

UIep, Valerie Gilbert T.; Uy, Jhanna; Casas, Lyle Daryll

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Primary health care for noncommunicable diseases in the Philippines

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DISCUSSION PAPER SERIES NO. 2020-39

Primary Health Care for Noncommunicable Diseases in the Philippines

Valerie Gilbert T. Ulep, Jhanna Uy, and Lyle Daryll D. Casas



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CONTACT US:

RESEARCH INFORMATION DEPARTMENT
Philippine Institute for Development Studies

18th Floor, Three Cyberpod Centris - North Tower
EDSA corner Quezon Avenue, Quezon City, Philippines

publications@mail.pids.gov.ph
(+632) 8877-4000

<https://www.pids.gov.ph>

Primary Health Care for Noncommunicable Diseases in the Philippines

Valerie Gilbert T. Ulep
Jhanna Uy
Lyle Daryll Casas

PHILIPPINE INSTITUTE FOR DEVELOPMENT STUDIES

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Abstract

Noncommunicable diseases (NCDs) have become the major cause of disease burden in the Philippines. In 2019, NCDs accounted for about 70% of the 600,000 deaths nationwide; this is projected to increase in the medium to long-term. The premature deaths due to NCDs are increasing in a much faster rate in poorest communities in the country while declining in relatively rich areas. The growing burden of NCDs in poor communities have implications on the poverty reduction efforts and economic prospects of the country. Despite the growing threat of NCDs, the Philippine health system remains historically designed and oriented to address infectious diseases and maternal and child health. This has led to episodic and fragmented delivery of health services - a model that has difficulty handling NCDs. As the country embarks to institute major reforms in the Universal Health Care Act towards a primary health care-oriented and integrated health system, this study will identify the specific challenges in governance, financing, service delivery, and health human resources that hinder the realization of comprehensive and continuous delivery of NCD services in local communities.

Keywords: non-communicable diseases, primary health care, health systems

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Primary health care for noncommunicable diseases in the Philippines

Valerie Gilbert Ulep, Jhanna Uy, and Lyle Daryll Casas¹

1. Introduction

Non-communicable diseases (NCDs) are now the leading cause of disease burden in the Philippines.² In 2019, NCDs accounted for 70% of the total 600,000 deaths, and 65% of the 33 million disability-adjusted life years (DALYs)³ (Institute for Health Metrics and Evaluation, 2020). NCDs are conditions of long duration and slow progression. The main types of NCDs are cancers, chronic respiratory diseases, cardiovascular diseases, and diabetes.

Treatment for NCDs is expensive as it requires periodic laboratory diagnostics and physician consults, maintenance medications, and expensive hospitalizations for complications (e.g., stroke, heart attack). In the Philippines where out-of-pocket remains the major source of health spending, poor and “near poor” patients can be impoverished when they face large and recurring health expenditures from the chronic nature of NCDs (Flores & O’Donnell, 2016; Allen, et al., 2016). These have tremendous consequences on the macro-economic growth and poverty-reduction efforts of the country (Bertram, et al., 2019).⁴ The burgeoning epidemic of NCDs is expected to provide cost pressure in the health system (WHO, 1999).⁵ Given the large economic, social, and health consequences of NCDs, the country must adopt a comprehensive and efficient approaches in reducing the burden of NCDs.

A critical strategy to combatting NCDs is a robust primary health care (PHC) system (WHO, 2011; WHO, 2018). PHC serves as the point of contact of individuals, families, and communities into the healthcare system. It provides greater access to early management of the disease through first contact, continuous, and integrated health care services. In theory, NCDs can be managed in local communities where people are closer to home, interventions are more appropriate, and less expensive. In settings with developed and mature health systems, NCDs are typically managed by PHC. However, in most low and middle-income countries like the Philippines, PHC have yet to be re-organized to provide integrated NCD services.

¹ Research Fellow, Supervising Research Specialist, and Research Analyst, respectively, at the Philippine Institute for Development Studies. The authors would like to thank the International Health Policy Program of Thailand headed by Dr. Walaiporn Patcharanarumol and Dr. Viroj Tangcharoensathien for their support and valuable insights.

² The Sustainable Development Goal (SDG) aims to reduce premature deaths due to NCDs by one third.

³ The disability-adjusted life years or DALYs refers to a social measure of the burden (from disease or disability) in populations. It is expressed by combining measures of life expectancy and adjusted quality of life in the course of a burdensome disease or disability for a population (Wikipedia, 2020; Prüss-Üstün, Mathers, Corvalán, & Woodward, 2003).

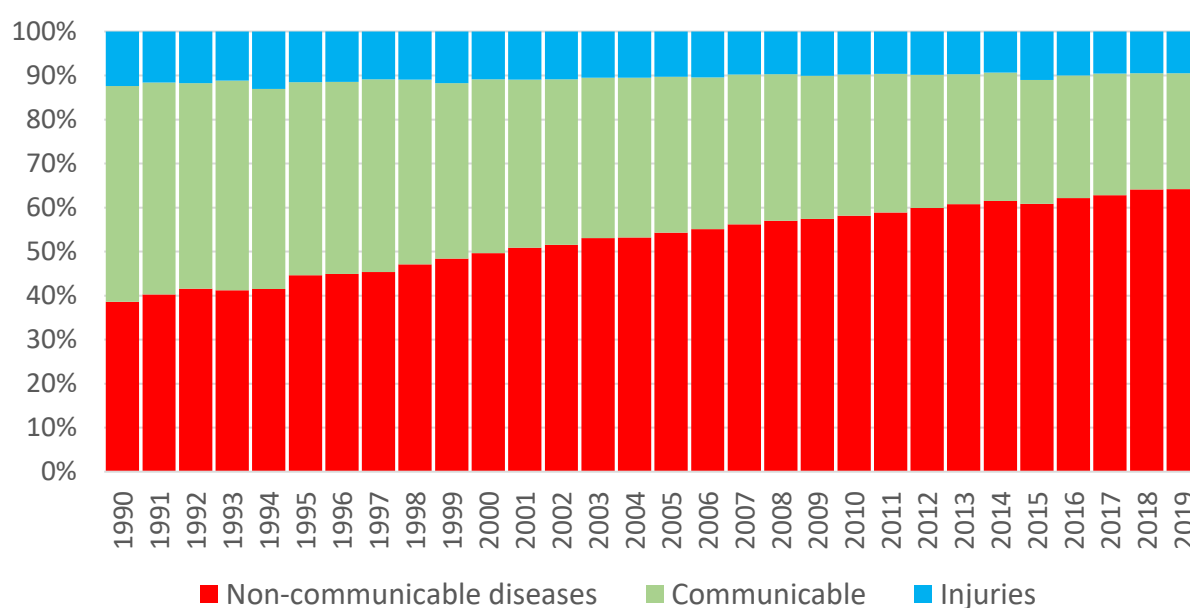
⁵ The epidemic of NCDs does not only provide enormous cost pressure in the health system. NCDs influence the broader economy through different ways. One is that when the working-age population die of a disease, the output undergoes direct loss because the physical capital can only partially substitute for the loss of human capital. Second is that if the working-age population suffer from a disease, the tendency is they become less productive and might work inefficient than before. Third, current NCD interventions (e.g.: medical treatments) and prevention require substantial resources. This results to loss of savings across the population and will have a dire effect on the economy (Chen, Kuhn, Prettnier, & Bloom, 2018).

This paper assesses the readiness of PHC in the Philippines to manage the rising NCD epidemic in the context of the health system building blocks: of health service delivery, health financing, health human resource, health information technology, and governance (WHO, 2007). This study is timely in that the Philippines is embarking in major health reforms via the Universal Health Care (UHC) Act of 2019, which aims to shift the country health system's to be more primary care-oriented (Philippines, 2018).

2. Burden of Non-communicable diseases in the Philippines

Between 1990 to 2019, the contribution of NCDs to total deaths increased from 39% in 1990 to 64% in 2019 (Institute for Health Metrics and Evaluation, 2020) (Figure 1). While infectious diseases (e.g., Tuberculosis, lower respiratory tract infections) and maternal and child health (MCH) conditions still comprise a significant proportion of disease burden, their share has declined in the last three (3) decades while almost all NCDs have been increasing precipitously. For instance, the burden of ischemic heart disease (IHD) in DALYs increased from 1.9% in 1990 to 7.5% in 2019 (Table 1).

Figure 1. Burden of disease, proportion of deaths by cause, Philippines



Source: Institute for Health Metrics and Evaluation, Global Burden of disease (2019)

Table 1 shows the top causes of disease burden in the Philippines. Five (5) of the top causes, namely, **IHD, stroke, chronic kidney disease, diabetes and low back pain** are NCDs. **NCDs are projected to increase in the medium- and long-term.**⁶ Without path-breaking interventions, NCD cases will double by 2040. For instance, the number of Filipinos with hypertension will increase from 14 million in 2020 to 30 million in 2040 (Table 2).

⁶ Here, we used multiple regression model to project the medium and long-term incidence of major NCDs. Predictors in the model include human capital (secondary education and per capita income) and technological change (year) (Murray, 2005). The impact of exogenous variables that might be introduced in the future are not included in the model. The projected cases were used in the estimation of resource requirements for UHC included in the Philippine Health Facility Development Plan (2020-2040).

Table 1. Top burden of diseases, by cause, Philippines

Rank (2019)	Causes	Share of total DALYs			
		1990	2000	2010	2019
1	Ischemic heart disease (IHD)	1.9%	4.4%	6.7%	7.5%
2	Neonatal disorder	11.2%	11.1%	9.5%	7.4%
3	Stroke	2.0%	3.7%	6.0%	6.3%
4	Lower respiratory tract infections (LRTI)	11.3%	8.8%	7.0%	6.0%
5	Chronic Kidney Disease	1.5%	1.9%	2.9%	3.5%
6	Tuberculosis	4.5%	4.5%	3.9%	3.5%
7	Diabetes	2.4%	2.4%	2.5%	3.2%
8	Low back pain	2.5%	2.5%	2.7%	3.0%
9	Interpersonal violence	4.0%	4.0%	2.9%	2.8%
10	Congenital defects	3.1%	3.1%	3.3%	2.7%

Source: Institute for Health Metrics and Evaluation, Global Burden of disease (2019)

Table 2. Projected cases of major NCDs (in 000,000)

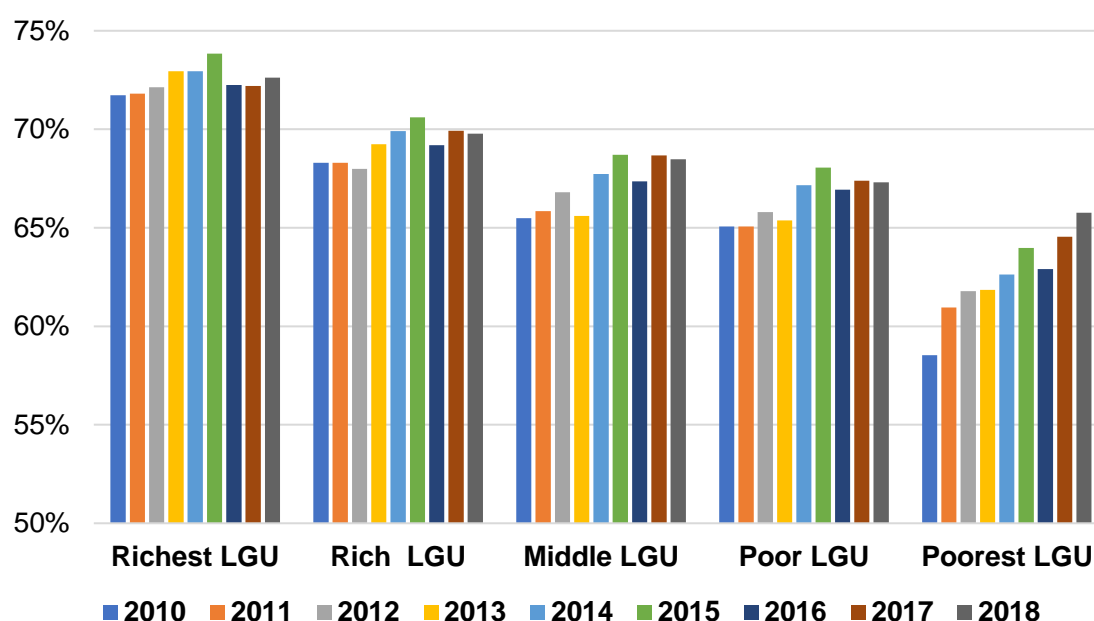
NCD	2020	2025	2030	2035	2040
Hypertension	148.4	174.0	203.5	237.1	275.8
Diabetes	90.0	107.2	126.6	148.4	173.0
Asthma	82.8	94.8	110.0	129.3	153.7
Chronic Obstructive Pulmonary Disease	40.8	47.3	56.5	69.2	86.4
Ischemic Heart Disease	14.2	16.2	18.6	21.3	24.5
Breast Cancer	2.4	2.9	3.5	4.2	4.9
Stroke	1.2	1.5	1.8	2.2	2.7
Colorectal Cancer	0.8	1.0	1.3	1.5	1.8
Lung Cancer	0.3	0.3	0.3	0.4	0.4

Source: Authors' projections

The burden of NCDs is increasing among the poor.⁷ In developing countries, NCDs primarily afflicts richer subpopulations. However, evidence from the mortality data from Philippine Statistical Authority (PSA) suggests that NCDs are increasing in a much faster rate in poor communities. **Figure 2** shows the share of NCD deaths in local governments (municipalities and cities) in the last decade disaggregated by LGU poverty incidence. **While the share of NCD deaths among all deaths in the poorest communities is lower than richer communities, we observe an upward trend over the last decade.** Meanwhile, the share of NCD in deaths among the relatively rich communities have remained stagnant.

⁷ Here, we analyzed the 2010-2018) mortality data of municipalities and cities of the Philippines. We merged the 2018 provincial poverty incidence from PSA to assess the relationship of NCD deaths and poverty. We grouped poverty incidence into quintiles.

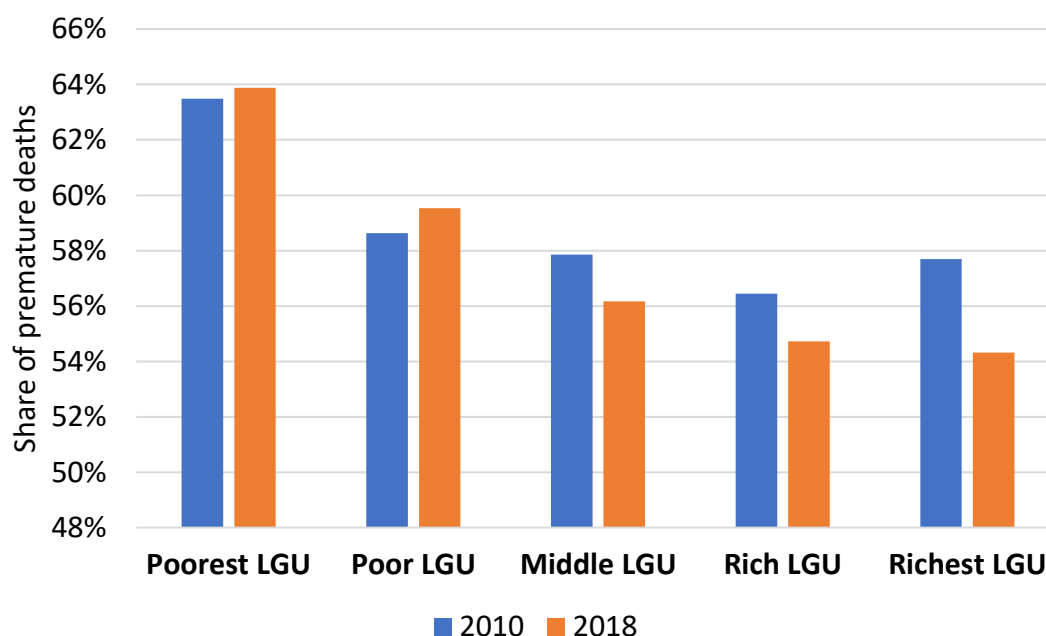
Figure 2. Share of NCDs among total deaths, by year and municipal poverty incidence



Source: Authors' analysis of mortality data from PSA. Poverty incidence of LGUs are also from the PSA.

The share of NCDs among premature deaths (i.e., death before the average Filipino life expectancy at birth) is declining in communities with lower poverty incidence (Figure 3). The large gradient in the incidence suggests that the burden of NCDs is starting to emerge in poor communities, and this is expected to increase in the medium to long-term.

Figure 3. Share of NCDs among premature deaths, by municipal poverty incidence



Source: Authors' analysis of mortality data from PSA. Poverty incidence of LGUs are also from the PSA.

The growing burden of NCD in poor communities have **implications on the poverty reduction efforts of the country**. Poor communities typically do not have enough health system resources to manage (or even detect) NCDs. Moreover, due to the chronic nature of NCDs and its health care expenses, households who are mostly poor to begin with are further pushed into extreme poverty either through out-of-pocket health spending or through loss of economic productivity.

Metabolic and behavioral factors linked to NCDs are the major risk factors of disease burden in the Philippines. High systolic blood pressure (metabolic), smoking (behavioral), high fasting blood glucose (metabolic), high BMI (metabolic) were the dominant risk factors in 2019 (see Table 3), contributing primarily to stroke, ischemic heart disease, and diabetes. The contributions of these risk factors to Philippine disease burden have increased over the last three (3) decades while low birthweight and short gestation – major determinants of infant mortality and morbidity –have declined substantially (Table 3).

Table 3. Top burden of diseases, by risk factor, Philippines

Rank (2019)	Causes	Share of total DALYs			
		1990	2000	2010	2019
1	High systolic blood pressure	3.2%	6.1%	9.0%	10.3%
2	Smoking	5.2%	7.5%	9.0%	9.0%
3	High fasting blood glucose	3.3%	4.7%	5.9%	7.5%
4	High BMI	1.5%	3.2%	4.0%	7.1%
5	Low birthweight	11%	10.3%	8.1%	6.0%
6	Kidney dysfunction	1.9%	2.8%	4.5%	5.3%
7	Alcohol use	4.0%	4.3%	4.5%	5.0%
8	Short gestation	8.4%	8.0%	6.4%	4.8%
9	High LDL	1.1%	2.6%	4.0%	4.6%
10	Household air pollutant	5.7%	2.9%	3.0%	4.3%

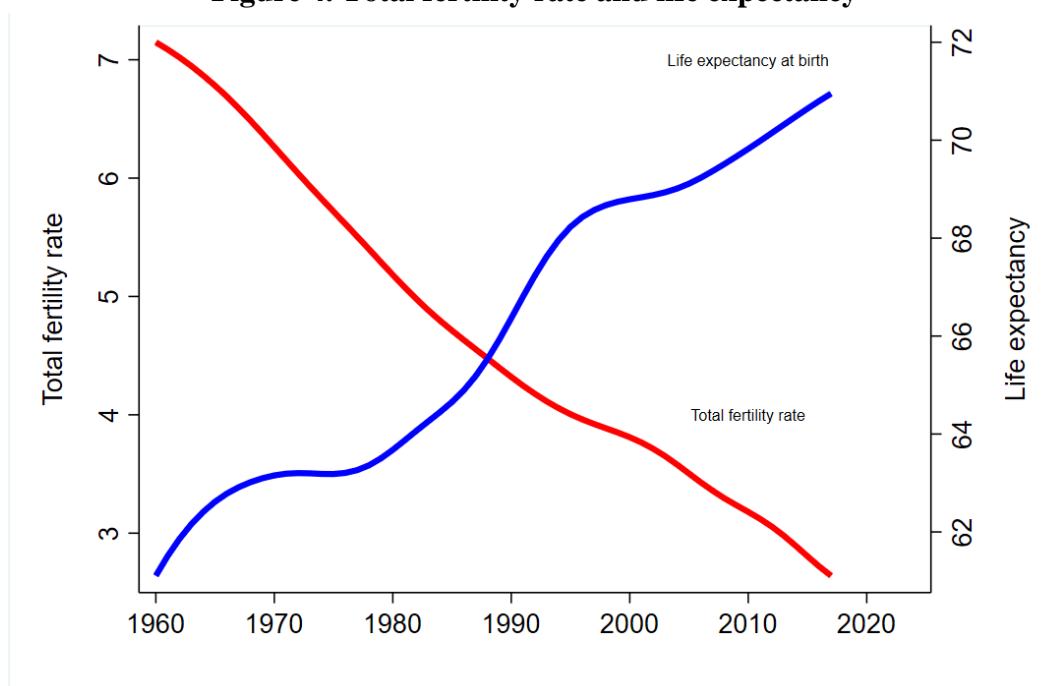
Source: Institute for Health Metrics and Evaluation, Global Burden of Disease 2019

Changing demographics is also accelerating this epidemiologic transition from infectious diseases to noncommunicable diseases (Omran, 2005).⁸ The Philippine population is still young relative to its regional peers but is now starting to age. While the country's total fertility rate is still above replacement⁹ it has been declining in recent decades, and concomitant with the improvement in child survival is longer life expectancy at birth. Aging happens when fertility rates drop and the life expectancy either remains unchanged or improves (PRB, 2020). With this pattern, the country expects further decline in burden related to MCH and increase in NCD and conditions related to frailty.

⁸Epidemiologic transition is the change in disease patterns and causes of death. A baby born in the 1900s would have likely died due to an infectious disease but the babies born in the 20th century will most likely die due to chronic or non-communicable diseases.

⁹ Total fertility levels of about 2.1 children per woman constitute the average number of children a woman would be needing to reproduce herself by having a daughter who will live up to the reproductive age (UN, 2015).

Figure 4. Total fertility rate and life expectancy



Source: World Development Indicators, World Bank 2020

The changing socio-economic landscape also explains the increasing NCD risk factors. Like most emerging economies, the rapid urbanization in the Philippines is linked with growing risk factors for NCD. The share of population living in urban areas has increased from 30% in 1960s to 50% in 2019. In the past few decades, traditional communities in the Philippines have experienced hurried and unforeseen urbanization, which resulted to change in lifestyles and stemmed in unhealthy dietary patterns and sedentary lifestyle¹⁰ (McDade & Adair, 2001; Zahra Khorrami, Yarahmadi, & Khodakarim, 2016)

¹⁰ In a cross-country study, Goryakin, Rocco, and Suhrcke (2017) show that urbanization appears to have contributed to an increase in average BMI and cholesterol level. Moreover, the least urbanized countries are expected to have lower prevalence of diabetes among women. This association is also much stronger in the low and middle-income countries.

3. Primary Health Care (PHC)

PHC is the initial point of contact for individuals, families, and communities into the healthcare system.¹¹ PHC ensures that people receive comprehensive and continuous care, ranging from promotion, prevention, treatment, rehabilitation, and palliation. Ideally, it should be delivered in communities closer to the people (WHO, 2019). Table 4 shows examples of PHC interventions for NCDs at different stages of disease prevention.

Table 4. Examples of PHC services

Primordial	Primary prevention	Secondary prevention	Tertiary prevention
Intervention before risk factor: <ul style="list-style-type: none"> Promotion of physical activity Population based anti-smoking campaigns Promotion of healthy diet 	Control of risk factor: <ul style="list-style-type: none"> Smoke cessation interventions Weight control 	Screening: <ul style="list-style-type: none"> PAP's smear (for possible cervical cancer) Colonoscopy (for possible colon cancer) Risk screening for cardio-vascular diseases Clinical breast exam (for possible breast cancer) 	Control the disease/minimize the disability: <ul style="list-style-type: none"> Control blood glucose of diabetic patients BP control or providing maintenance drugs for hypertension

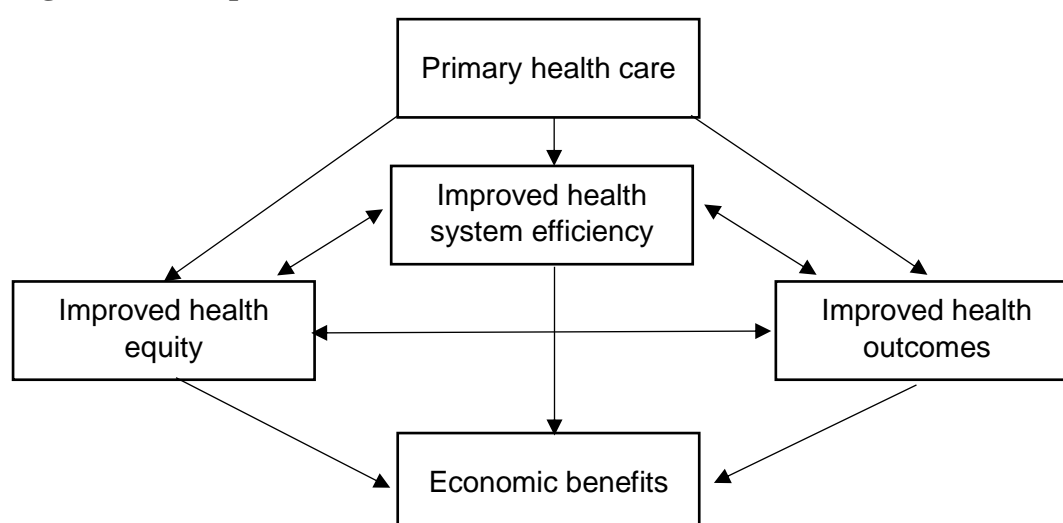
PHC has been proven to be effective in improving population health, health system efficiency, and health equity. Empirical studies suggest that PHC is linked to better health system efficiency, which means wasteful use of healthcare resources such as labor and capital are minimized. Wastes include avoidable hospitalizations, re-admissions, and unnecessary emergency thereby avoiding healthcare costs. Evidence from empirical literature suggests that greater supply and access to primary care provider (PCP) and systems that invested in continuity of care significantly reduces the number of avoidable hospitalizations and re-admissions.

More importantly, PHC leads to better health outcomes. Meta-analyses show that the supply of PCP and continuity of care reduce all-cause mortality.¹² Primary care interventions, such as the use of community health workers (CHWs) reduce maternal, child and neonatal mortality in low and middle-income countries. Figure 5 shows the linkage of PHC and economic benefits through health outcomes, health equity, and health system efficiency (WHO, 2018; Verulava, 2019; Kluge, et al., 2018).

¹¹Based on the ASTANA declaration: "All WHO Member states pledges in four key areas: to make bold political choices for health across all sectors, to build sustainable primary health care, to empower individuals and communities, and align stakeholder support to national policies, strategies, and plans." Countries around the world vowed to strengthen their primary health care systems as an essential step toward achieving universal health care coverage (WHO, 2018). This reaffirms the historic 1978 Alma-Ata Declaration, which expanded the approach to improving health for all people by committing their governments to accept Primary Health Care as their national policy (Rifkin, 2018).

¹² One primary care provider increase per 10,000 is linked to an average reduction in mortality rate of 5.3%, or 4.9 per 10 000 annually in the United States . Also, existing evidences suggest that primary care interventions (e.g.: use of CHWs), result to reduction in maternal, child, and neonatal mortality in low and middle income countries (LMIC) (WHO, 2018).

Figure 5. Conceptual framework for economic case for PHC investment

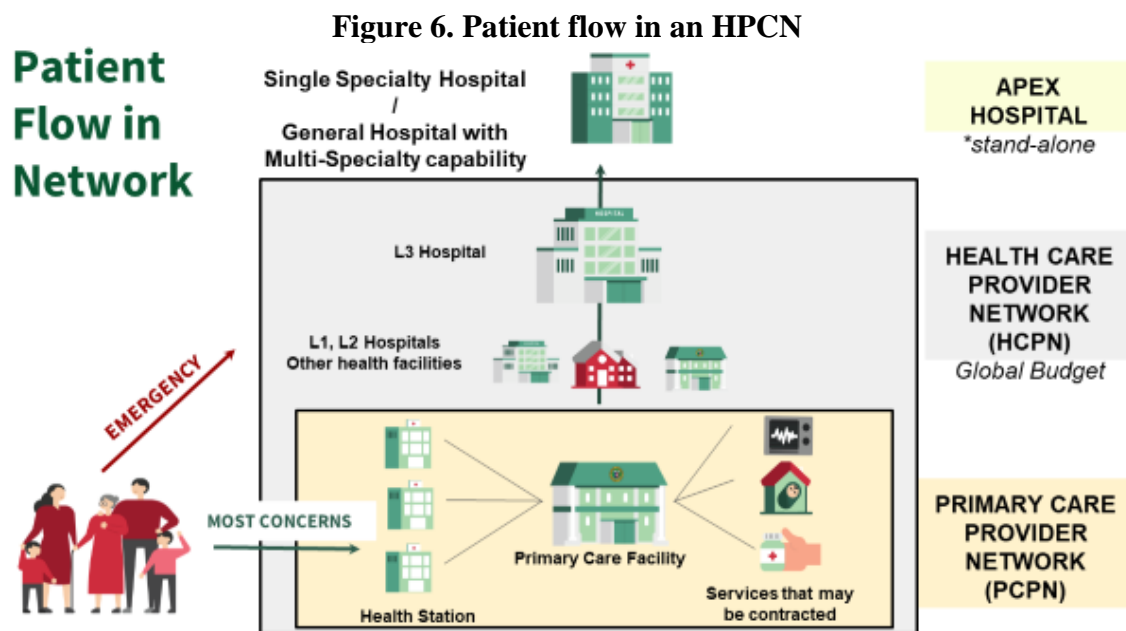


Source: World Health Organization, 2018

PHC is the optimal channel for the health system response to NCDs. PHC facilities should have the ability to provide comprehensive and continuous care, particularly primordial, primary prevention, curative, tertiary prevention, and palliative care. However, this requires bold health reforms to shift the current system from being fragmented to integrated, from being hospital-centric to PHC-oriented, and from being episodic in the delivery of care to continuous (Kruk, Nigenda, & Knaul, 2015).

PHC is an integral part of the country's envisioned health system in the future. The Philippines is embarking in a major health reform through the passage of UHC Act (2019). One of the critical tenets of the Act is transforming the health system to be more PHC-oriented and integrated with robust gatekeeping system¹³ through the creation of province or city-wide health care provider networks (HCPN). In this model, different levels of public and private health facilities integrate and provide coordinated and continuous healthcare services to the people and community (see **Error! Reference source not found.**). HPCNs must have a network of primary care facilities (PCFs) composed of Rural Health Units (RHU), Barangay Health Stations (BHS), and/or other private primary health care facilities. PCFs shall serve as the first point of contact of patients, families, and communities with the healthcare system to access basic and comprehensive PHC. If specialized care is needed, patients will be referred to hospitals within the network. Level 2 hospitals will provide intensive care services and some specialty care. The HPCN is linked to an apex hospital as end referral center. Figure 6 shows the patient flow under the UHC.

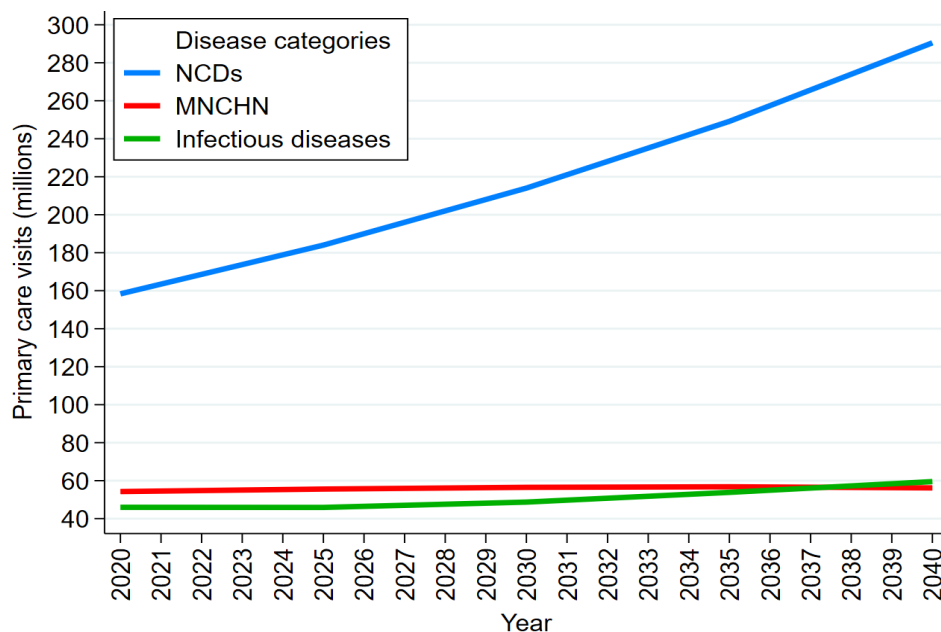
¹³ The core goal of gatekeeping is to strengthen PHC in the health system. It requires the patients to initially reach to their primary care providers (PCP) and they need to secure a referral before seeking next-level care at specialty care or higher-level (e.g.: hospital) facilities (Li, et al., 2017; Li, et al., 2017).



Source: Department of Health 2020

With the growing population and changing epidemiologic and demographic patterns, **the demand for PHC is expected to double in the next 20 years.**¹⁴ NCDs will be the major driver of this demand (Figure 7). The expected demand for PHC is based on the service delivery model envisioned in the UHC Act.

Figure 7. Projected primary care visits, by disease category



Source: Philippine Health Facility Development Plan 2020-2040

¹⁴ V. Ulep and J. Uy (both authors) provided technical assistance to the Department of Health in developing the Philippine Health Facility Development Plan (PHFDP) 2022-2040 in projecting the disease burden, which later on used to estimate the demand for PHC and hospital care.

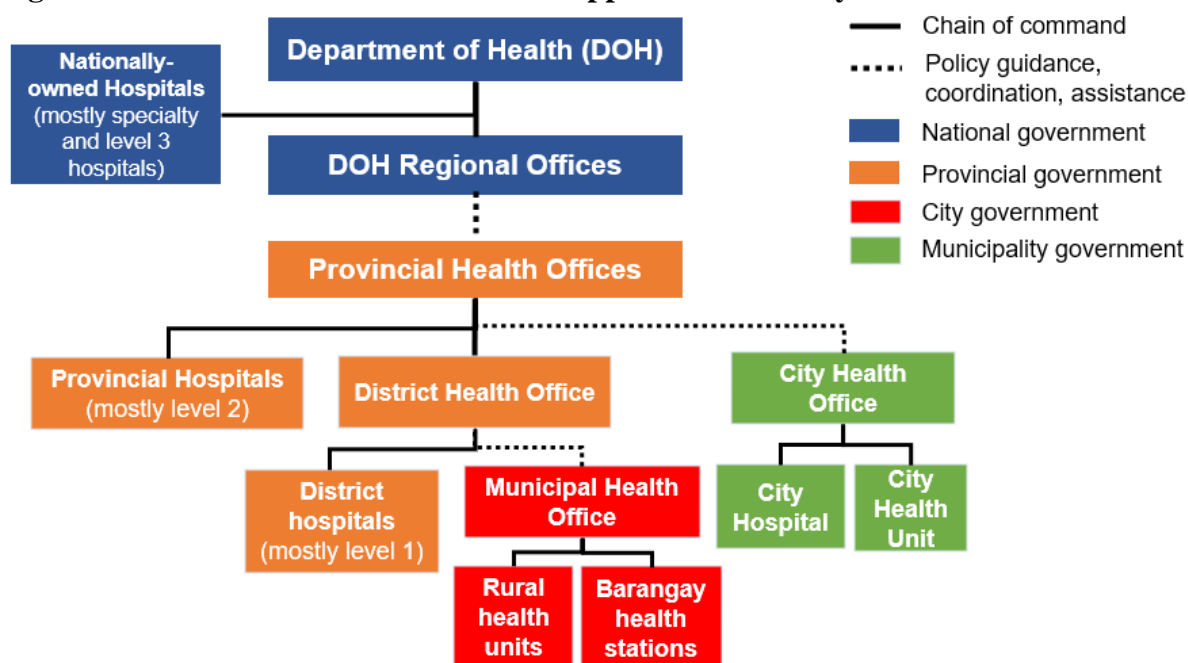
4. Assessing the readiness of primary healthcare in the Philippines for NCDs

Using the WHO's health system building blocks as our analytical framework, we assess the readiness and challenges in the PHC system in providing NCD services. Based on this framework, the pillars or building blocks that constitute a health system are the following: governance, health service delivery, health financing, health human resources, health and ICT. These building blocks are needed to be strengthened to achieve the overall goals of any health system, which are: improved health outcomes, financial risk protection, improved efficiency, and improved responsiveness. Intermediate goals of the health system are access, coverage, quality, and safety.

4.1. Governance

The Philippine health system is highly decentralized. In theory, as mandated by the Local Government Code, the national government only sets national health policies and standards, and provide a range of assistance to local government units (LGUs). Provinces and municipalities are responsible for the actual delivery of healthcare services and are autonomous from the national government (**Figure 8**). Provinces own and operate district and provincial hospitals; while municipalities and cities own and operate Rural Health Units (RHUs) and Barangay Health Stations (BHS). Both facilities provide population-based and individual-based PHC services.

Figure 8. Governance structure of the Philippine healthcare system



Source: Adopted from Dayrit et al, 2018;

This governance structure is fragmented as the different level and types of care are under different political jurisdictions and leaderships (Figure 8). Individual health facilities providing different levels of care operate in silos; they are not usually coordinated in

any clinical, managerial, and financing aspects. This fragmented governance makes integration of care challenging to implement, leading delivery of care to be typically episodic.

The public sector delivers healthcare services in parallel with the private system, but again in a non-coordinated and fragmented fashion. The private sector provides healthcare services similar to the public system. However, they provide independently from the public system targeting mostly the richer segment of the population. The private sector is not formally integrated into the public system in providing comprehensive and coordinated healthcare (Manuel, Lagrada, Picazo, Pons, & Villaverde, 2018). Referral system between private and public health facilities is practiced in some local governments, but not formally institutionalized.

Episodic care¹⁵ brought about by the fragmented governance structure is not effective in the management of NCDs. In infectious disease management, the aim of the health system is to treat the patient until the infection is cured. Therefore, standalone care is acceptable. However, this kind of single encounter between a patient and health providers will not address the needs of NCDs patients. NCDs are chronic and lifelong in nature, and the goal is to improve the quality of life (e.g., reduce symptom or pain), which requires constant monitoring, evaluation of patients, and referral between specialists and primary care practitioners. Because of this approach, the health system must move away from episodic delivery of care into a more integrated whole-person approach (Kruk, Nigenda, & Knaul, 2015).

4.2. Health service delivery

The country's health service delivery is composed of the following core health facilities: barangay health stations (BHS), Rural or City Health Units (RHU or CHU), infirmaries, and hospitals. Ancillary facilities, such as standalone laboratories, pharmacies, specialized facilities support the functions of core facilities. RHUs and infirmaries are the main provider of PHC, and BHS can serve as extensions of RHU found in villages. BHS, RHU, and infirmaries are expected to provide primordial, primary, and secondary prevention for NCDs. Table 5 show different NCD services that are supposed to be provided in public PHC facilities.

PHC facilities are scarce and not very accessible to communities. The national goal is for all Filipinos to have access to a PHC facility within 30 minutes. Currently, the Philippines has 2,600 RHUs. However, based on geospatial analysis, only half of the population have access to RHU within this time duration. BARMM, Bicol, and MIMAROPA are the regions with the highest percentage of population without timely access to RHU.¹⁶ Private clinics provide non-hospital-based health services. The DOH, however, does not have a complete data on private non-hospital facilities. Given that almost a fourth of PHC visits happened in private

¹⁵ Episodic care is defined as a one-time encounter with a patient or client concentrating on a current concern (CPSA, 2010).

¹⁶ The detailed gap analysis in primary healthcare facilities are reported in the Philippine Health Facilities Development Plan (2020-2040). The country needs to add 2,600 more RHUs to reduce the gap in physical access.

PHC, the current supply of private PCF could more or less similar to the number of public PCF.¹⁷

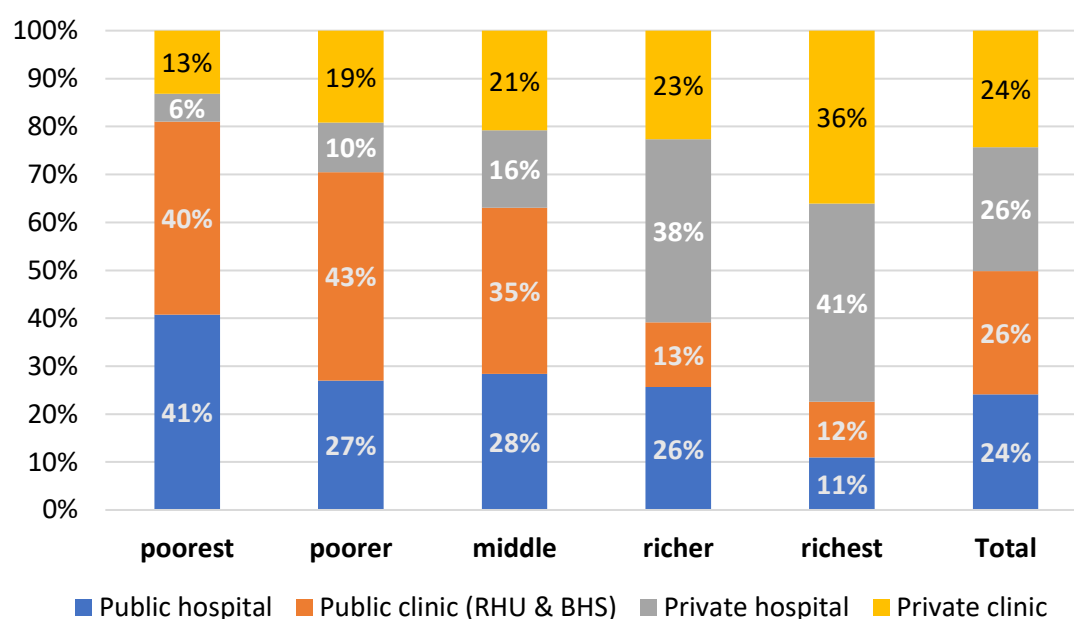
Table 5. NCD services offered in public primary health care facilities

Facility Type	Owner	Catchment	NCD functions
Barangay health stations (BHS)	Barangay or village; executive head: barangay captain	Barangay	<ul style="list-style-type: none"> • Primordial • Primary and secondary prevention (but limited)
Rural Health Units or City Health Units or infirmaries	Municipality or city	Municipality/city	<ul style="list-style-type: none"> • Primordial (e.g. anti-smoking campaign, healthy lifestyle) • Primary care prevention: screening and diagnosis <ul style="list-style-type: none"> • Cardio-vascular diseases: cardio-vascular risk screening in adults. • They have the following capacity: EKG, CBC, and urinalysis) • Cancer: Annual Physical Check-up, clinical breast exam, cervix Acetic Acid Wash, Hep B/ HPV vaccinations, smoking cessation, counseling, education • Tertiary prevention: Surveillance and monitoring of diagnosed patients (e.g., follow up and monitoring hypertension)
District hospital (level 1 hospital or specialized clinic)	Provincial; in some cases, there are municipality that own a level 1 hospital.	District (group of municipalities) or province	<ul style="list-style-type: none"> • Specialized outpatient facility (e.g., diagnostic, and medical consultation, • Management of early stages cardiovascular diseases • They have the following capacity: telecardiology, x-ray, clinical chemistry such as FBS/ Lipid Profile/ Creatinine.

A large portion of the population were bypassing PHC. Figure 9 shows that almost 50% of the population who visited health providers due to non-emergency NCD-related concerns sought either private and public hospitals; the rest visited either private or public PHC facilities. However, the distribution shows a highly segmented market. Poor patients tend to visit public facilities, and the rich patients tend to visit private facilities. The distribution of hospital and PHC visits are relatively equal across socio-economic status. The large percentage of patients seeking health services in hospital for non-emergency and NCD-related concerns suggests the lack of effective gatekeeping mechanism, a signal of inefficiencies and wastes in the health system.

¹⁷ The Philippine Health Facilities Development Plan (2020-2040) estimates that there are 1,200 private PCF (private clinics not included).

Figure 9. Shares of type of health visited due to NCD-related concerns

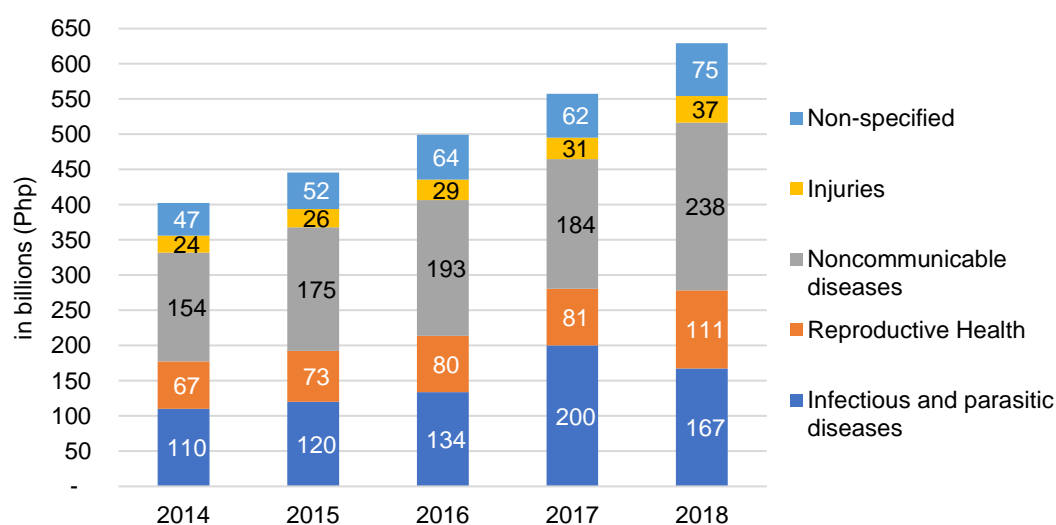


Source: Authors' analysis of National Demographic and Health Survey (2017); Note: NCD considered here are the following: hypertension, kidney disease, diabetes, and asthma. We exclude only those requiring non-confinement and the purpose of visits is medical check-up.

4.3. Financing

In 2018, the country spent about Php640 billion on health, of which about 40% were accounted for NCDs (Figure 10). From 2014 to 2018, health spending on NCD has increased from Php154 billion to almost Php240 billion (in real terms using 2018 prices). Given the projected growth in prevalence cases, NCD-related health spending is expected to further increase in the medium to long-term.

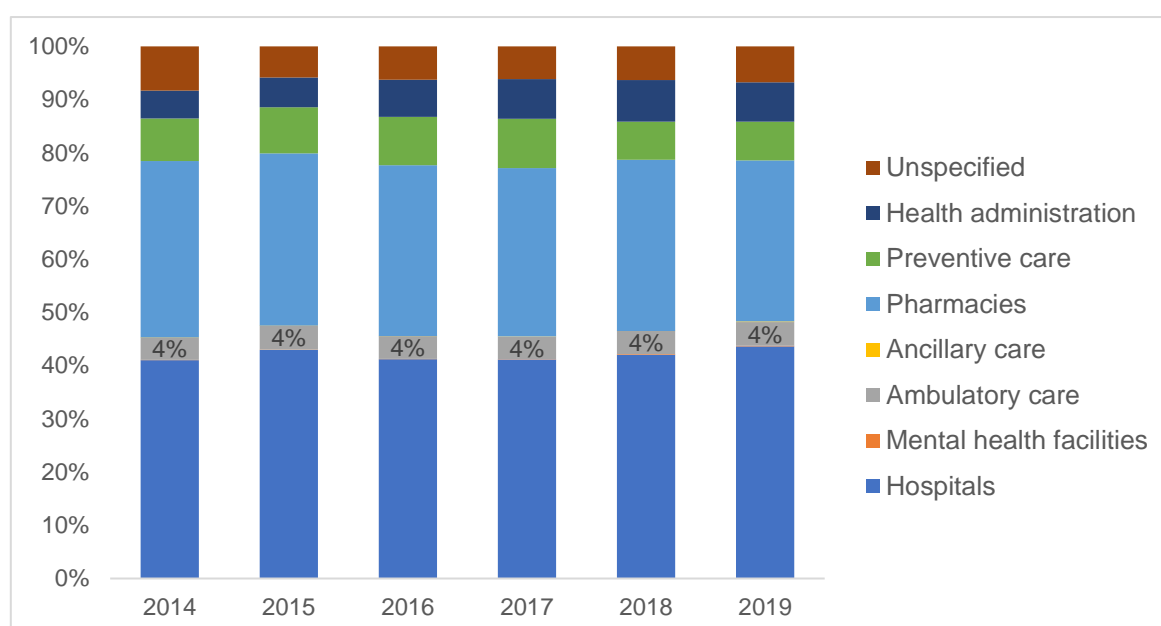
Figure 10. National health accounts, by disease category



Source: Philippine Statistical Authority; deflator using International Monetary Fund

Only 4% of the country's health spending were accounted for PHC facilities (Figure 11). Based on 2019 Philippine National Health Accounts (PHNA), if the country's health spending is disaggregated by type of healthcare provider, approximately 30% were accounted for pharmacy, 19% for general public hospital, 16% for private hospital, and only 4% for PHC facility. This pattern suggests that the Philippine health system is highly hospital-centric. Relative to the other ASEAN countries, the Philippines only spends about USD 6 per person for PHC. In contrast, ASEAN countries spend around 8% of total health spending on PHC (about USD20 or more per person).

Figure 11. National health accounts, share of total health expenditures by health provider, 2019



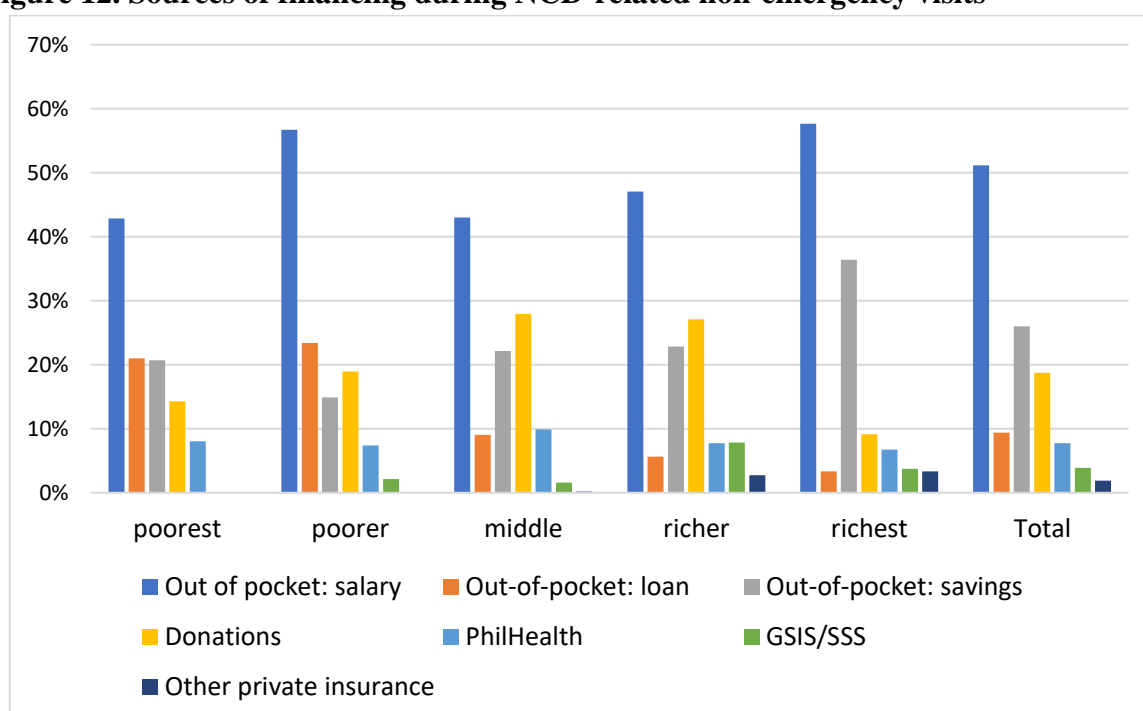
Source: Philippine Statistical Authority; note: ambulatory care can be used as a proxy for PHC facility

Out-of-pocket (OOP) is a major source of PHC spending (Figure 12). Based on the PNHA (2019), about 52% of health spending accounts for OOP. The rest are public spending (e.g., national government, local government, PhilHealth) and other private spending. The PNHA does not disaggregate financing sources of PHC. However, majority of health spending in PHC facilities must be OOP because public spending is limited. PhilHealth, for instance, mostly covers inpatient benefits (i.e., 99% of total insurance claims are hospital claims). **Figure 12** shows the sources of funds of PHC visits due to NCD. Almost 50% used their own salary to finance their PHC visits, and more than 20% of poorest patients used loans. The large share of OOP (especially loans) and the low share of social protection schemes (such as PhilHealth) exposes households to financial catastrophe and impoverishment.

PhilHealth spending for PCH services is negligible (Table 6. Number and value of PHC claims). In 2012, PhilHealth, the country's national purchaser introduced the Primary Care Benefit Package (PCB) which covers pre-identified primary prevention, diagnostics, and drugs/medicines in accredited RHUs. However, the package is only offered to sponsored members (i.e., poor households whose premiums are paid by the national government). In 2017,

PhilHealth expanded the PCB by covering the formal sector members. Benefit included pre-identified health screening and consultations, diagnostics, and medicines for selected infectious and NCDs at different stages (age groups). The payment mechanism is capitation with fixed co-payment. While there was an effort to expand breadth of PHC benefits, the total number of claims has remained very low, less than 0.05% of total claims value.

Figure 12. Sources of financing during NCD-related non-emergency visits



Source: Authors' analysis of National Demographic and Health Survey (2017); Note: NCD considered here are the following: hypertension, kidney disease, diabetes, and asthma. We exclude only those requiring non-confinement and the purpose of visits is medical check-up.

Table 6. Number and value of PHC claims in PhilHealth

Year	No. of claims in primary care clinics	Value of claims in primary care clinics	Share of claims in primary care clinics to total claims
2016	107	164,000	0.00%
2017	939	2,722,000	0.01%
2018	1483	728,6000	0.01%
2019	570	2,630,700	0.01%

Source: Philippine Health Insurance Corporation, Stats & Charts for 2016-2019

Multiple and overlapping sources of health financing contributes to fragmented service delivery. In theory, the role of the national government (through DOH) should be policy development and stewardship. However, service delivery remains an important function of the national government by providing direct subsidy to RHUs in the form of capital outlay, human resources, and commodities (e.g. NCD drugs, vaccines, family planning commodities) on top of local government and PhilHealth spending. If majority of health spending on PHC is mostly private OOP, public spending is low, and the different types (national government, local governments, and PhilHealth) are not consolidated, this weakens the position of the national purchaser (in this case, PhilHealth) to negotiate for HPCN integration or for any efficiency-enhancing policies

4.4. Health Human Resources

The scarcity of health care staff in PHC facilities remains pervasive. A typical RHU needs at least one MD, a nurse, and a midwife. While, on average, there is one (1) doctor, two (2) nurse, and six (6) midwives per RHU, 10% of RHUs (N=2,400) in the Philippines reported that they do not have a doctor, and a significant share do not have nurse or a midwife (Table 7,

Table 8). Health workers in public PCF carry gigantic tasks. These health care workers need to implement the NCD program and at least 10 other DOH programs. Also, physicians and nurses serve as administrators who organize program implementation, budgets, and data.

Table 7. Share of RHU without health workers, 2019

Region	Doctor	Nurse	Mid-wife	Rad Technician	Lab Technician	Pharmacist	Dentist
CAR	9%	2%	4%	98%	38%	94%	50%
MIMAROPA	20%	5%	7%	94%	54%	96%	42%
NCR	1%	10%	13%	97%	62%	99%	10%
Region I (Ilocos)	2%	57%	14%	99%	36%	94%	30%
Region II (Cagayan Valley)	7%	10%	10%	99%	14%	86%	43%
Region III (Central Luzon)	8%	7%	10%	97%	23%	96%	34%
Region IV-A (CALABARZON)	14%	29%	16%	93%	44%	89%	32%
Region IX (Zamboanga Peninsula)	13%	19%	38%	99%	40%	91%	55%
Region V (Bicol)	10%	19%	13%	99%	17%	95%	37%
Region VI (Western Visayas)	3%	7%	15%	95%	19%	95%	36%
Region VII (Central Visayas)	8%	12%	16%	99%	42%	91%	62%
Region VIII (Eastern Visayas)	13%	5%	14%	99%	29%	93%	45%
Region X (Northern Mindanao)	18%	9%	11%	99%	33%	91%	53%
Region XI (Davao)	5%	19%	0%	98%	14%	84%	25%
Region XII (SOCCSKSARGEN)	5%	21%	36%	100%	19%	70%	41%
Region XIII (CARAGA)	15%	16%	3%	100%	29%	95%	58%
Philippines	10%	15%	12%	98%	32%	92%	42%

Source: Author's calculations from Department of Health data; gray color means necessary cadre that the PCF facility should have

The current supply of primary care physicians (PCPs) is not enough to meet the future health needs of the population. Based on the Philippine Health Facility Development Plan (2020-2040), about 50,000 PHC physicians are needed meet the PHC demand. The projected needed is based on the service delivery model as envisioned in the UHC Act. This projected need for primary care physicians (PCP) is equivalent to current number of generalists, and specialist in the country. Universal PHC therefore could not be achieved if the human production capacity remains the same and if bold reforms are pursued such as task shifting. Currently, most PHC services can only be performed by a physician.¹⁸

¹⁸ Task shifting interventions to utilize existing health workforce efficiently, can be one of the best strategies for implementing NCD programs (e.g.: cardiovascular disease (CVD) prevention programs), in relation to the short supply of health workforce (Kavita, Thaku, Vijayvergiya, & Ghai, 2020; Some, et al., 2016; Joshi, et al., 2014). This has been a practice by several low and middle- income countries as well, driven by short supply of physicians and unequal distribution of health workforce across the rural and urban areas. In the context of non-communicable diseases, this has been proven to be effective in management of interventions and is supported by growing number of evidence¹⁸. Thus, in countries like the Philippines, where there is unbalanced and short supply of physicians,

There is limited training on NCD interventions for some PHC cadres in local governments. Typically, NCD training offered by the national government is often limited and does not cover all staff. Training is directed to doctors and nurses who share what they learn to midwives and CHWs. The common request is regular refreshers on NCDs and that more staff and cadres be trained. Otherwise, PHC health workers difficult to implement new programs with only a few trained health or if the trained personnel leaves.

Table 8. Average number of health workers in RHU, 2019

Region	Doctor	Nurse	Mid-wife	Rad Technician	Lab Technician	Pharmacist	Dentist
CAR	1.2	2.4	3.6	0.0	0.8	0.1	0.5
MIMAROPA	1.1	2.6	7.1	0.1	0.5	0.1	0.6
NCR	1.2	1.4	2.3	0.0	0.5	0.0	0.9
Region I (Ilocos)	1.3	3.3	6.7	0.0	0.8	0.1	0.8
Region II (Cagayan Valley)	1.2	2.5	7.9	0.0	1.1	0.2	0.6
Region III (Central Luzon)	1.1	1.9	3.9	0.0	0.8	0.0	0.7
Region IV-A (CALABARZON)	1.2	2.2	4.8	0.1	0.7	0.1	0.8
Region IX (Zamboanga Peninsula)	0.9	3.8	5.3	0.0	0.8	0.1	0.5
Region V (Bicol)	1.3	3.6	7.4	0.0	0.9	0.1	0.7
Region VI (Western Visayas)	1.2	2.3	6.4	0.1	1.0	0.1	0.7
Region VII (Central Visayas)	1.2	2.4	4.6	0.0	0.7	0.1	0.4
Region VIII (Eastern Visayas)	1.0	3.3	4.2	0.0	0.8	0.1	0.6
Region X (Northern Mindanao)	1.0	2.3	5.9	0.0	0.8	0.1	0.5
Region XI (Davao)	1.2	2.2	8.1	0.0	1.0	0.2	0.8
Region XII (SOCCSKSARGEN)	1.2	2.4	3.6	0.0	0.8	0.1	0.5
Region XIII (CARAGA)	1.1	2.6	7.1	0.1	0.5	0.1	0.6
Philippines	1.2	1.4	2.3	0.0	0.5	0.0	0.9

Source: Author's calculations from Department of Health data; gray color means necessary cadre that the PCF facility should have

4.5. Health Information Technology

Information and communications technology (ICT) should be used to enhance the business processes and service delivery for NCDs. ICT can be used to improve both backend and frontend health services. Under backend include the use of ICT in improving business such as medical record keeping, which is integral part in the management of NCD and integration of care between health facilities and/or between health providers especially during referrals. Also, ICT can be used at the frontend in facilitating interaction between patients and physicians through telemedicine. This can improve continuity of care, and monitoring and evaluation of patient progress - again both critical in NCD management.

Adoption of eHealth solutions remains limited. Most RHUs have NCD registries, but the majority of BHS use only paper while RHUs have both electronic medical records (EMR). The main challenge in EMR is access to computers and internet. Richer LGUs have better

this task shifting may also be a key to expand access and service delivery in facilities with increasing need for NCD care but is having shortage and limited human resources.

internet connection and the resources to provide BHS with computers. Table 10 shows the share of RHU with electronic medical records.

Table 9. Share of RHU with electronic medical records, 2019

Region	Share
Philippines	35.8%
NCR	27.5%
CAR	32.9%
I - Ilocos	31.3%
II - Cagayan	31.4%
III – Central Luzon	53.8%
IVA - CALABARZON	9.0%
IVB – MIMAROPA	28.2%
V - Bicol	37.4%
VI - Western Visayas	31.4%
VII - Central Visayas	6.0%
VIII - Eastern Visayas	45.4%
IX - Zamboanga Peninsula	57.1%
X - Northern Mindanao	47.9%
XI – Davao Region	26.3%
XII – SOCCSKSARGEN	29.1%
XIII – CARAGA	58.9%
BARMM	no data

Source: Author's calculations from Department of Health data

Monitoring and evaluation for NCD services is weak. RHU primarily rely on counts of cases and deaths. They do not often have patient management targets (e.g. percent of patients with controlled blood pressure) or indicators to measure the effectiveness of NCD interventions. It is difficult to collect data for indicators that require blood chemistry (e.g., percent of patients with controlled blood sugar) or medications adherence because patients cannot afford them regularly.

While the utilization of telemedicine and telehealth projects is growing, it remains underutilized and the results have been mixed. It is challenging to leverage the success of telemedicine initiatives across sectoral and geographic boundaries because of varying degrees of investments and approaches of the national and local government units (DOH, 2020). The full adoption of telemedicine is also hindered by ambiguity with regard laws regard medical practice or how existing financing and schemes accommodate these new innovative ways of patient-provider interactions.

5. Conclusion

The fast-changing pattern of disease in the country – from infectious diseases to NCDs is an important signal to shift the organizational and financing designs of the Philippine health system. The Philippine health system is historically oriented to infectious diseases and MCH hence the episodic and fragmented delivery of healthcare services. However, this delivery model will not be able to address the rising NCD epidemic, as NCDs requires comprehensive and continuous care. For the government to be responsive of the growing threat of NCD which now causes 70% of the total disease burden annually, the health system requires reforms to address challenges of health governance, financing, health human resources, and the use of ICT. We must accelerate the implementation of UHC in the Philippines in the context of NCDs where UHC envisions a modern, more integrated and PHC-oriented health system.

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