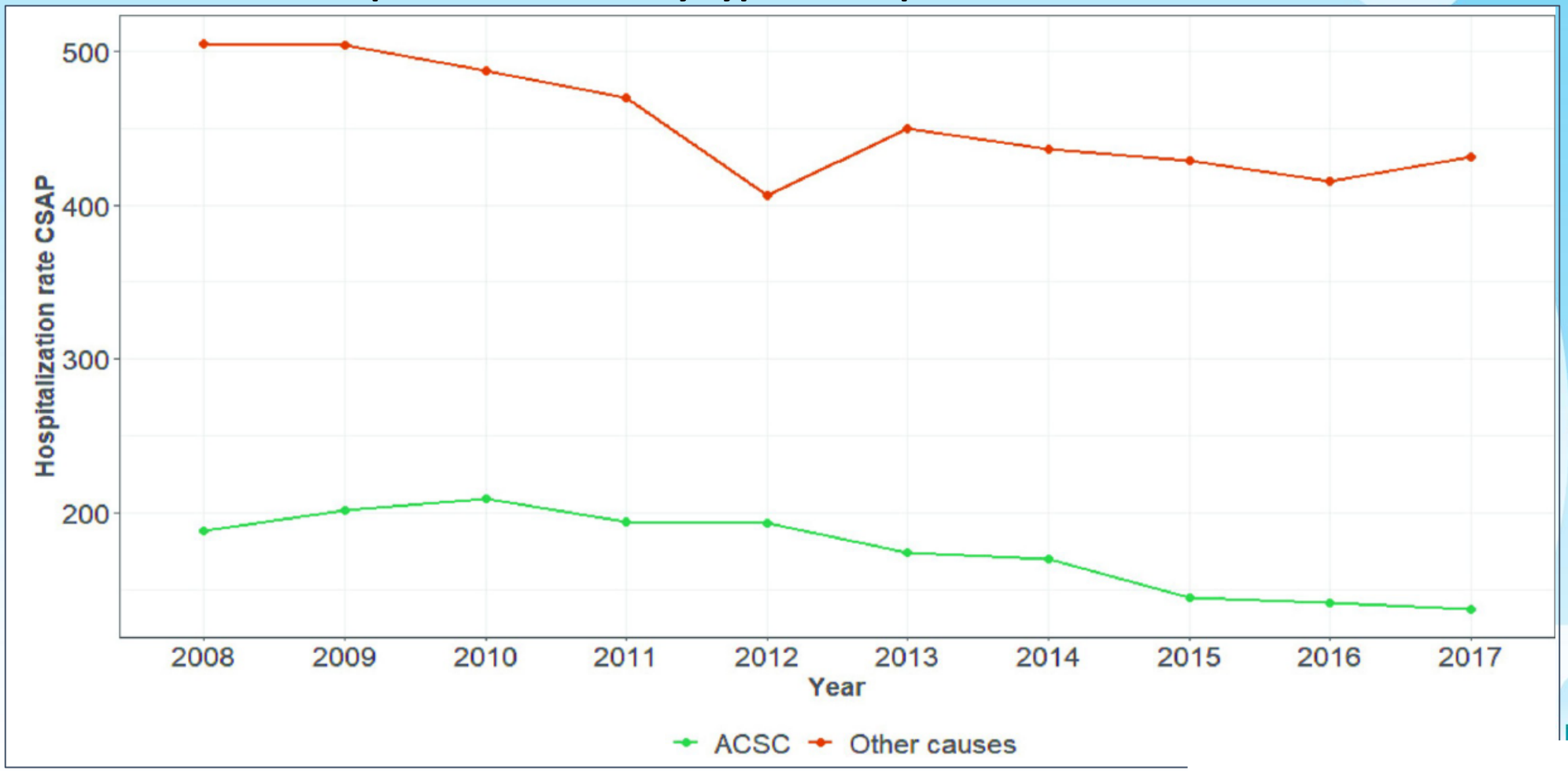
In Brazil, the historical trend in the period 2001-2016 indicates a reduction in the standardized rate of hospitalizations due to ACSCs (a 45% reduction)

Monthly evolution of the proportion of hospitalizations due to ambulatory care sensitive conditions(ACSC) by gender and age groups, Brazil (2001-2016).

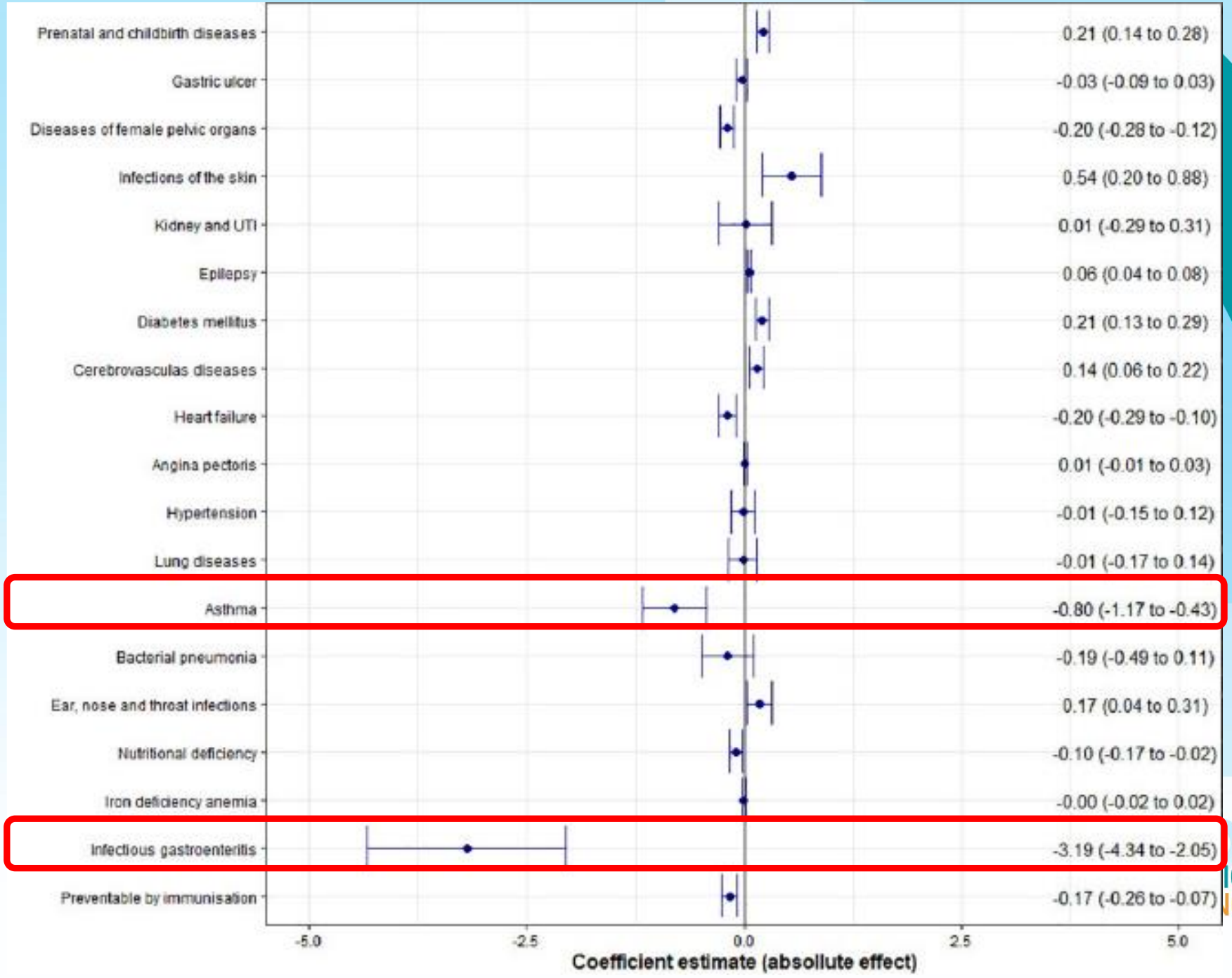


Carneiro et al (2021) shows a significant reduction in preventable hospitalization associated with a greater than 40% expansion of FHS coverage in the state of Para

Evolution of the hospitalization rate by type of hospitalization in Para, 2008–2017

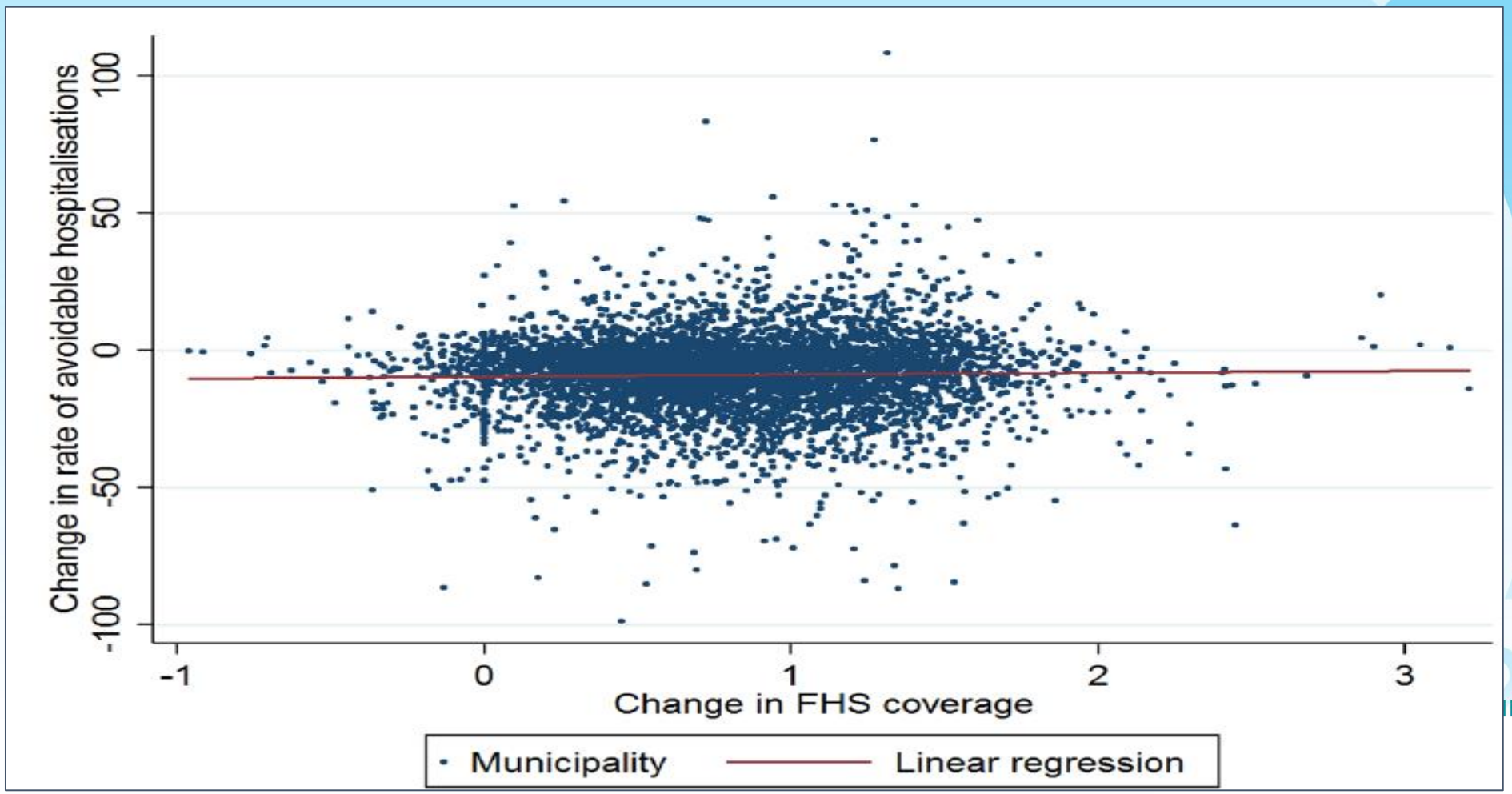


Effect of the FHS on preventable hospitalizations by disease class



Silva and Powell-Jackson (2017) found that FHS did not reduce avoidable admissions but rather had a small positive effect, with estimates showing a 0.6 increase in the number of avoidable admissions per 1000 capita

Change in Family Health Strategy (FHS) coverage against change in ACSC



Evidence is mixed, but overall positive effects of PHC expansion and improved access to services and health outcomes

- **Greater case detection and diagnosis, ensuring patients enter the public health care system, may have worked against any potential reduction in avoidable hospitalizations**

- **Reducing ACSC is NOT the aim of the FHS, not reflected in the current incentives (payment system)**

- **Evidence shows the importance of improving efficiency of PHC service provision accompanied with greater focus on integration of care (access to specialist care)**

Summary

1. **The Brazilian Family Health Strategy (FHS)**

2. **FHS and ACSC: a summary of the evidence**

3. **ACSC to incentivize PHC performance**

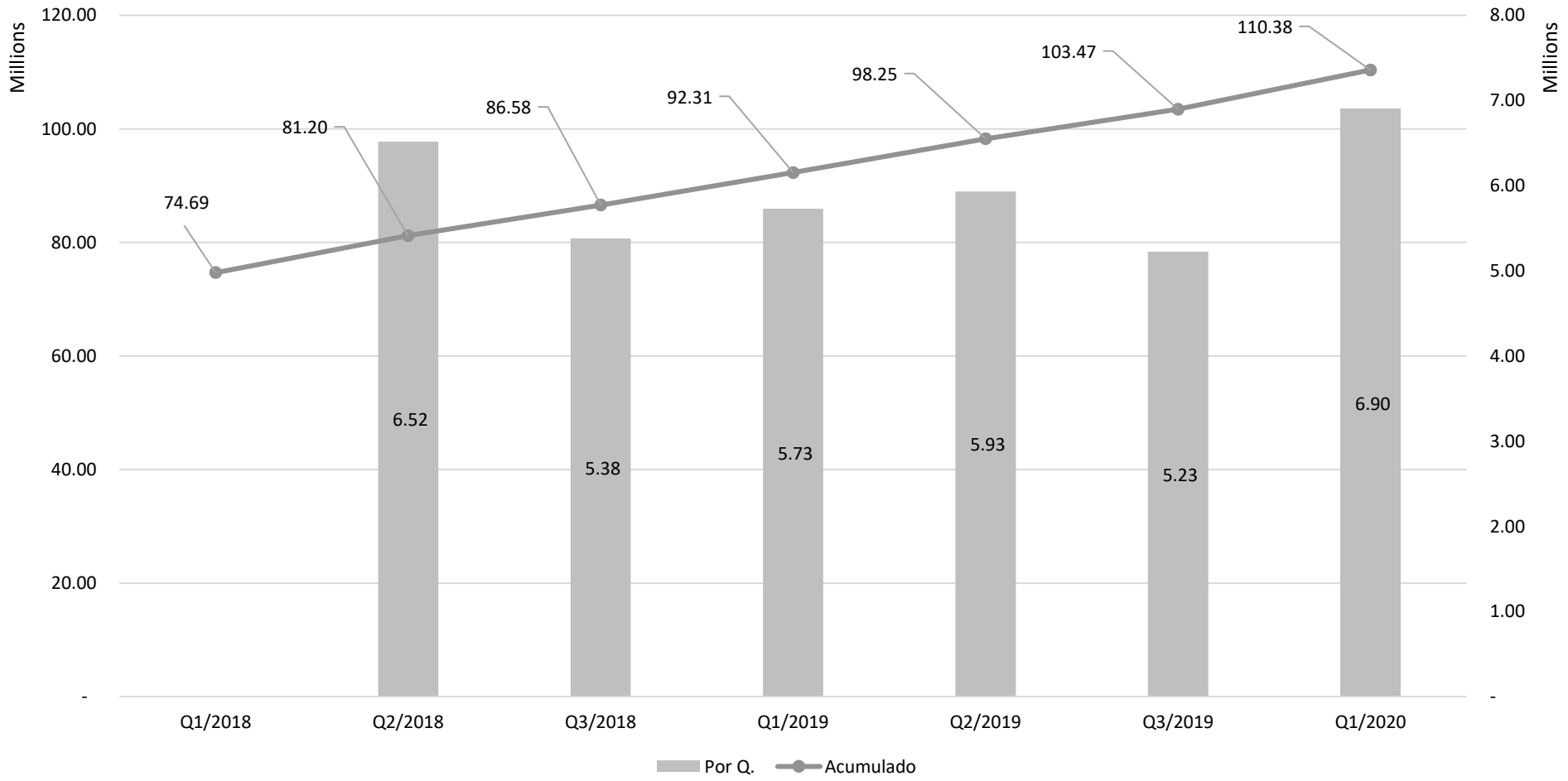
PHC financing reform introduced a new P4P programme

Targets and weights assigned for each performance indicator, 2020

	Domains and indicators	Overall targets	Targets for 2020	Weights
Women health	Share of pregnant women with 6 or more prenatal consultations in the first 20 weeks of pregnancy	>=80%	60%	1
	Share of pregnant women with tests for syphilis and HIV carried out	>=95%	60%	1
	Share of pregnant women with dental examination	>=90%	60%	2
	Pap smear test carried out to detect cervical cancer	>=80%	40%	1
Care for children	Coverage of inactive polio and pentavalent vaccines	>=95%	95%	2
Care for chronic diseases	Share of patients diagnosed with hypertension which have their blood pressure measured every 6 months	>=90%	50%	2
	Share of patients with diagnosed diabetes with controlled haemoglobin level.	>=90%	50%	1

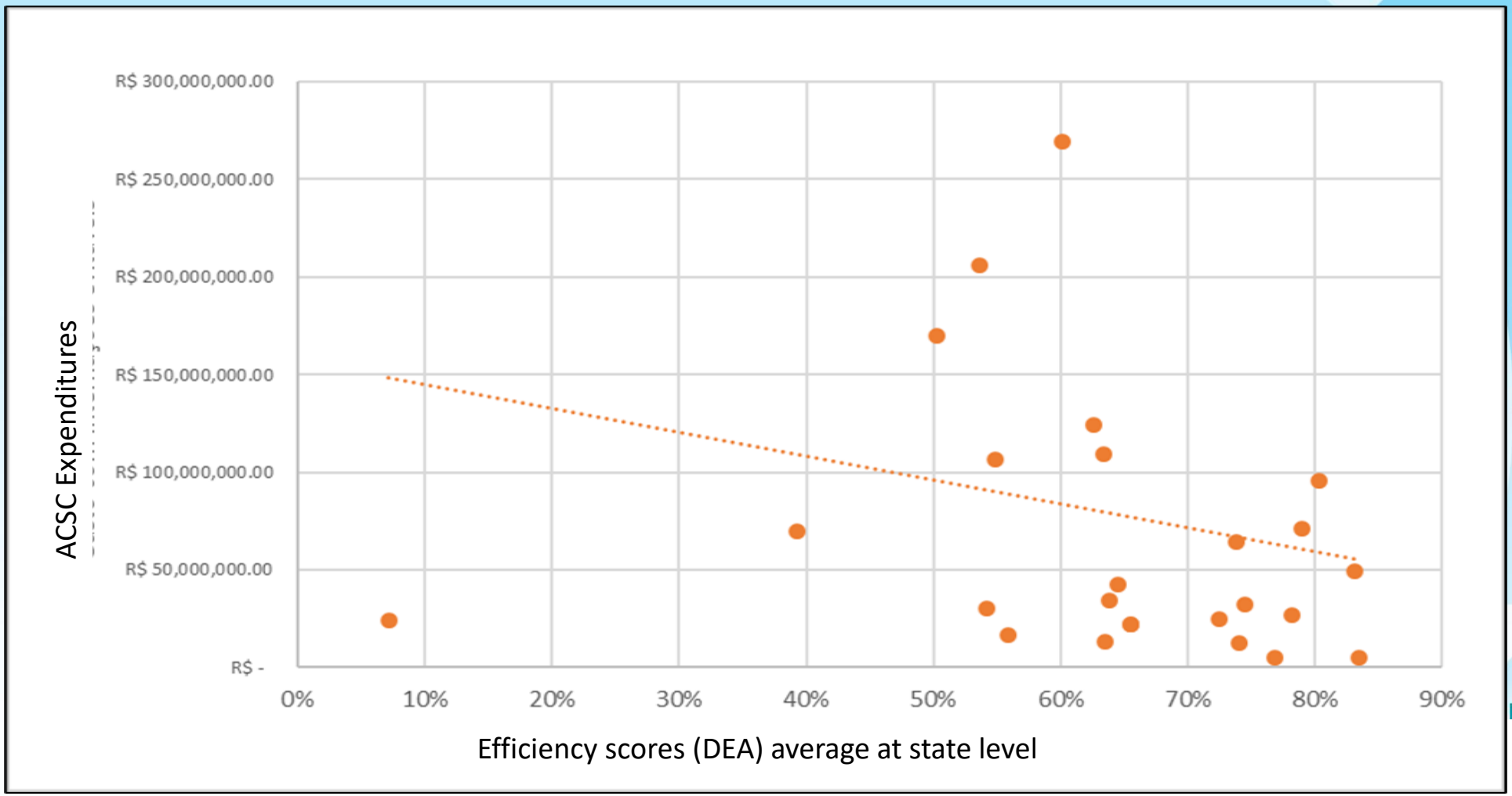
New funding model included weighted capitation, which boosted PHC enrollment in the last three years

- Approximately 20 million new enrollment with PHC teams since program was approved
- Focus on the poor (BF), elderly and children



Possibly reverting to PHC a share of the cost savings from the potential reduction in ASCS to PHC (USD500 million a year within SUS)

PHC efficiency and ASCS expenditures



Key Takeaways

- Both SAR & EAP regions are undergoing rapid demographic and epidemiological transition with increasing burden of NCDs. While the regions need to strengthen health systems to provide service coverage for NCDs, greater investments for improving frontline/primary care services is critical not only from a clinical perspective but also from an economic perspective.

- Existing evidence suggests nearly 5-20% of all hospitalizations are potentially preventable due to ACSCs and there is a direct relationship between Quality of Primary healthcare and preventable hospitalizations. Associated cost-savings have made it even more imperative to understand the magnitude of ACSCs.

- ACSC hospitalizations can provide a complementary way to assessing potential weaknesses in health systems.
  - Estimates can be calculated using readily available hospital administrative data;
  - Can be used to provide a window into the community: to identify unmet community heath care needs, to monitor how well complications from a number of common conditions are being avoided in the primary care setting, and to compare performance of local health care systems across communities;
  - Potential to exploit this as a way to understand system challenges, as long as appropriately contextualized within country context.

ASIA & THE PACIFIC HEALTH FINANCING FORUM

Annex

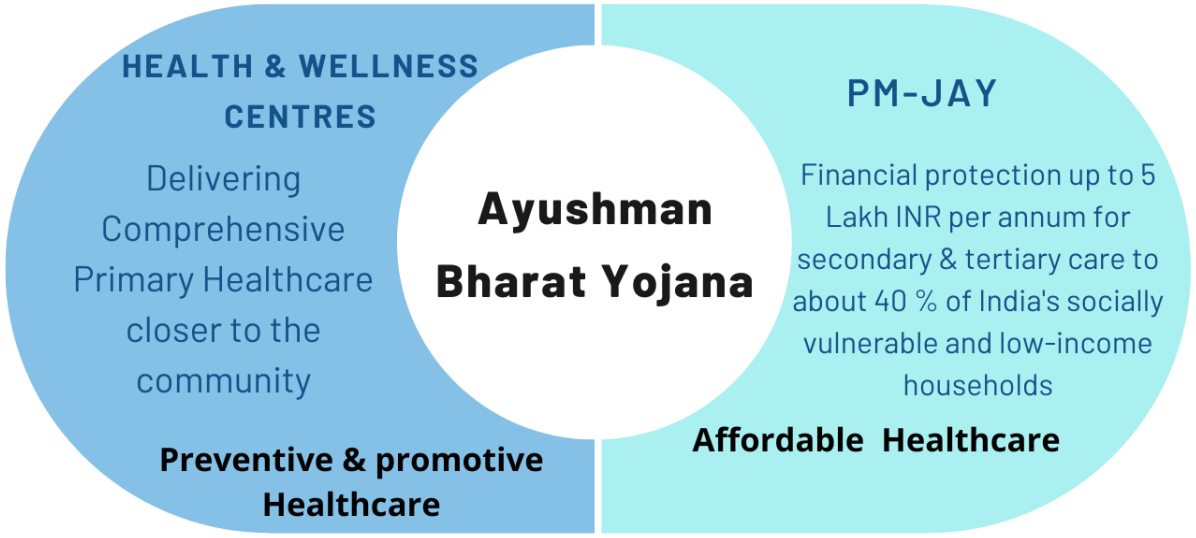
Financing Primary Health Care: Opportunities at the Boundaries

September 15-16, 2022
Bangkok, Thailand

Co-hosted by: WORLD BANK GROUP, Australian Aid, GLOBAL FINANCING FACILITY, USAID FROM THE AMERICAN PEOPLE

Supported by: The Global Fund, Joint Learning Network, Gavi The Vaccine Alliance, Bill & Melinda Gates foundation

Ayushman Bharat – "Long Live India" – Reforms & Potential for identifying ACSC-PPH



From scheme to systems – Ayushman Bharat focuses on Continuum of Care

Referral & Return Linkages between AB-HWCs & PM-JAY

1. From AB-HWCs, patients referred to FRUs of PHI-CH/SDH/DH/MC
2. CHC/DH to inform patients about options available for secondary & tertiary care at public facilities & PM-JAY empanelled hospitals
3. Sharing of patients' information on discharge electronically with CMHOs
4. Patients discharged from PM-JAY services will approach DH/CMHOs for getting continuous (Rehabilitative or palliative) treatment from appropriate AB-HWCs

Expected insights from INDIA- PM-JAY

- Claims data from PM-JAY are being routinely collected: potential goldmine of information that could help inform and improve health system performance.

- Claims data are now coded using ICD-11 (as of April 2022). For earlier claims data, procedure codes have been mapped back to ICD-10 and ICD-11 codes.

- Many relevant package codes are covered, e.g., 'accelerated hypertension', 'hypertensive emergencies', 'diabetic ketoacidosis', 'acute bronchitis', 'acute exacerbation of COPD', 'acute asthmatic attack', 'acute ischemic stroke', 'acute severe malnutrition', 'congestive health failure', etc.

- These could be used combined with age-sex-residence information to do preliminary analysis.
  - Assessing the utilization of care of packages under PM-JAY scheme to identify ACSC and its magnitude across States in India
  - Estimate the cost-savings- in terms of bed days and financial payments to the providers - for these conditions.
  - This analysis also facilitates identification of few tracer conditions for which better linkages with primary health care needs to be established especially through the health and wellness arm of Ayushman Bharath scheme.