

## RESEARCH COMMUNICATION

# Primary health care for noncommunicable diseases in the Philippines: An exploratory mixed-method study in select local government units

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### ABSTRACT

**Background:** Primary health care (PHC) is an important strategy in the prevention and control of noncommunicable diseases (NCD). Over the last ten years, the Philippine health sector has attempted to strengthen service delivery and health financing for PHC to address NCDs. This study aimed to describe and identify the challenges and best practices for NCD services in select local government units (LGUs) in the Philippines.

**Methodology:** Using a sequential exploratory mixed-method design, surveys were conducted to determine the subnational PHC capacity for NCDs in 12 LGUs and 24 public primary care facilities. This was followed by semi-structured interviews with 23 health administrators and PCF staff from different provinces of the country. LGUs were purposively sampled to represent different levels of urbanization and levels of income.

**Results:** The Philippines' PHC capacity was inadequate for its rising incidence of NCDs. Barriers were numerous: absence of multisectoral plans and integrated approaches, inadequate health budgets despite multiple overlapping financing sources, and lack of health human resources and training opportunities for NCDs. Enablers included the rare case of synergistic leadership across government administrative levels and the augmentation of financing by the national government.

**Conclusions:** Facilitating Philippine leadership away from vertical approaches to PHC requires technical guidance from the national government to curate a menu of cost-effective interventions across the life course as well as capacity-building for local executives and health staff to determine appropriate implementation strategies.

**Keywords:** *noncommunicable diseases, primary health care, Philippines, urban-rural*

## Introduction

Noncommunicable diseases (NCDs) cause 71% of global deaths with 75% occurring in low-and-middle-income countries (LMICs) [1]. Like other LMICs, the Philippines has seen a rapid rise in NCDs which now annually account for 68% of deaths with economic losses of US\$15 billion in 2019 [2]. The Philippines has had several initiatives to empower primary health care (PHC) to address NCDs. The Department of Health (DOH) devised a national multisectoral framework in 2011 focusing on five action areas: policy, supportive environments, community participation, lifestyle, and clinical management. The World Health Organization's (WHO) package of essential NCD (PEN) interventions [3] for the management of diabetes and hypertension was adapted by DOH and rolled out in public primary care facilities (PCF) in

2012. To help finance WHO-PEN in public PCFs, the Philippine Health Insurance Corporation (PhilHealth), the manager of the national health insurance program, established a primary care benefit (PCB) package in 2013 for the poorest patients [4].

Together with addressing social determinants and empowering communities, providing primary prevention in PCFs that is accessible to the majority of the population has the potential to circumvent debilitating and expensive complications like cardiovascular and renal disease [5]. The Philippines introduced reforms like the Universal Health Care (UHC) law of 2019 recognizing the importance of primary health care.

This study is part of a multi-country assessment funded by the International Health Policy Program Foundation Thailand which aimed to explore the capacity of PHC facilities to deliver comprehensive NCD interventions to communities in six countries in Southeast Asia and the Western Pacific Region. This paper describes the PHC services for NCDs in select local government units (LGUs) in the Philippines, identifying challenges and best practices.

## Methodology

### *Setting*

The Philippines is an archipelago of 108 million people, with a 2019 per-capita GDP of US\$3,485 and a per-capita health expenditure of US\$133 (47.9% out-of-pocket, 42% government) [6,7]. The DOH is the national policy, technical advisory, and regulatory body. PhilHealth, the national health insurer, reimburses accredited public and private providers for select health services.

Healthcare service delivery is decentralized and the responsibility of LGUs or the 81 provinces covering 146 cities and 1,488 municipalities across the country. Cities and municipalities are autonomous from the provinces in policy and financing [8]. The PCFs in the form of barangay health stations (BHS), rural health units (RHU), and city health centers (CHC) are owned by municipalities/cities while the provinces operate primary- or secondary-level hospitals.

### *Theoretical Underpinnings and Study Design*

The WHO six building blocks of health systems served as the theoretical framework which guided the design of this study's tools, data analysis, and results interpretation: (1) financing, (2) health human resources (HHR), (3) essential medicines and technologies necessary, (4) service delivery, (5) governance, and (6) health information systems (HIS) [9]. This study focused on all except for medicines and technologies, and health information systems.

A sequential exploratory mixed-method approach was used for the study [10]. The first phase involved a quantitative survey of PCF capacity developed using the building blocks framework, literature review [11,12], and consultation with the DOH's national program managers. The qualitative second phase focused on the challenges corresponding to the building blocks faced by PHC providers given the context of PCF capacity. The point of integration involved linking PCF capacity with the challenges experienced by PHC staff [10].

### *Sampling and Data Collection*

Fourteen cities (CLGU) and municipalities (MLGU) and 28 public PCFs were purposively sampled to represent different levels of urbanization and levels of income. As a sampling strategy, the Philippines was divided into four zones: National Capital Region (NCR), Luzon, Visayas, and Mindanao. One high-income and one low-income province (PLGU) were chosen for each zone except NCR based on the income classification by the Department of Finance [13]. In each province and NCR, one city and one municipality were selected. In each city or municipality, two public PCFs were chosen composed of one CHC or RHU and one BHS.

Primary data collection occurred between September to October 2020. The survey included checklists on NCD programs and equipment based on WHO-PEN [3] and DOH guidelines [1,14,15]. Follow-up semi-structured interviews were conducted with willing survey respondents. Of the 32 survey respondents, 23 agreed to be interviewed.

### *Data Analysis*

Descriptive statistics were generated using Stata 16 (StataCorp, College Station, TX). The health system building blocks served as an initial coding framework for thematic analyses. Three researchers developed additional codes inductively after independent transcript readings. Consensus on themes was reached via discussion and a review of supporting quantitative data and documents.

### *Ethical approval*

The study was approved by the St. Cabrini Medical Center-Asian Eye Institute Ethics Review Committee (ERC #2020-008).

## Results

Twelve LGUs completed the data collection consisting of seven high-income and five low-income provinces (Table 1). The median urban population was higher in the LGUs of high-income (64%, IQR:27%-76%) compared with the LGUs of low-income provinces (13%, IQR:3%-33%). There were 32 survey respondents and 23 interviews. The median years of service was 15 (IQR:7-22) for the 12 health administrators and 20 health professionals representing 10 BHS, 8 RHUs, and 6 CHCs.

### *Service Delivery and Human resources*

Consistent with the prevalence of different NCDs in the country, [16] sampled LGUs mainly served hypertensives and

**Table 1. Description of Sampled LGUs, their Resources, and NCD Services**

Variables	Total (N=12)	Variables	Total (N=12)
City	4	<b>Health workforce, median (IQR)</b>	
Provincial capital	5	General physician	2 (1-4)
Urban population, median (IQR)	45% (17-72)	population per staff	22,158 (15,960-35,049)
Poverty incidence, median (IQR)	17% (12-23)	Nurse	6 (2-12)
<b>Presence of local policies on NCDs</b>		population per staff	9,892 (4,522-19,940)
Control on alcohol and tobacco	12	Midwife	16 (14-32)
Control of outdoor and indoor air pollution	8	population per staff	2,849 (2,219-3,755)
Promotion of healthy diet	6	Community health worker	138 (81-204)
Promotion of physical activity	7	population per staff	357 (178-498)
<b>Health financing, median (IQR)</b> Health expenditures in 2019 (\$ thousands)LGU budget allocated to health	336 (245-866) 12% (11-13)	Medical technologist	2 (1-4)
<b>Service delivery</b>		Pharmacist	0 (0-1)
Public primary care facilities, median (IQR)		Nutritionist	0 (0-1)
RHUs/CHCs	1 (1-3)16	<b>Regular training in NCDs from 2017-2019</b>	
BHS	(12-30)	Doctors	
All barangays have a public PCF	9	Trained only once	6
Patients served in 2019, median (IQR)		Trained regularly	3
Hypertension	1,229 (768-2,295)	Nurses	
Diabetes	169 (105-590)	Trained only once	6
Asthma or COPD	11 (6-49)	Trained regularly	3
Breast cancer	92 (0-732)	Midwives	
Cervical cancer	0 (0-59)	Trained only once	4
Total for all causes	12,492 (10,892-15,230)	Trained regularly	3
<b>Key NCD services</b>		Community health worker	
WHO-PEN for hypertension and diabetes	12	Trained only once	4
Lifestyle modification	12	Trained regularly	2
Peer groups for diabetics or hypertensives	9	<b>Types of NCD training for any staff</b>	
Early detection of diabetic foot	8	Hypertension and diabetes	7
Early detection of diabetic retinopathy and nephropathy	4	Chronic respiratory diseases	6
		Patient follow-up and medicine adherence	7
		Cervical cancer screening	7
		Counseling skills for lifestyle modification	9

diabetics in 2019 and had few patients for chronic respiratory diseases, breast cancer screening, and cervical cancer screening (Table 1). Patients availed of free consultations and maintenance medications; however, laboratory diagnostics integral to NCD management were usually not free. Most patients paid out-of-pocket for diagnostics in private facilities or referral hospitals, as only four LGUs reported lab capacity for routine NCD diagnostics.

LGUs commonly had a BHS headed by one or two midwives in each barangay and one RHU/CHC staffed with one or two physicians and one to three nurses. RHU/CHCs served as both the referral PCF for BHS and the point of referral to hospitals or specialists.

However, there was a lack of staff relative to health programs and a lack of training opportunities for NCDs. Training was often one-time and directed at doctors and nurses who shared what they learned with midwives and CHWs. Respondents found it difficult to implement new programs with only few trained HHR. LGU healthcare workers implemented NCD programs and at least 10 other DOH programs. Aside from clinical duties, physicians and nurses also served as administrators who organized program implementation, budget, and data:

'There are so many programs that the DOH rolls out for implementation, monitoring, and improvement. But we have never had additional manpower since the time we started and had just a few programs. Imagine, one midwife catering to one barangay regardless of what the population is. For us doctors, the ideal ratio is 1 doctor to 20,000 population, but that has never been followed ever.' (Physician, City)

#### Governance and Financing

Consistent leadership across all administrative levels (province, city/municipality, and barangays) was critical to establishing NCD services in PHC. In LGUs where health and NCDs were the mayors' priority, health administrators were able to obtain additional funding, initiate best practices (Table 4), and consolidate SDNs including other LGUs or private providers. Conversely, lack of political priority underlays inadequate HHR, HIS, medicines, and technologies.

The proportion of LGU budget allocated to health was similar in rich and poor LGUs (median:12%). However, the absolute amount in richer LGUs (median: US\$748,000) was thrice that of poorer LGUs. To overcome challenges in city/municipality funding, LGUs relied on other financing

**Table 4. Innovations in NCD Services in PHC**

Local Health Systems
<p><b>1.Synergistic leadership for health among the provinces, city/municipalities, and barangays</b> Independent administrative levels aligned through a comprehensive framework for NCDs under the banner of life expectancy, solidified service delivery networks linking cities/municipalities to the tertiary provincial hospital via an electronic medical record system, and award incentives for barangays for health targets.</p>
<p><b>2.Real-time electronic inventory of NCD medicines</b> Daily inventory is encoded in a google spreadsheet monitored by the mayor for timely procurement and reducing stockouts</p>
<p><b>3.Procurement forecasting for NCD medicines using monitoring reports</b> Analysis of reports from each facility to determine the supply allocations for all enrolled patients and ensure they get their entire monthly prescription</p>
Primary Prevention
<p><b>1.Strong tobacco control campaigns</b> Smoking education with youth and parents, anti-smoking posters in public vehicles and establishments, patrolling of public areas, and fining violators who smoke, advertise, or sell cigarettes</p>
<p><b>2.Physical activity events and competitions</b> Marathons and Zumba involving the entire city/municipality, weight loss challenges with cash prizes</p>
<p><b>3.Healthy feeding programs</b> CHWs cook meals for the community on a weekly basis using local ingredients to demonstrate healthy diet</p>
Secondary Prevention
<p><b>1.NCD screening requirement for business owners and tricycle drivers (high-risk group)</b> Health and NCD examinations are required for those applying for business permits or tricycle franchises, screening is done in community meetings, business and licensing offices, and tricycle operators and drivers associations.</p>
<p><b>2.Screening for hypertension, diabetes, and renal disease among students</b> Survey on NCD needs of students, establish health profile and monitor (e.g., blood pressure, urinalysis) regularly through school clinics and house-to-house visits by CHWs</p>
<p><b>3.Patient “passbooks” to facilitate monitoring and follow-up</b> Patients who consult with PCFs for NCDs are given a booklet to keep; the booklet has records of monthly monitoring (e.g., blood pressure, glucose levels, cholesterol, etc.), medication dispensing, and reminders for when patients should return for prescription refills</p>
Tertiary Prevention
<p><b>1. Access to medical specialists at PCFs for case management and early detection of complications</b> In a poor LGU, a visiting diabetologist visits PCFs monthly; In a rich LGU, they created special clinics for diabetes, cardiovascular disease, ophthalmology</p>
<p><b>2. Efficient referral system between PCFs and provincial hospital</b> Electronic information systems provide templated endorsement forms for patients, quick response by the hospital for acceptance of referral and instructions for patients (e.g., which doctor and department), the system prompts PCF providers to check-up on patients, sensitive cases with additional concerns are tagged for further services (e.g., legal, counseling) with patient confidentiality safeguards</p>

streams. The biggest contributor was the national government. Aside from medicines and supplies, DOH funded capital investments in PCFs and the deployment of HHR. PhilHealth reimbursements for primary care benefits (PCB) were used to partly fund medicines, lab supplies, and HHR salaries. When these streams were insufficient, LGUs approached provincial governments, barangay officials, and other national agencies with local offices.

Though NCDs were ranked as a top-three priority by 30 (94%) health professional respondents, LGUs did not have an overarching framework for NCD prevention and control. Programs revolved around lifestyle modification and clinical

management while overlooking policies on other risk factors such as air pollution, diet, and physical activity. Despite the importance of PHC in NCD management, the respondents' concept of 'community empowerment' primarily involved information, education, and counseling with limited community co-creation and mobilization.

## Discussion

Efficient and effective PHC is critical to address the rise of NCDs. In countries with decentralized health systems, local governments are at the forefront of service delivery for PHC. This study described NCD services in select LGUs of the

Philippines. Despite growing recognition by local executives and health administrators that NCDs were a growing problem, numerous barriers weakened their ability to deliver preventive and support services for NCDs.

The weaknesses of the Philippines' PHC may be attributed to longstanding problems associated with decentralization and local governance. Continuity of care was difficult to implement when PCFs and referral facilities fall under different administrative jurisdictions. Similar findings were reported in Indonesia and Kenya [17] which both have devolved health systems.

Another governance challenge was the fragmented approach in control and prevention of NCDs. DOH's multi-sectoral plans for NCDs [14] were not realized in local communities as most health administrators and staff did not collaborate with other sectors to address risk factors and social determinants of NCDs.

Moreover, the LGUs experienced varying sustainability for PHC interventions, dependent on the local executives' political commitment and funding, as these were not always health professionals. Even with local commitment to NCDs, the public PCFs were primarily dependent on the funds from municipal and city governments. However, in 2019, only 4% of the country's total health expenditures went to PHC [7] despite the NCDs being responsible for 40% of national healthcare expenditure. Limited public health spending was driven by low revenue sources, especially among poor LGUs with smaller tax revenues [8]. Financial responsibility for chronic care was often unsustainably pushed to patients [18].

Governance and financing issues were the roots of shortages of essential HHR. The shortage of staff in urban PHC networks has been attributed to limited national-government-approved permanent positions at all levels of public service, [19] and limited LGU-political priority or budget for more local health workers. However, health workers are the backbone of PHC systems. CHWs are crucial to chronic disease-care management, gatekeeping, and primordial interventions in health-literacy, lifestyle-changing, and screening [20-21].

## Limitations

The purposive sample was small and skewed towards better performing LGUs, as those selected were capital cities or municipalities. Findings are not representative of all PCFs in the Philippines as poorer LGUs may have lower capacity. As such, findings do not completely reflect patients' barriers to

local NCD services. To minimize bias favoring the healthcare providers, responses were triangulated with direct observation and international checklists. Moreover, the interviewees' recounts of negative experiences suggested a candid assessment of enabling and hindering factors affecting the delivery of NCD services in PHC.

## Conclusions and Recommendations

Findings show a need for facilitating synergistic leadership to integrate different levels of health system governance and different sectors involved in health. In Tunisia, this entailed discussions with stakeholders to produce a shared vision of PHC they felt worth investing [22]. This may, in turn, bolster funding for PHC which is currently insufficient and fragmented. Though WHO-PEN serves as an invaluable guide, facilitating multi-sectoral collaboration and moving away from vertical approaches to PHC require technical guidance from the DOH to curate a menu of cost-effective interventions across the life course, and capacity-building for local executives and health staff to determine appropriate implementation strategies. Social-political dialogue among empowered stakeholders is necessary to produce a shared vision of PHC to be operationalized in communities.

With the full implementation of UHC underway, and the recent Supreme Court ruling that expanded LGUs' IRA to 40% of the national taxes, PHC financing is expected to dramatically increase. However, national leaders must now find ways to merge financing streams. As illustrated in Morocco, pooling allowed more efficient use of funds including designing more cost-effective benefits packages, systematically contracting the private sector, and targeting vulnerable groups who would normally be unable to shoulder costs on their own [23].

Increased funding can be used to address perennial shortages of human resources as well as medicines and equipment. Permanent positions for PHC and the Commission on Audit's cap on budget for local personnel's salaries should be expanded as PHC workforce are in critical number especially when emergencies arise.

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