2017 Health Systems Research Management in the DOH Program

Health Facility and Household Survey on Access to and Use of Medicines in the Philippines

Research Project Terminal Report

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF CASE BRIEFS

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CONFLICT OF INTEREST STATEMENT

None of the authors of this survey or anyone who had influence on the conduct, analysis or interpretation of the results has any competing financial or other interests.

EXECUTIVE SUMMARY

The facility and household survey was conducted in 2017 with funds provided by the Department of Health (DOH), coursed through the Philippine Council on Health Research and Development (PCHRD). This survey aims to provide inputs for the DOH to come up with policies that would make medicines more accessible to the Filipinos, and also, to understand the rationality (or lack thereof) in the use of medicines at the household level. The WHO protocol for the Pharmaceutical Situation Assessment, Level II and Level III, was adopted as the methodology for this study.

The indicators in the survey measure the outcome and impact of strategic pharmaceutical programs in a country: improved access, quality and rational use. Access is measured in terms of the availability and affordability of essential medicines, especially to the poor and in the public sector. Measuring the actual quality of medicines by testing samples can be expensive. Instead, the presence of expired medicines on pharmacy shelves, as well as the adequate handling and conservation conditions, are indicators of the quality of medicines made available to the population. Availability of prices of innovator and generic medicines at the public procurement, public sector and private sector sources were studied in the survey. Finally, rational use is measured by examining the prescribing and dispensing habits of health providers and the implementation of key strategies such as standard treatment guidelines (STG) and essential medicines lists (EML).

The study was conducted in six (6) survey areas, consisting of one (1) major city and five (5) provinces. The survey areas include: La Union Province in Region 1; Pampanga Province in Region III, City of Manila in the National Capital Region, Palawan Province in Region IV-B; Capiz Province in Region VI and Misamis Oriental Province in Region X. In each survey area, the sample of public facilities was identified by first selecting the main public hospital, and a primary/rural health center or lowest level public health facility. An additional six public facilities per survey area were then selected at random from all middle level public health care facilities, except in Palawan Province where only six (6) middle level public health

care facilities were surveyed. Eight private health facilities were originally targeted per geographic site. However, only five (5) from Capiz and Palawan, respectively, and seven (7) from La Union were included in the study. Meanwhile, twelve private pharmacies per area were included in the study except in Palawan where only four (4) pharmacies participated in the study. In all study sites, one regional or provincial warehouse that supplies the public sector was visited. The study also had some problems accessing health NGOs, With the exception of Metro Manila where four (4) health NGO were interviewed, no health NGOs or mission hospital was available in the other five (5) project sites. Overall, 46 public health facilities, 41 private health facilities, 64 private pharmacies, four (4) health NGOs, and six (6) warehouse were included in the study.

The survey was designed to provide a picture of the pharmaceutical situation in a country. The sample sizes used however were statistically not large enough to make inter-facility comparisons. Regional comparisons should be done sparingly as not all geographic regions are represented and over-emphasizing the six regions included in the study may detract focus from the study's significance as a national survey.

The highlights of the 2017 PSA include the following:

- The findings on the access to medicines show that key essential medicines selected for the country are partially available in public health facilities (69%), warehouses that supply public health system (74%) and private pharmacies (63%). The length of stock out durations at the public procurement (69 days) and public sector (63 days) indicate that the key essential medicines are not continuously available. These figures reflect some inefficiencies in the public health system procurement and distribution. The public sector procurement and distribution system needs to be reviewed and enhanced to increase availability and access to key essential medicines

- From the global list of drugs, mean availability of originator brand and generic medicines in the public sector was 12 % (compared to 8% in 2009) and 42% (27% in 2009), while in private sector it was 29% (14.7% in 2009) and 45% (20% in 2009), respectively. This indicates a huge jump in the availability in both the public and private sector outlets but more in the private sector. Mean availability of generic medicines in other sectors (or NGOs) was very high at 59%. However, there are very few (4) such outlets included in this round of the survey. The overall picture indicates that generic medicines have become more available in the public and private sector outlets but more in the private sector.

Availability and Median MPR of Selected Medicines in Different Sectors

	Procurement	**Public Sector**	**Private Sector**	**Other Sector (NGO)**
Mean Percent Availability				
Brand	NA	11.9%	28.8%	11.3
Generic	NA	41.5%	44.7%	54.2
Median MPR for Medicines with Minimum Number of Prices				
Brand	3.33	3.52	22.11	---
Generic	3.63	3.31	3.77	1.87

- The public procurement has been shown in the 2005, 2009 and 2017 surveys to have the lowest MPRs for generic and innovator brands. However, in 2017, it is still purchasing medicines at prices higher than international reference prices (3.33 for branded medicines and 3.63 for generic medicines). Public sector patient prices, on the other hand, decreased significantly from 30.23 (2009) to 3.52 for innovator brands, and from 9.78 (2009) to 3.31 for generic medicines. A separate study can be designed to identify the factors contributing to this decline in prices.

- In the public sector, the procurement agency has been shown to have the lowest MPRs but is purchasing medicines at prices higher than international

reference prices (3.33 for branded medicines and 3.63 for generic medicines), indicating a relatively fair level of purchasing efficiency. These can be improved further to increase availability of generic medicines sold at a lower price in the public sector outlets.

The table below shows the trends in medicine prices using the Median Medicine Price Ratios (MPR) as reference in studies conducted in 2002, 2005, 2009 and 2017.

Median Medicine Price Ratios (MPR)						
Year Conducted	Innovator Brand			Generic Equivalent		
	Private	Public	Public Procurement	Private	Public	Public Procurement
2002*	**15.95**	**18.24**		**8.36-17.76**		
2005**	**17.28**	**15.31**		**5.64**	**6.40**	
2005 Public Procurement**			14.19			**5.14**
2008/09***	**37.10**	**30.23**		**10.76**	**9.78**	
2008/09 Public Procurement			26.33			**7.97**
2017 Health Facility and Household Survey****	**22.11**	**3.52**	**3.33**	**3.77**	**3.31**	**3.63**

* Health Action Information Network (HAIN), 2002

** Institute of Philippine Culture, Ateneo De Manila University (IPC, ADMU), 2005

*** People Managed Health Services Cooperative (PMHSMPC), 2009

**** Institute of Philippine Culture, Ateneo De Manila University (IPC, ADMU), 2018

- From the household survey, the average monthly cost of medications for chronic disease was PhP 1166. The average cost of a prescription for acute illness was PhP 517. Generic medicines are perceived to be less expensive compared with branded medicines. Most frequent reasons for non-compliance to medical treatment for acute and chronic diseases were improvement of symptoms, advice from someone in the household against completion of the course, and unaffordable medicines. Medicines covered by insurance for acute and chronic conditions were very negligible.

- Affordability of medicines for certain disease conditions and treatment, defined as the number of days' wages of the lowest paid government worker needed to purchase standard treatments, are the same for lowest price generics in the public and private sector outlets. Some conditions are: adult Pneumonia [Amoxicillin] (0.2 days) and Hypertension [Captopril] (0.6 days). The affordability of lowest priced generics in the public sector improved but most conditions would still require at least half a day's wage. Treatments costing over a day's wage of the lowest paid government worker was limited to adult Pneumonia [Cefuroxime] (1.3 days).

- Less than half of all the prescriptions for acute and chronic illnesses were from medical professionals with high prevalence of self-medication among the respondents. This pattern was reported for acute illnesses where the proportion of what looks to be minor illnesses (runny nose etc.) is high, which may further reinforce this observed trend. Furthermore, most of the medicines found at home were from past treatment regimen.

  The EML and the Standard Treatment Guidelines (STG) were found in 73% and 67% of the public healthcare facilities, respectively. This indicates that there is still a need to promote vigorously the importance of having a copy of both EML and STG in all public health facilities.

- The average number of medicines per prescription at the public facility dispensaries was 2.0 and can be considered adequate. The percentage of patients with antibiotics prescribed in the public facilities was 53 %. While a little lower than the 63% in the 2009 health facility survey, this figure is still considered high, and may indicate an irrational prescribing pattern for this group of medicines. The percentage of patients with prescribed injections from public facilities was 7%. This is considered an adequate prescribing pattern for this group of medicines.

- Another variable studied was the adherence of prescribers to recommended treatment regimens. Findings show that prescribers are likely not to adhere to treatment guidelines. Forty percent (40%) of non-bacterial cases of diarrhea were prescribed with antibiotics, 70% of non -pneumonia ARI and 60% of those with mild/moderate pneumonia were also prescribed with antibiotics.

- The median percentage of prescribed medicines that are on the national Essential Medicines List (EML) was 50%, indicating a somewhat limited adherence of physicians to this list. However, 100% of medicines included in the survey were prescribed using its generic name. This pattern suggests better access to medicines and rational use.

- The percentage of medicines adequately labeled was 100%, for both public health facility dispensaries and at private pharmacies. Patients at both private pharmacies and public health facility dispensaries knew how to take their medicines. Both facilities registered 100 median percentage for this indicator.

Recognizing that many of Millennium Development Goals (MDGs) were not met, 195 countries including the Philippines adopted the Sustainable Development Goals (SDG) for 2016 to 2030, to replace MDGs. The health-specific agenda, SDG No. 3 states "Ensure healthy lives and promote well-being for all of all ages.” The

Philippines Health Agenda 2016-2022: All for Health towards Health for All, is the blueprint of the current administration to attain this health-related SDG. More recently, the DOH also revitalized the FOURmula 1 program, now called FOURmula 1+, which aims to boost universal healthcare delivery through improved an performance governance system (DOH, 2017). Specifically, target number 8 of SDG No. 3 aims to achieve universal health coverage (UHC) including financial risk protection, access to quality essential health care services & access to safe, effective quality, & affordable essential medicines and vaccines for all.

While the existing programs on rational medicines use, including health access to cheaper and better-quality medicines are apt articulation of SDG No. 3, the inaccessible and prohibitive health costs in the country remains a major issue. The results of this study showed that the mean percent availability is higher for generic medicines (42% for the public sector and 45% for the private sector) compared with the branded medicines (12% for the public sector and 15% for the private sector). The highest mean percent availability figure in the study was 45% for generic medicines in the private sector. Using the same methodology for measuring availability of essential medicines in 2009 and 2017, the current study showed that generic medicines availability in the public sector increased from 27.5% (2009) to 42% (2017) while branded medicines availability also increased from 8 % (2009) to 12% (2017). These figures, however, are still below the 2003 MDG report estimate of 50-70% and 2004 WHO estimate of 66% on the indicator "proportion of the population with access to affordable essential medicines." Further, it is interesting to note that availability of medicines for both branded and generic brands are higher for the private sector, and though it may not be statistically significant, the pattern is worth exploring further.

The results of this survey show that on the sample considered, availability of basic medicines is still an issue. Relative to the 2009 results, medicine prices do not look as high now when compared with international reference price, as well as, to the poorest consumers' ability to pay for it. However, in a country where a significant portion of the population are considered poor (22% in 2015) paying three times more than the international price is still a major concern. While programs on

medicine access and health insurance coverage have expanded tremendously in the last few years, there is still a need to validate whether the assistance are really reaching those who need it most. In a context where many outpatient medicines are not covered by the national health insurance, and where client targeting is still an issue, price determinant can further exacerbate existing barriers to medicine access. The results from the household survey also has the same conclusion.

1. INTRODUCTION

The primary objective of conducting medicine price monitoring survey is to inform consumers and purchasers about current prices of medicines and pattern of price changes. Provision of reliable information on prices will support activities aimed at increasing access to affordable essential medicines. These activities may include consumers' education on cost of medicines, helping purchasers to make informed decisions during procurement and advocacy for more affordable medicines targeting government officials, policy-makers or the pharmaceutical industry. A medicine price survey using a standardized method to generate reliable and regular information on prices, changes over time and comparisons between sectors, can monitor the behavior of medicine prices following the implementation of the Cheaper Medicines Act.

Monitoring of medicine access and availability will provide regular information to consumers, procurement managers, policymakers and other interested parties on:

- What people pay in public health facilities and in private retail pharmacies for a selection medicines
- Price variations over time
- Availability of monitored medicines
- Affordability of monitored medicines to ordinary people.

This also serves as a venue for assessing if the key pharmaceutical objectives are met namely: people have access to essential medicines; these medicines are safe, effective and of good quality; and these medicines are used properly. The Department of Health (DOH) through the Philippine Council on Health Research and Development (PCHRD) provided support for conduct of facility and household survey (Level II) as well as a price survey (level III) to assess several indicators for access to medicines in the Philippines.

Level II health facility indicators provide systematic data to measure outcomes on access (affordability and availability of key medicines and

geographical accessibility of dispensing facilities) and rational use of quality medicines including some indication on quality of medicines at health facilities and pharmacies. Data on these indicators are collected through the systematic surveys of public health facilities, public and private pharmacy and public warehouses. The results of the survey can be used to indicate the degree of attaining the objectives set by the pharmaceutical sector specifically the government and the National Medicines Policy. The results point out areas and gaps that should be addressed and which strategy can be prioritized for facilities, districts and countries. Global comparison can also be done to establish norms in access, use and to some degree quality of medicines made available from health facilities.

Level I and level II surveys (facility and population-based survey) should be done as a way to scope the comprehensive pharmaceutical situations – can be used to establish baseline data and to measure impact of strategies implemented. They can also be used to establish trends, particularly Level I survey which can tract global pharmaceutical situation regularly to measure trends. Information gathered specifically from Level I and II indicators are useful to reassess strategies, prioritize and strengthen pharmaceutical system components, and to synchronize programs and policies. In addition, policy-makers and managers will be provided with clearer picture of national and institutional problems. International agencies and donors can likewise focus on priority areas where impact can best be achieved. Professional groups and NGOs can focus advocacy and information campaigns using the data from the surveys.

2. COUNTRY BACKGROUND

The Philippines has a total area of 300,000 square kilometers composed of 7,107 islands, of which only about 3,144 are named. The country is subdivided into 17 regions. The most populous, the National Capital Region (NCR) or Metro Manila, has 16 highly urbanized cities and one urban municipality. The country is further divided into 81 provinces, 145 cities, 1,489 municipalities, and 42,036 barangays (NSCB, 2014).

As of August 2015, the population of the Philippines was pegged at 100,981,437 (2015 Census of Population). This figure is higher by 8.64 million compared with the population of 92.34 million in 2010, and by 24.47 million compared with the population of 76.51 million in 2000.

Of the 92.1 million household population in the Philippines, 50.4 percent are males and 49.6 percent are females. This resulted in a sex ratio of 102 males per 100 females (Philippine Statistics Authority, 2012).The life expectancy at birth for females born in the Philippines from the year 2005 to 2010 is 71.64 years. This projected life expectancy at birth for females is longer by 5.53 than the life expectancy at birth for males which is estimated at 66.11 years (Philippine Statistics Authority, 2011).

In 2010, the median age of the country's population was 23.4 years, which means that half of the ho (Philippine Statistic Authority, 2017)usehold population was younger than 23.4 years. Of the household population for the same period, 33.4 percent or 30.7 million were under 15 years of age. Children below 5 years old comprised 11.1 percent of the household population in the entire country. This indicates a highly “dependent” population.

2.1 Health sector

In 2016, the total expenditure on health was PhP 655 billion which is comprised by 96% current health expenditures (CHE) and 4% health capital

formation expenditures (HK). .Approximately 4.5% of the GDP is spent on health. Specific to CHE, majority at 56% is shouldered by households followed by government expenditures at 33%. The rest is covered by various types of corporations other than insurance (10%) and insurance corporations, 1% (Philippine Statistics Authority, 2017).

Under Republic Act (RA) 7875, a national health insurance program for all Filipinos was instituted in 1995. In the same year, the Philippine Health Insurance Corporation (PhilHealth) was established for this purpose. (1) With regards to outpatient services, however, only day surgeries, dialysis and cancer treatment procedures such as chemotherapy and radiotherapy are included in a member's benefits. (2) This leaves out a considerable portion of acute and chronic illnesses for which most patients seek outpatient consultation.

In 2016 approximately 91% of the population was covered by the National Health Insurance Program (NHIP). This translates to 93.4 million members and dependents that are entitled to avail themselves of benefits under the NHIP. By the end of the same year, PhilHealth accredited 100% hospitals licensed by DOH. In addition 2,557 Outpatient clinics were accredited as Primary Care Benefit (PCB) Package providers, while 3,102 and 1,973 providers were accredited for MCP and DOTS, respectively. Ninety-seven (97%) of all local government units nationwide have at least one accredited facility providing PCB. Ninety (90%) have at least one MCP provider and 86% have at least one DOTS Package provider (PhilHealth, 2016)

The country's public health care system is a devolved one. This was introduced in 1991 upon the passage of Local Government Code. This placed the burden of delivering basic services for health and implementation of health programs on the local government units. Under this system, there are three levels of referral. Barangay health stations and rural health units comprise the primary level. District and provincial hospitals are included in the secondary level while provincial and regional hospitals are in the tertiary level. The Department of Health

provides oversight in all these levels, acting in a governing role rather than in an implementing capacity.

2.2 Pharmaceutical sector

2.2.1 National Medicines (Drugs) Policy

The National Medicines Policy (NMP) of the Philippines was created under Memorandum Order No. 133, 1987. Its implementation, as well as plan that sets out activities, responsibilities, budget and timeline was put in place by Administrative Order No. 46 s. 1998 and the Department of Health's Department Order No. 32, 1994. In 2014, Administrative Order No. 2014-0033 or the Philippines Medicines Policy towards Kalusugang Pangkalahatan further sets the overall framework and strategic directions of the country towards equitable and sustainable access to quality essential medicines and its rational use.

In 2008, a significant addition to the medicines policy of the Philippines was made thru the signing into law of Republic Act (RA) No. 9502. Officially known as the "Universally Accessible and Quality Medicines Act of 2008", this act amended the Pharmacy Law (RA No. 5921), the Generics Act of 1988 (RA No. 6675) and the Intellectual Property Code (RA No. 8293). Under the new law, drug manufacturers are required to make available unbranded equivalents to their branded products. This was in concert with the amendment of the intellectual property code which allowed manufacturers to experiment, produce and register patented drugs before the expiration date of the patents. As such, marketing of generic drugs can be done immediately after patent expiration. Another significant change that the act imposed was the power to set price ceilings on drugs in the Philippine National Formulary or the Essential Drug List.

Between 2011 and 2016, the Department of Health also implemented a national medicines policy following the SARAH Medicines Access Framework. Under this framework, five major pillars of the Philippine Medicines Policy were identified. These are: 1) Safety, Efficacy and Quality (SEQ) of medicines, 2)

Affordability and availability, 3) Rational Drug Use, 4) Accountability, transparency and Good Governance and 5) Health Systems Support. These pillars cover all the components that are necessary to ensure that essential and quality medicines are accessible and available to achieve better health outcomes for all Filipinos, especially the poor.

2.2.2 Regulatory system

A formal medicines regulatory authority, funded through the regular budget from the government, is likewise in place. Republic Act (RA) 3720 and RA 9711 afforded the legal provisions for establishing the powers and responsibility of the Food and Drug Administration (FDA), the main medicines regulatory authority in the country. The FDA provides information on legislation, regulatory procedures, prescribing information, authorized companies, and approved medicines. Transparency and accountability in the regulatory body is promoted by the Norms of Behavior for Officials and Employees of the Department of Health (DOH Administrative Order (AO) 2007-042) and the Code of Conduct and Ethical Standards for Public Officials and Employees (Section 12 of Republic Act No. 6713).

Legal provisions for marketing authorization also exist. These are provided for by RA 3720. Upon request, the FDA issues a list of all registered pharmaceutical products. Further information on medicines registered in the country can be publicly accessed at the bureau of patents and from published materials such as the Philippine Pharmaceutical Directory (PPDr) and MIMS. According to 2017 DOH Pharmaceutical Division Annual Report to Congress, a total of 23,441 medicines have been registered with the FDA (DOH-PD, 2018). Manufacturers, wholesalers, distributors, importers and exporters of these medicines are regulated through the Revised Regulations for the Licensing of Drug Establishments and Outlets (DOH AO 1989-056).

A quality management system with an officially defined protocol for ensuring the quality of medicines is in place. Medicine samples are tested for medicines

registration. The Food, Drug and Cosmetic Act (RA 3720), FDA Act of 2009 (RDA 9711) and Special Law on Counterfeit Drugs (RA 8203) provide the legal framework for these activities. Regulatory procedures are also in place for ensuring the quality of imported medicines under RA 3729 and RA 6675.

In the Philippines, legal provisions for the licensing and practice of prescribers and pharmacies are in place. Prescribing by generic name is obligatory in both the public and private sectors under the Generics Act of 1988 (RA 6675). Generic substitution is permitted in both public and private pharmacies. However, no incentives to dispense generic medicines at public or private pharmacies exist.

Provisions in the medicines legislation covering promotion and/or advertising of medicines also exist. Guidelines on Advertisement and Promotions to Implement the Generics Act Of 1988 were outlined in the Department of Health's Administrative Order 1989-065. This document, however, like much of the legal policy for the regulation of the pharmaceutical sector, is yet to see a more current update.

2.2.3 Medicines supply system

The Government Procurement Policy Board (GPPB) provides oversight not just on the procurement of medicines of the Department of Health but also on the procurement by other government offices. In 2005, the Philippine International Trading Company (PITC) Pharma Inc. was created under Executive Order (EO) No. 442 to be the lead coordinating agency to make quality medicines available, affordable and accessible to the greater masses of Filipinos. PITC Pharma Inc. is the main buyer and supplier of drugs for the Department of Health and the Botika ng Barangay (BnB). The BnB refers to a drug outlet managed by a legitimate community organization (CO), non-government organization (NGO) and/or the Local Government Unit (LGU). This program was conceptualized with the hope of making cheaper medicines more available to the public. Guidelines for the establishment and operations of Botika ng Barangays and Pharmaceutical

Distribution Networks have been established (AO No. 144, s. 2004). Public sector medicines procurement is limited to medicines on the national EML.

RA 7160, otherwise known as the Local Government Code, has devolved health services to local government units, with each level procuring medicines on their own. Medicines are therefore procured at every LGU level, 80 provinces, 1600 municipalities and 75,000 barangays across the country. Also, within the DOH systems, the 72 hospitals under its jurisdiction are separate procuring entities. The purpose of such devolution was to make the procurement of medicines more locally responsive. However, an unavoidable effect of this system is a fragmented procurement system that is harder to regulate and audit.

Procurement of medicines in the public sector is guided by RA 9184, or the Government Procurement Act. Under this law, competitive bidding is the default mode for procurement but other mechanisms such as shopping and negotiated purchases can be undertaken. The practice of emergency purchases however is rampant in all level of the health care system.

With regard to drug distribution, the Pharmaceutical and Healthcare Association of the Philippines (PHAP) reported that as of 2008, drugstores, majority of which were private chain stores, were still the leading channel of distribution (89.25%). On the other hand, government hospitals only held around 3% of the distribution of medicines.

In July 2009, President Gloria Macapagal-Arroyo also signed Executive Order 821 prescribing the maximum retail price for drugs and medicines that address diseases that account for the leading causes of mortality and morbidity in the country. Some of the diseases specifically mentioned were: hypertension, diabetes, common bacterial infection, amoebiasis and cancer.

Aside from the policy guidelines regarding medicine procurement and distribution, the government through the Department of Health (DOH) implemented several programs that aim to further improve access to medicines. Ho (2015)

outlined these programs. First is the program on Complete Treatment Pack (COMPACK) that aims to increase patients' access to quality essential medicines while taking into consideration the rational drug use and availability to those who are in the grassroots level. Initially, the program targeted the poorest families enrolled in the Conditional Cash Transfer (CCT) program of the Department of Social Welfare and Development (DSWD), and was implemented in selected municipalities where these families reside.

The medicines under the program were first made available in September of 2011 and the program shall remain effective (and shall continue to receive funding) until PhilHealth's PCB1 and PCB2 packages have been completely rolled out and fully-implemented. In 2013, program beneficiaries were the 5.2 million poorest families determined by the National Household Targeting System for Poverty Reduction (NHTS-PR). In the latter part of 2013, the coverage of the DOH Compack program was extended to all Filipinos and made available to the general public (Ho, 2015).

Ho (2015) also mentioned the Primary Care Benefit Package 1 (PCB1) that aims to expand the number of primary care services available to PhilHealth members. The program does not directly provide free medicines to its target beneficiaries. Rather, it pays for a panel of obligated services, which includes consultation and treatment of four of the most common causes of primary care consults. These are: 1) Asthma; 2) Acute Gastroenteritis (AGE) with no or mild dehydration; 3) Upper Respiratory Tract Infection/Pneumonia (minimal and low risk), and 4) Urinary Tract Infection. PCB1 took effect on April 1, 2012, and remains effective until rescinded. In July 2014, the coverage was further expanded to include hypertension, diabetes and dyslipidemia under Primary Care Benefit Package 2 (PCB2) package.

In order to expand further the services provided by the PCB 1 and 2 programs, PhilHealth rolled out in 2015 the "*Tamang Serbisyo sa Kalusugan ng Pamilya*" (Tsekap)" to the indigent and sponsored members. Included in the program are medicines for ten (10) common conditions that can be managed at a

primary care set up such as asthma, acute gastroenteritis, upper respiratory tract infection, pneumonia, urinary tract infection, diabetes mellitus, hypertension, dyslipidemia, deworming and ischemic heart disease (PhilHealth, 2015)

TB remains a health challenge in the country and the country has a long-standing national TB program as stipulated in Republic Act No. 1136 (1954) or known as "An Act Reorganizing the Division of Tuberculosis in the Department of Health." In 2009, mortality rate for all forms of tuberculosis was reported at 27.6 per 100,000 population while the 2011 data estimate the prevalence rate of Tuberculosis at 4.84 per 1,000 population.

In response to this situation, Congress passed in July 2015, RA 10767 or "The Comprehensive Tuberculosis Elimination Plan Act." The law provides yearly budget for free medicines to treat tuberculosis thereby ensuring sufficient supply of anti-TB drugs at the local health centers, and through coordination with the local government units. The law also mandates the stricter implementation of "no-prescription, no anti-TB drugs policy" implemented by the Food and Drug Administration (FDA).

2.2.4 Medicines financing[1]

The country's total health expenditures grew from PhP 593 billion in 2015 to PhP 655 billion in 2016 or by 10.5 percent at current prices. The contribution to Gross Domestic Product (GDP) was at 4.5 percent.

FIGURE 1 Total Health Expenditures growth rates, current prices, 2014 to 2016

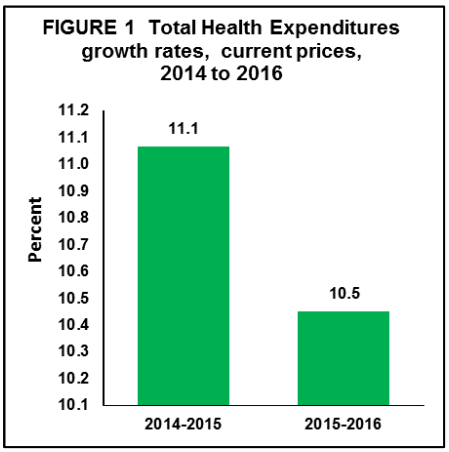
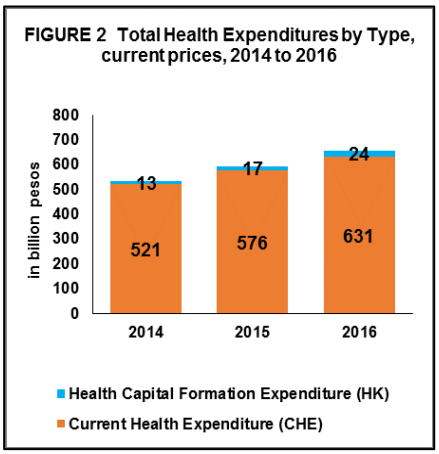


FIGURE 2 Total Health Expenditures by Type, current prices, 2014 to 2016



[1]Philippine Statistic Authority, 2017

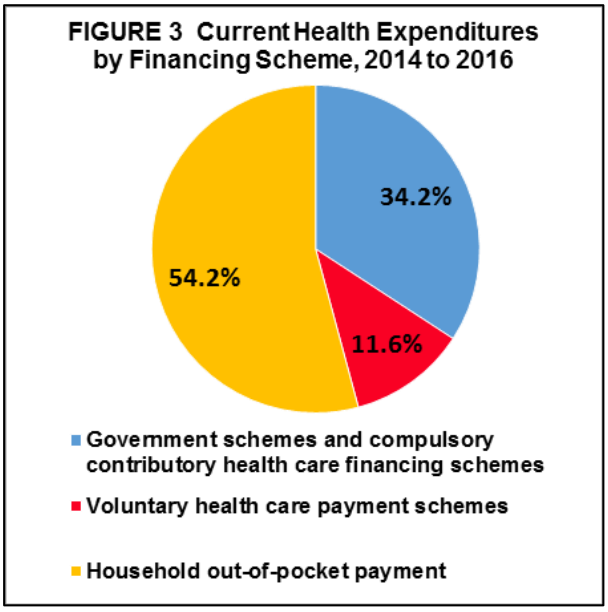
Total health expenditures comprised of current health expenditures (CHE) and health capital formation expenditures (HK). HK in government sector accounted for 3.7 percent of the Total Health Expenditures (THE). Per capita health spending of Filipinos in 2016 grew by 8.7 percent to PhP 6,345. In real terms, per capita health expenditure of Filipinos amounted to PhP 4,406 per year.

Table 1: Per Capita Health Expenditure through the Years

ITEM	AMOUNT			GROWTH RATE	
	2014	2015	2016	2014-2015	2015-2016
Per Capita Health Expenditure (in pesos, at *current* prices)	5,346	5,840	6,345	9.2	8.7
Per Capita Health Expenditure (in pesos, at *constant* prices) 1/	3,833	4,127	4,406	7.7	6.8
Population (in millions) 2/	99.9	101.6	103.2	1.7	1.7

1/ Derived using the consumer price index (CPI) for all items
2/ The annual estimates are based on official 2010 Census-based population projections

Household-out-of pocket payment (OOP) posted PhP 342 billion or 54.2 percent of CHE in 2016, followed by government schemes and compulsory contributory health care financing schemes at PhP 216 billion or 34.2 percent. Voluntary health care payment schemes contributed PhP 73 billion or 11.6 percent.



Hospitals, specifically general hospitals were the recipients of OOP at PhP 259 billion or 41.1 percent. Pharmacies came in second at PhP 173 billion (27.5 percent); followed by providers of preventive care at PhP 53.3 billion (8.5 percent).

Only 12% of this value was government expenditure. There is a national policy to provide some medicines free of charge (i.e. patients do not pay out-of-pocket for medicines) at public primary care facilities. The following patients receive medicines for free: patients who cannot afford them, children under 5 years of age, pregnant women and elderly persons. No fees are supposed to be charged at primary care facilities and prescribers in the public sector never dispense medicines.

PhilHealth serves as the country's public health insurance. It covers for the cost of medicines. This insurance, however, has a cap, and is limited to inpatient settings. As stated earlier, outpatient benefits are limited to day surgeries, dialysis and cancer treatment procedures leaving out a large portion of acute and chronic illnesses for which patients seek outpatient services. However, with the implementation of PCB1 and and PCB2, the health benefits provided by the PhilHealth has greatly expanded.

The Department of Health (DOH) also has Electronic Essential Drug Price Monitoring System (e-EDPMS) to support the establishment of an efficient and effective system and procedures for collecting price and inventories of essential drugs and other drugs stated in RA 9502. The program allows the DOH and the Department of Trade and Industry (DTI) to monitor essential drug prices, as well as, stocks of medicines in the local market. This allows the monitoring of overpricing and non-compliance to efforts of the DOH to regulate excessive price of drugs. The initiative also aims to educate consumers on prevailing market prices of essential drugs to enable them to make informed choices (Department of Health, no date).

2.2.5 Rational use of medicines

The Philippines National Formulary (PNF) defines the national Essential Medicines List (EML). Regularly updated and readily downloadable from the DOH website, the PNF is being used as basis for public sector procurement. The Formulary Executive Council of the DOH is responsible for the selection of products on the national EML and is regularly updated in cycles. Antibiotics, injections, narcotics and psychotropic drugs, according to law, should never be sold over the counter without a prescription. However, the actual enforcement of this law is weak.

3. METHODOLOGY

3.1 Overall Methodology

The survey with Level II indicators is a very important part of the pharmaceutical sector assessment. These indicators measure the outcome and impact of strategic pharmaceutical programs in a country, such as improved access, better quality and improved practices on the rational use of essential medicines. Access is measured in terms of the availability and affordability of essential medicines to the public sector, especially those who are marginalized and underprivileged. Measuring the actual quality of medicines by testing samples can be expensive. Instead, the presence of expired medicines on pharmacy shelves, as well as, the adequate handling and conservation conditions are indicators of the quality of medicines available to the population. Finally, rational use is measured by examining the prescribing and dispensing habits of health providers, and the implementation of key strategies such as standard treatment guidelines (STG), and essential medicines lists (EML). The list of medicines to be included in the study will include the latest available DOH's list of essential medicines. These essential medicines are the key medicines for the most common causes of morbidity in the country.

Level II indicators are measured in public health facilities, private drug outlets, and in warehouses supplying the public sector.

The WHO-HAI study design requires the selection of six (6) survey areas. The 2008-2009 WHO survey identified the following study sites which are also the sites for the 2017 study. The survey was done in the following areas:

1. La Union in Region I
2. Pampanga in Region III
3. Manila in National Capital Region (NCR)
4. Palawan in Region IV-B
5. Capiz in Region VI
6. Misamis Oriental in Region X

The said sites were selected based on the following sampling methodology on the selection of geographic area in the 2008-2009 WHO study:

1. Largest urban area, for which the National Capital Region was selected.
2. Five other administrative areas randomly selected in two stages with probability proportional to population size.

   Stage 1 - Administrative regions were classified according to population size

   Stage 2 – Administrative regions were randomly selected for North Luzon, Central Luzon, Southern Luzon, Visayas and Mindanao

This study utilized a standardized methodology for health facility and household surveys developed by the World Health Organization (WHO)[4] for country-level pharmaceutical situation assessment. The household survey, measuring access to and use of medicines with specific RUM indicators, was conducted in the aforementioned six geographic regions. In each region, 8 reference public health care facilities, including their respective pharmacies, were selected to participate in the Health Facility Survey. This was done parallel with the household survey.

For the household survey, 30 households within the vicinity of each referent public health facility were selected through purposive cluster sampling. A total of 1080 household respondents were selected and interviewed through a structured paper questionnaire, to gather information on the socioeconomic level of households, and to collect data on access to, and use of medicines, as well as, opinions and perceptions about medicines.

For the health facility survey, the sample, based on the WHO protocol, targeted a total of 48 Public Health Facilities with their pharmacies; 48 Private Health Facilities, 48 NGO or CSO health facilities; 72 private pharmacies, and 6 regional or provincial warehouses. Data entry and analysis were done using EpiInfo software.

3.2 Methodology for the Health Facility Survey

Level II indicators are measured in public health facilities, private drug outlets, and in warehouses supplying the public sector. Eight public health facilities were selected in each of the six (6) identified geographic focus of the study. The main or the largest public health facility was included in this sample. The additional seven public facilities were selected at random from all middle level public health care facilities per survey area. Thus, a total of eight (8) public health facilities and their respective dispensaries were included in the sample per site. One regional or provincial warehouse that supplies the public sector was also visited in each survey area.

Eight private health facilities per geographic site were targeted as part of the health facility survey. On top of this, twelve private pharmacies or drug outlets per site or a total of 72 private pharmacies were surveyed as part of the study sample. Table 2 below summarizes the number of facilities included in the Level II facility survey. The exact distribution is further depicted in Figure 4.

Table 2: Summary of sample facilities, Level II Facility Survey, Philippines 2017 Survey

Research Sites	Public Health Facilities		Private Health Facilities		Warehouse		Health NGO/CSO/ or Mission		Private Pharmacies	
	Number of health facilities to be included in the survey									
	Target	*Actual*	*Target*	*Actual*	*Target*	*Actual*	*Target*	*Actual*	*Target*	*Actual*
Capiz	8	8	8	5	1	1	8	0	12	12
La Union	8	8	8	7	1	1	8	0	12	12
Misamis Or.	8	8	8	8	1	1	8	0	12	12
Palawan	8	6	8	5	1	1	8	0	12	4
Pampanga	8	8	8	8	1	1	8	0	12	12
Manila	8	8	8	8	1	1	8	4	12	12
TOTAL	**48**	46	**48**	41	**6**	6	**48**	4	**72**	64

Figure 4: Geographic Location of Selected Study Areas

For each of the facility enumerated, a specific Survey Form was used. This standardized the method of gathering information and the quick and efficient calculation of the needed indicators. Table 3 below summarizes the Level II indicators and the corresponding survey forms per indicator.

Table 3: Summary list of indicators and corresponding survey form used to collect the data,
Level II Facility Survey, Philippines, 2017 Survey

	Indicator	***Survey Form Item***
	Access	
1	Availability of key medicines in public health facility dispensaries, private drug outlets and warehouses supplying the public sector (country list)	1, 10, 15
	Mean availability of originator brand and generic medicines in the public/private sector	2, 11
2	% of prescribed medicines dispensed or administered to patients at public health facility dispensaries	6
3	Average stock-out duration in public health facility dispensaries and warehouses supplying the public sector	4, 16
4	Adequate record keeping in public health facility dispensaries and warehouses supplying the public sector	4, 16
5	Geographical accessibility of public health facility dispensaries and private drug outlets	6, 14
6	Indicators related to affordability and prices of drugs: - Patient prices for generic medicines/innovator drug in the public/private sector	2, 11

	- Prices of generic/innovator drug in public/private sector compared to international price index. - Affordability-ratio of cost to treat common conditions using standard regiments, to the lowest daily government worker wage for X(condition) and X(condition) (days‟ wages to purchase lowest priced generic medicines from public and private sector)	
	Quality	
1	% medicines expired in public health facility dispensaries, private drug outlets and warehouses supplying the public sector	1, 10, 15
2	Adequacy of storage conditions and of handling of medicines in public health facility dispensaries and warehouses supplying the public sector	5, 13, 17
	Rational Use of Medicines	
1	% medicines adequately labeled at public health facility dispensaries and private drug outlets	6, 14
2	% patients informed on how to take medicines at public health facility dispensaries and private drug outlets	6, 14
3	Average number of medicines per prescription at public health facility dispensaries and public health facilities	6, 7
4	% patients prescribed antibiotics in public health facilities	7
5	% patients prescribed injections in public health facilities	7
6	% prescribed medicines on the essential medicines list at public health facilities	7
7	% medicines prescribed by generic name (INN) at public health facilities	7
8	Availability of standard treatment guidelines at public health facilities	8

9	Availability of essential medicines list at public health facilities	8
10	% tracer cases treated according to recommended treatment protocol/guide at public health facilities	9
11	% prescription medicines bought with no prescription	14
Other Information		
1	% of facilities that comply with the law (presence of a pharmacist)	Sec. A, C
2	% facilities with pharmacist, nurse, pharmacy aide/ health assistant or untrained staff dispensing	Sec. A, C
3	% facilities with doctor, nurse, trained health worker/health aide prescribing	Sec. B
4	% facilities with prescriber trained in RDU	Sec. B

3.3 Medicine Price Survey Methodology

The methodology for measuring drug prices as developed by the World Health Organization (WHO) and Health Action International (HAI), and was used for the 2002, 2005, 2008 medicine price surveys, was also used in this study. The goal of the survey was to document and compare the prices, affordability, and availability of medicines in different sectors: the public sector procurement, the public sector patient, and the private sector patient. The WHO/HAI methodology specifies a core list of medicines to be surveyed. These are the medicines commonly used for treating a range of chronic and acute conditions. It also includes items for information on the specific dosage, form, and strength that need to be collected for each medicine. This ensures the completeness of data on comparable products, to allow international and cross-country comparisons. For each medicine, the innovator brand and its lowest-priced equivalent generic brand

were included in the survey. The lowest-priced generic medicine was determined in each medicine outlet.

Availability was calculated as the percentage of establishments where specific medicine included in the DOH list of essential medicines can be found. However, the availability data was only applicable on the day of the data collection in each particular facility. The availability percentage does not, in anyway, reflect the average monthly or yearly availability of medicines in individual facilities.

For the price analysis, specific medicines needed to be available in at least four pharmacies for the medicine's price data to be included in the computation. This, however, did not apply to procurement prices where a single data point was used. Medicine prices gathered during the survey were not expressed as currency units but rather, as ratios relative to a standard set of international reference prices:

$$\textit{Medicine Price Ratio (MPR)} = \frac{\textit{median local unit price}}{\textit{international reference unit price}}$$

The ratio is thus an expression of how much greater or lesser the local medicine price is compared with the international reference price. For example, an MPR of 2 means that the local medicine price is twice as much that of the international reference price. Median price ratios facilitate cross-country comparisons of medicine price data.

The study used the 2015 reference prices, the latest available from the International Drug Price Indicator Guide. These reference prices are the median values of recent supplier prices (or buyer prices where no supplier prices are available) offered by both for-profit and not-for-profit suppliers to international not-for-profit agencies for generic products. These agencies typically sell in bulk quantities to governments or large non-government organizations (NGOs) so the prices are relatively low. This practice illustrates efficient bulk procurement without the costs of shipping or insurance.

Results were presented for individual medicines as well as for the overall “basket” of medicines included in the survey. Summary results for the basket of medicines have been shown to provide a reasonable representation of medicines in the country, and the price conditions in the market.

As averages could be skewed by outlying values, median values will be used in the analysis to have a better representation of the midpoint value. The magnitude of price and availability variations were presented as the interquartile range. A quartile is a percentile rank that divides a distribution into four equal parts. The range of values containing the central half of the observations, that is, the range between the 25th and 75th percentiles, is the interquartile range.

The affordability of treating several common illnesses was assessed by comparing the total cost of medicines at the prescribed standard dose with the daily wage of the lowest-paid unskilled government worker. Although it is difficult to assess true affordability, treatments costing one day’s wage or less (for a full course of treatment for an acute condition, or a 30-day supply of medicine for chronic diseases) are generally considered affordable.

As shown in Table 4, the assistance of several individuals and institutional partners were sought to successfully implement the survey. Supervisors from each team were briefed about their specific roles and trained on procedures which they re-echoed to their respective teams prior to the start of data collection. The training of team leaders was done in April 2017. Actual data collection took place between May and December 2017.

Table 4: Summary of team leaders and members from six survey areas

La Union	Pampanga	Metro Manila	Palawan	Capiz	Misamis Oriental
-	Partner Inst: ***Holy Angel Univ.***	-	Partner Inst: ***Palawan Studies Center – Palawan State Univ.***	Partner Inst: ***Filamer Christian Univ.***	Partner Inst: ***Research Institute for Mindanao Culture – Xavier Univ.***
Dr. Fatima Carsola	**Dr. Al Biag**	**Ms. Franz Magana**	**Ms. Jackielyn Abela**	**Ms. Agnes Custodio**	**Mr. Michael Montejo**
Ms. Only Hufana	Dr. John Federick Yap	Ms. Jenneth De Guzman	Ms. April Liao	Ms. Juna Dieta	Ms. Prospercora Vega
Ms. Jillian Laigo		Ms. Maridel Ortaliza	Mr. Michael Doblado	Dr. Nelly Guillen	Ms. Myla Guadaquever
Ms. Rosemarie Candong		Mr. Jarryd Ambrocio	Ms. Dhonabelle Adona	Ms. Ermofe Garbosa	Ms. Esther Briones
Mr. Bhert Pugrad		Ms. Josephine Serranilla	Ms. Reina Solis	Ms. Lea Alayon	Mr. Rex Sutacio
Mr. Jaywee Avisa				Ms. Vicenta Miranda	Ms. Alberta Pondoc

After review of completed Survey Forms, data were encoded in Summary Forms 1–4 and Workbook in Excel® that permitted indicator calculation. Indicator measures on each survey forms were calculated manually and summaries were entered in an automated excel spread sheet.

For data on drug prices and affordability the WHO-HAI work book was used.

3.4 Methodology for the Household Survey

3.4.1 Selection of geographic areas and reference public health care facilities

The six geographic sites included in the study are: La Union province in Region 1, Pampanga province in Region 3, the City of Manila in the National Capital Region (NCR), Palawan province in Region 4, Capiz province in Region 6, and Misamis Oriental province in Region 10. For each site, the sample of reference facilities were identified by first selecting the main public hospital. An additional seven public medicine facilities (e.g. hospital medicine dispensaries) per survey area were then selected at random from a list of all public health care facilities capable of carrying a full supply of essential medicines.

3.4.2 Selection of households

The WHO methodology requires the selection of 30 households per public health care facility included in the health care facility survey. The largest urban area, the National Capital Region, accounted for one-sixth of the total households. A similar contingent of households came from each of the five remaining research sites.

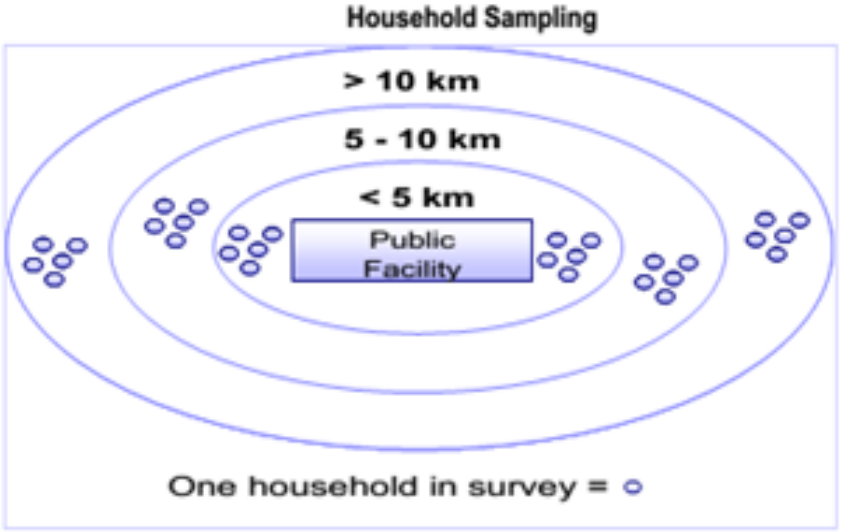
In accordance with the WHO methodology, households were selected purposively. The reference health care facility was the central reference point; the first two households were selected randomly in opposite directions and in clusters of five households defined as follows: two clusters were within a 5km radius from the facility, two clusters were between 5 and 10 km from the facility, and two clusters were beyond 10 km. In each reference facility, a total of thirty households were selected as illustrated in Figure 5.

A total of 1,080 households were surveyed for the six geographic sites. After completing an interview with the respondent of the first household of each cluster (or scheduling one for a later time), data collectors skipped several households before selecting the next household. Not every household was able to participate in the survey; in such cases, the next household was chosen as a replacement.

Interviewers were trained to use judgment in selecting households. General rules of thumb applied were:

a. Households should not be next to each other;
b. Households should not be excluded if respondents are not immediately present but an appointment can be scheduled to interview them later in the same day; and
c. Households should have an economic status that is generally representative of the area in terms of dwelling condition, size, organization of the household premises, and water supply.

Figure 5: Selection procedure for the sample households using the WHO prescribed sampling procedure.



3.4.3 Data Entry

Survey data were entered by a team of data encoders. EpiInfo software was used for data entry. Erroneous entries and potential outliers were verified, and corrected as necessary through data cleaning.

3.4.4 Ethical Considerations

The informed consent of participants for the KIIs and FGDs, as well as, respondents for the household survey, were secured before interviews and discussions were conducted. The invited KII and FGD participants were also informed about the consent process in the invitations and appointment letters that were sent to them. The informed consent form included the following information:

1. The context and type of study and its objectives.
2. Information about the Sampling.
3. Summary of Risks and Benefits.

The proposal was also subjected to an ethics review and was given a clearance to proceed by a duly accredited Ethics Review Committee of the Philippine Health Research Ethics Board (PHREB).

3.5 Limitations of the study

The following are the limitations of the study:

a. According to the WHO, the Level II core outcome indicator survey is designed to obtain relevant information from a simple-as-possible data collection process and small sample size. Larger samples give more precise results but they are costly, time consuming and require a more complex logistic infrastructure. Sample size is therefore a balance between what is desirable and what is feasible. The best sample size will be the smallest one that will result in estimates with the desired degree of precision.

b. The survey has been designed to provide a picture of the national pharmaceutical situation in a country. The sample sizes used in the study however are statistically not large enough to make inter-facility comparisons. For patient care indicators, for example, a minimum sample size of 100 would be necessary in order to make comparisons between facilities. This survey uses a sample size of 30. However, provided that majority of the data is collected and the results are statistically different, comparisons between geographic regions can be made. Regional comparisons may be of interest where there is especially wide variation or contrasts, particularly in a group of related indicators. Regional comparisons should be done sparingly as not all geographic regions are represented and over-emphasizing the six regions included in the study may detract focus from the study's significance as a national survey.

c. In one survey area, many private pharmacies refused to provide the needed information even after repeated visits by the local team. The site ended the study with four (4) pharmacies which is significantly lower compared with the 12 pharmacies interviewed in other areas.

d. The results of the study should be interpreted within the time period and sampling frame of the study. The recent years saw the enactment and implementation of additional access to medicines policies that affected the access and availability of essential medicines in the country. The study was conducted before some of these policies were implemented, hence, the findings serve as a reference for understanding the possible effects of these policies after these were subsequently implemented.

4. RESULTS AND DISCUSSION

4.1 Access

4.1.1 Availability

There are two availability indicators based on the country list and global list of medicines included in the study.

The key medicines list for the Philippines was identified by the DOH. It is a key list of medicines for the common health conditions at the primary health care level. Medicines procured by the vertical programs (i.e. Expanded Program on Immunization, TB, Malaria, HIV/AIDS) were not included in the list of medicines. The key medicines to treat common conditions that were included are the following:

Table 5: WHO Global Medicine List

Generic name and strength (unit)
1) Amitriptyline 25 mg cap/tab
2) Amoxicillin 500 mg cap/tab
3) Bisopropolol 500 mg cap/tab
4) Captopril 25 mg cap/tab
5) Ceftriaxone 1g/vial injection
6) Ciprofloxacin 500 mg cap/tab
7) Co-trimoxazole 8 + 40 mg/ml susp
8) Diazepam 5 mg cap/tab
9) Diclofenac 50 mg cap/tab
10) Metformin 500 mg cap/tab
11) Omeprazole 20 mg cap/tab
12) Paracetamol 25mg/ml syr/susp
13) Salbutamol 0.1 mg/dose inhaler
14) Simvastatin 20 mg cap/tab

A global list of medicines from the WHO was compared with the country list to come up with the final list of medicines included in the study. The list includes the core list of medicines used in pharmaceutical assessments and the key medicines used to treat the most common causes of morbidity in the country. It will allow comparison of drug prices and affordability of the Philippine situation with other countries. Table 6 below enumerates the list of medicines included in the study including the brand or generic product name, and manufacturer of the brand name.

Table 6: List of Medicines included in the study, Level II Facility Survey, Philippines, 2017 Survey.

Global List			
Generic Name	***Preparation***	***Brand Name***	***Manufacturer***
Amitriptyline	25 mg cap/tab	Tryptizol	MSD
Amoxicillin	500 mg cap/tab	Amoxil	GSK
Bisopropolol	500 mg cap/tab	Concore	Merck
Captopril	25 mg cap/tab	Capoten	BMS
Ceftriaxone	1g/vial injection	Rocephin	Roche
Ciprofloxacin	500 mg cap/tab	Ciprobay	Bayer
Co-trimoxazole	8 + 40 mg/ml susp	Bactrim	Roche
Diazepam	5 mg cap/tab	Valium	Roche
Diclofenac	50 mg cap/tab	Voltaren	Novartis
Metformin	500 mg cap/tab	Glucophage	Merck
Omeprazole	20 mg cap/tab	Losec	Astra Zeneca
Paracetamol	25mg/ml syr/susp	Panadol	GSK
Salbutamol	0.1 mg/dose inhaler	Ventolin	GSK
Simvastatin	20 mg cap/tab	Zocor	MSD
National List			
Generic Name	***Preparation***	***Brand Name***	***Manufacturer***

0.9% Sodium Chloride IV fluid	1 L for inj.	0.9% Sodium Chloride	Euro-med
5% dextrose in lactated ringer's	IV fluid 1 L for inj.	5% dextrose in lactated ringer's solution	Euro-med
Amlodipine	10 mg tab	Norvasc	Pfizer
Amoxicillin	(as trihydrate) 250 mg/ml granules/ powder for susp	Amoxil	GSK
Aspirin	80 mg tab	Aspilets	LRI
Atenolol	50 mg cap/tab	Tenormin	Astra Zeneca
Cefuroxime	500 mg cap/tab	Zinnat	Duncan
Cefuroxime	750 mg vial for inj.	Zegen	UAP
Celecoxib	200 mg cap/tab	Celebrex	Pfizer
Co-trimoxazole	800 mg tab	Bactrim	Roche
Co-trimoxazole	Sulfamethoxazole + 40 mg trimethoprim per 5 ml susp	Bactrim	Roche
Co-trimoxazole	Sulfamethoxazole + 80 mg trimethoprim per 5 ml susp	Bactrim	Roche
Doxycycline	100 mg cap	Vibramycin	Pfizer
Enalapril	10 mg tab / cap	Renitec	MSD
Erythromycin	500 mg tab / cap	-	-
Glibenclamide	5 mg tab	Daonil	Sanofi
Gliclazide	80 mg tab	Diamicron	Servier
Hydrochlorothiazide	12.5 mg tab / cap	Dichlotride	MSD
Ipratropium + Salbutamol	500 mcg + 2.5 mg x 2.5 mL nebule	Duavent	UAP
Lagundi	300 mg tab	PITAHC Lagundi	PITAHC

Losartan	50 mg tab	Cozaar	MSD
Mebendazole	50 mg / mL	Antiox	J&J
Mefenamic acid	500 mg tab/cap	Ponstan	Pfizer
Metoprolol	50 mg tab/cap	Neobloc	GXI
Metronidazole	500 mg tab	Flagyl	Sanofi
Salbutamol	1 mg/mL, 2.5 Ml	Ventolin	GSK
Sambong	250 mg tab	PITAHC Sambong	PITAHC

4.1.1.1 Availability of key medicines

For availability, the coordination group of the assessment may establish target values considering the country context, but it is reasonable that good results here should be near to 100%. Availability can also be linked to stock out duration from Survey Forms (SF) 1 & 10.

Table 7 shows that the availability of key medicines are: 69.2% at public health facilities, 74% at private pharmacies and 62.8% at central-district warehouses. Between 2009 and 2017, availability in public health facilities increased from 53% to 69.2% but decreased in private drug outlets from 100% to 74.4%.

Table 7: Availability of key medicines in public health facilities, private drug outlets and warehouse, Level II Facility Survey, Philippines, 2017 Survey.

	National (Median)	25th Percentile	75th Percentile
Public health facilities	69.2	46.7	79.5
Private drug outlets	74.4	60.9	84.6
Warehouses supplying the public sector	62.8	48.3	66.7

4.1.1.2 Availability of medicines from the global list

The mean percent availability of medicines in the global list show that in the public sector originator brands was 11.9% available as compared with 28.8% mean availability in the private sector. Lowest priced generic equivalents had a highest mean percent availability of 54.2% in other medicine outlets (NGOs), followed by 44.7% mean availability in the private sector, and 41.5% at the public sector.

Table 8: Mean availability of medicines (global list) on the day of data collection, public and private sectors, Level II Facility Survey, Philippines, 2017 Survey.

	Public sector (n =45 outlets)		Private sector (n = 105 outlets)		Others (NGO) (n = 4 outlets)	
	All medicines (n = 43 medicines)		All medicines (n = 43 medicines)		All medicines (n = 43 medicines)	
	Originator brand	Lowest price generic	Originator brand	Lowest price generic	Originator brand	Lowest price generic
Mean availability	11.9%	41.5%	28.8%	44.7%	11.3%	54.2

4.1.1.3: Stock-out duration and adequate record keeping

The average stock out duration is another indicator used to describe availability of medicines. Table 9 shows that the average stock out duration for public health pharmacies was 69 days while it was 63 days for central-district warehouses. Private sector outlets had the longest without drugs at 74 days. This suggests that there are some delays when public health pharmacies replenish their medicine stocks from central warehouses. Sixty-five percent of public health facility dispensaries and 53.8% of the warehouses were observed to follow adequate record keeping. These less than ideal values are suggestive that stock out periods may even be longer than the reported values.

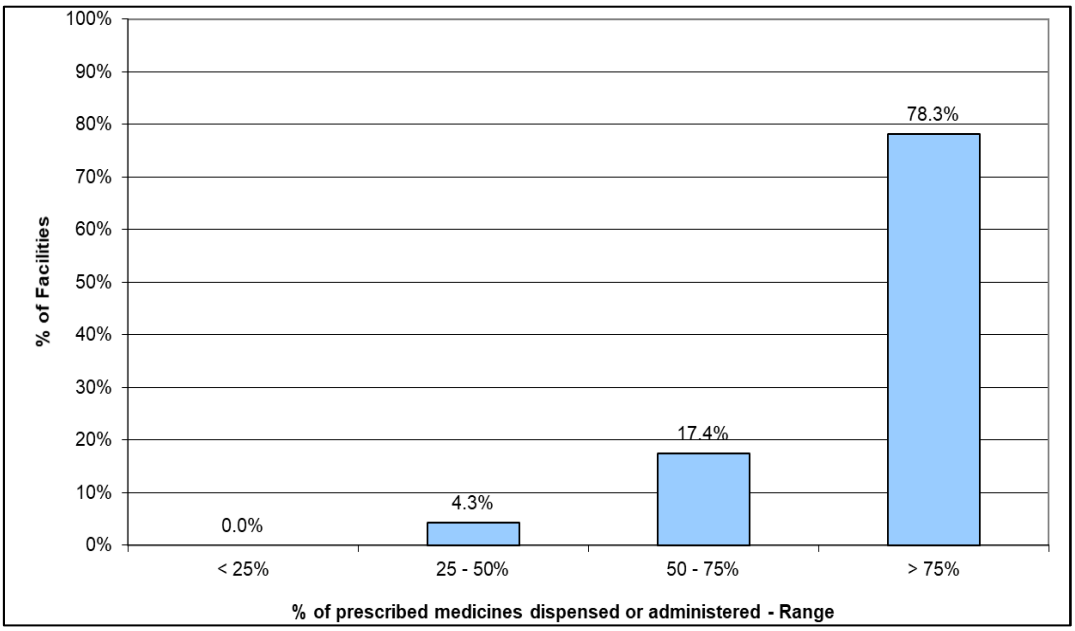
Table 9: Average stock-out duration (in days) and adequate record keeping, Level II Facility Survey, Philippines, 2017 Survey.

Indicator	National (Median)	25th Percentile	75th Percentile
Average stock out duration (in days) in			
public health facility dispensaries	69.2	46.7	79.5
private sector	74.4	60.9	84.6
warehouses supplying the public sector	62.8	48.3	66.7
Adequate record keeping in			
public health facility dispensaries	65.4	46.2	79.5
warehouses supplying the public sector	53.8	41.0	66.7

4.1.1.4 Proportion of prescribed medicines actually dispensed

Another indicator of access is the % of prescribed medicines dispensed or administered to patients at public health facility dispensaries. The median for this indicator is 86.9 indicating a high percentage of prescribed medicines dispensed or administered to patients at public health facility dispensaries. Furthermore, the figure below shows that 78.3% of the facilities were able to dispense more than 75% of the prescribed medicines while 17.4% of the facilities were able to dispense 50-74% of the prescribed medicines.

Figure 6. Distribution of facilities according the percentage of prescribed medicines dispensed or administered. Level II Facility Survey, Philippines, 2017 Survey.



4.1.2 Geographic access

Geographic access is defined in the study as the time the patients have to travel to reach either the public health facility dispensary or a private drug outlet, and the proportion of transport cost to the minimum daily salary. The data shows that the sampled respondents had access to the public health facility dispensaries and private drug outlets and they need not travel more than one hour to reach these health facilities. The median transportation cost was computed at PhP 22.00 to reach the public health dispensaries, and PhP 40.00 to reach the private drug outlets. These figures indicate that public health dispensaries are quite accessible for those who are in need of medical services.

Table 10: Indicators for Geographic Access, Level II Facility Survey, Philippines, 2017 Survey.

Geographical accessibility	National (Median)	25th percentile	75% percentile
% patients taking more than one hour to travel to			
public health facility dispensaries	0.1	0.0	0.2
private drug outlets	0.2	0.1	0.3
Average transportation cost (in PhP) to			
public health facility dispensaries	21.7	14.0	58.4
private drug outlets	40.2	28.3	111.9
Average transport cost percentage to minimum daily salary to			
public health facility dispensaries	0.1	0.0	0.2
private drug outlets	0.1	0.1	0.3

4.1.3 Prices and affordability

4.1.3.1 Public Sector Procurement prices

The public sector procurement data below refers to the data from the regional/provincial warehouses in the project sites.

Table 11: Public sector procurement. Level II Facility Survey, Philippines, 2017 Survey.

Product type	Median MPR	25th percentile	75th percentile
Originator brand (n= 24 medicines)	**3.33**	**1.79**	**9.28**
Lowest price generic (n= 31 medicines)	**3.63**	**2.04**	**8.53**

Based on the median MPRs, the public sector is procuring generics at 3.63 times their international reference prices, and originator brands at 3.33 times their

international reference prices (Table 11). The interquartile range shows substantial variation in median price ratios across individual medicines. Further investigation is needed to identify the determinants of these variations in purchasing efficiency.

4.1.3.2 Public Sector Patient Prices

The public sector patient prices refer to prices in the public health facilities included in the survey.

Table 12: Public sector patient prices. Level II Facility Survey, Philippines, 2017 Survey.

Product type	Median MPR	25th percentile	75th percentile
Originator brand (n= 23 medicines)	**3.52**	**2.06**	**12.31**
Lowest price generic (n= 27 medicines)	**3.31**	**2.41**	**13.67**

The results above indicate that in the public sector, lowest price generic medicines are generally sold at 3.31 times their international reference price. The originator brands are generally sold at 3.52 times their international reference price with substantial variation in MPRs across individual originator and generic medicines in the public sector. Both generic and originator brands are still being sold at triple the international reference price. In 2009, patients were paying 26 times more for originator brand medicines, and 8 times more for generic medicines compared with that of the international reference price.

Table 13: Median MPRs for medicines found in both public procurement and public sector medicine outlets (final patient prices). Level II Facility Survey, Philippines, 2017 Survey.

Product type	Median MPR Public Procurement	Median MPR Public Patient Prices	% difference patient prices to procurement
Originator (n= 22 medicines)	**2.97**	**3.50**	**17.8%**
Lowest price generic (n = 27 medicines)	**2.66**	**3.31**	**24.1%**

In the preceding table, only those medicines found in both public procurement and public sector medicine outlets were included in the analysis to allow for the comparison of purchase price to final patient price. Results show that final patient prices for generic medicines in the public sector are 24.1% higher than procurement prices for generic equivalents. On the other hand, patient prices for originator branded medicines are 17.8% higher in public sector medicine outlets compared with public procurement prices. Interestingly enough, there is a bigger price difference between procurement price, and the actual amount paid by the patients for generic medicines compared with that of originator brand medicines.

4.1.3.3 Private sector patient prices

The table below summarizes the medicine prices in the private sector outlets included in the survey.

Table 14: Ratio of median unit price to MSH international reference price

Level II Facility Survey, Philippines, 2017 Survey

Product type	Median MPR	25th percentile	75th percentile
Originator brand (n = 30 medicines)	**22.11**	**7.46**	**56.80**
Lowest price generic (n = 30 medicines)	**3.77**	**2.51**	**11.33**

The results above show that in the private sector, originator brand medicines are generally sold at 22.1 times their international reference price. There is therefore substantial variation in MPRs across individual originator brand medicines in the private sector. Lowest price generic medicines are generally sold at 3.8 times their international reference price. There is moderate variation in MPRs across individual generic medicines in the private sector.

4.1.3.4 Comparison of patient prices in the public and private sectors

In comparing patient prices between public and private sectors, only those medicines found in both public and private sector medicine outlets were included in the analysis to allow for the comparison of prices between the two sectors. Results in Table 15 show that final patient prices in the private sector are 15.7% higher for generic equivalents and 486.5% higher for originator brands than those in the public. The very huge discrepancy in prices as paid by private sector patients compared with the public sector patients is an indication of the continuing need for medicine access programs.

Table 15: Median MPRs for medicines found in both public and private sectors

Level II Facility Survey, Philippines, 2017 Survey.

Product type	Median MPR Public sector patient prices	Median MPR Private sector patient prices	% difference private to public
Originator brand (n= 23 medicines)	**3.52**	**20.62**	**486.5%**
Lowest price generic (n = 26 medicines)	**3.24**	**3.75**	**15.7%**

Table 16 shows the trends in medicine prices using the Median Medicine Price Ratios (MPR) as reference in studies conducted in 2002, 2005 and 2009. In the public sector, the public procurement has been shown in the 2005 and 2009 surveys to have the lowest MPRs for generic and innovator brands. In 2009, public procurement is still purchasing medicines at prices higher than the international reference prices (26.33 for branded medicines and 7.97 for generic medicines). Public sector patient prices, on the other hand, increased from 15.31 (2005) to 30.23 (2009) for innovator brands, and from 6.40 (2005) to 9.78 (2009) for generic medicines.

Table 16: Trends in Median Medicine Price Ratios (MPR) 2002, 2005, 2009, and 2017. Level II Facility Survey, Philippines, 2017 Survey.

Median Medicine Price Ratios (MPR)						
Year Conducted	Innovator Brand			Generic Equivalent		
	Private	Public	Public Procurement	Private	Public	Public Procurement
2002*	**15.95**	**18.24**		**8.36-17.76**		
2005**	**17.28**	**15.31**		**5.64**	**6.40**	
2005 Public Procurement**			14.19			**5.14**
2008/09***	**37.10**	**30.23**		**10.76**	**9.78**	
2008/09 Public Procurement			26.33			**7.97**
2017 Health Facility and Household Survey****	**22.11**	**3.52**	**3.33**	**3.77**	**3.31**	**3.63**

* Health Action Information Network (HAIN), 2002

** Institute of Philippine Culture, Ateneo De Manila University (IPC, ADMU), 2005

*** People Managed Health Services Cooperative (PMHSMPC), 2009

**** Institute of Philippine Culture, Ateneo De Manila University (IPC, ADMU), 2018

4.1.3.5 Affordability of standard treatment regimens

The affordability of treatment for seven (7) common conditions was estimated as the number of days' wages of the lowest-paid unskilled government worker that is needed to purchase medicines prescribed at a standard dose. For

acute conditions, treatment duration was defined as a full course of therapy, while for chronic diseases, the affordability of a 30-days' supply of medicines was determined. The daily wage of the lowest-paid unskilled government worker used in the analysis was PhP 320.00.

Table 17: Number of days' wages of the lowest paid government worker needed to purchase standard treatments. Level II Facility Survey, Philippines, 2017 Survey.

Disease condition and 'standard' treatment			Day's wages to pay for treatment		
Condition	**Drug name, strength, dosage form**	**Treatment schedule**	**Lowest price generic: Public sector**	**Lowest price generic: Private sector**	**Originator brand: Private sector**
Moderate Pneumonia – Adult 1	Amoxicillin cap/tab 500 mg	1 cap/tab x 3 x 7 days = 21 cap/tab	0.2	0.2	0.9
Moderate Pneumonia – Adult 2	Cefuroxime 500 mg cap/tab	1 cap/tab x 2 x 7 = 14	1.3	1.4	2.9
Moderate Pneumonia – Children	Amoxicillin 250 mg per 5 ml in 60 ml suspension	5 bottles	0.7	0.8	1.9
Hypertension	Captopril 25 mg cap/tab	1 cap/tab x 2 x 30 days = 60	0.6	0.6	4.8
Hypertension	Losartan 50 mg cap/tab	1 cap/tab x 30 days = 30	0.5	0.6	1.9

Disease condition and 'standard' treatment			Day's wages to pay for treatment		
Condition	**Drug name, strength, dosage form**	**Treatment schedule**	**Lowest price generic: Public sector**	**Lowest price generic: Private sector**	**Originator brand: Private sector**
Hypertension	Amlodipine 10 mg cap/tab	1 cap/tab x 30 days = 30	0.4	0.6	3.5
Hypertension	Enalapril 10 mg cap/tab	1 cap/tab x 30 days = 30	0.8	0.7	2.9

The affordability of lowest price generics in the public sector was not too bad for most conditions, with standard treatment costing not more than two thirds of a day's wage. Only one condition, moderate adult pneumonia [Cefuroxime 500 mg] (1.3 days) cost over a day's wage of the lowest paid government. Other illnesses that relatively costlier to treat include hypertension [Enalapril 10 mg] (0.8 day) and moderate pneumonia for children [Amoxicillin 250 mg/5ml suspension] (0.7 day).

When originator brand medicines are prescribed and dispensed in the private sector, several treatments cost well over one days' wage. For example, treating hypertension with Captopril costs 4.8 days of wages, while treating hypertension with Amlodipine costs 3.5 days of wages and using Enalapril costs 2.9 days of wages

It should be noted that treatment costs only refer to medicine expenses. Not yet included in this amount are the additional costs of consultation and diagnostic tests. Further, many workers in the country actually earn less than the lowest government stipulated wage. Thus, treatments that appear affordable are often times too costly for the poorest segments of the population. Even when individual treatments seem reasonable, individuals or families may require multiple

medications with unmanageable costs. Primarily because of their limited income, treatment of common illnesses can easily result into financial catastrophe for many Filipino households.

4.2 Key findings on criteria related to the quality of medicines

For quality of medicines, indicators used in the survey include: the presence of expired medicines in the facilities, and storage conditions of medicines in the facilities at the time of the survey. Table 18 below summarizes the quality of medicine scores of the facilities that are included in the study.

Table 18: General indicators for quality of medicines
Level II Facility Survey, Philippines, 2017 Survey

Indicator	National (Median)	25th Percentile	75th Percentile
% medicines expired in			
public health facility dispensaries	0.0	0.0	0.0
private drug outlets	0.0	0.0	0.0
warehouses supplying the public sector	0.0	0.0	0.0
Adequacy of storage conditions of medicines in			
- storerooms of public health facility dispensaries	100.0	80.0	100.0
- dispensing rooms of public health facility dispensaries	100.0	90.0	100.0
- storerooms of private drug outlets	100.0	80.0	100.0
- dispensing rooms of private drug outlets	100.0	80.0	100.0
- storerooms of warehouses supplying the public sector	90.0	80.0	100.0

There were no expired medicines found in the public health facility dispensaries, private drug outlets and warehouses supplying the public sector. The adequacy of infrastructure for conservation conditions of medicines was found to

be very good with a median score of 100% for store rooms and dispensing rooms in both public and private sector facilities. Though not perfect, central warehouses got an equally good rating of 90% adequacy of its store room facilities. Some of the inadequacies observed in some of the warehouses are: 1) medicines are not adequately protected from sunlight, 2) presence of pests, 3) disorganized storage of medicines, and 4) absence of wooden pallets to elevate the medicines from the floor. Overall, this pattern indicates an above average adequacy of storage conditions across different types of facilities.

4.3 Rational use of medicines

The indicators for rational use of medicines include the following: percentage of prescribed antibiotics and injections to patients, average number of medicines prescribed, percentage of prescribed medicines on the essential medicines list at public health facilities, adequate labeling of medicines, and adherence of prescribers to recommended treatment guidelines. The figures and table below show the results of the study with respect to these indicators.

Figure 7: Rational Use of Medicines Indicators, Health Facility Survey, Philippines, 2017

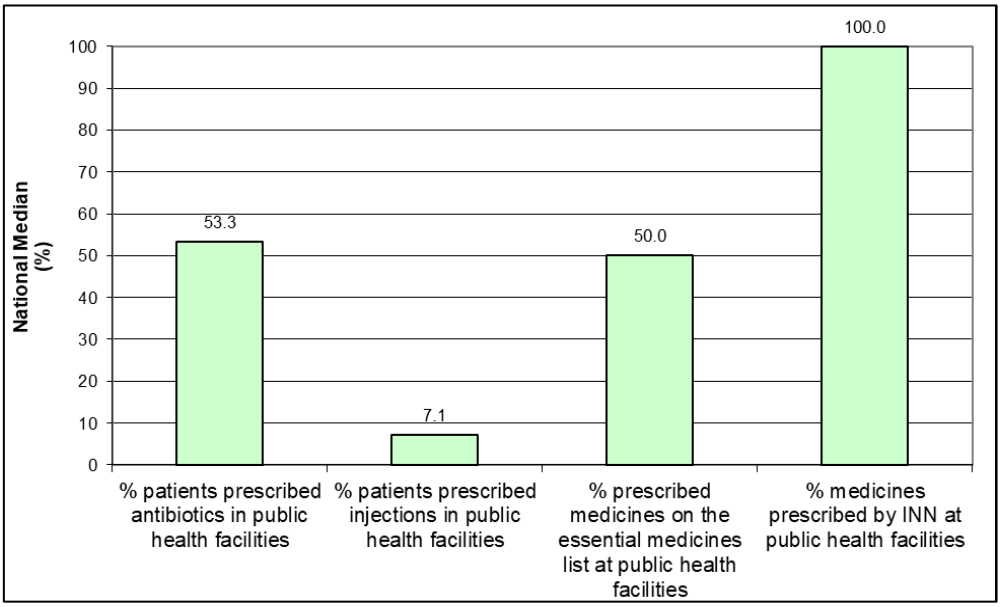


Figure 8: Rational Use of Medicines Indicators, private facility pharmacies according to % Rx medicines bought without prescription, Health Facility Survey, Philippines, 2017

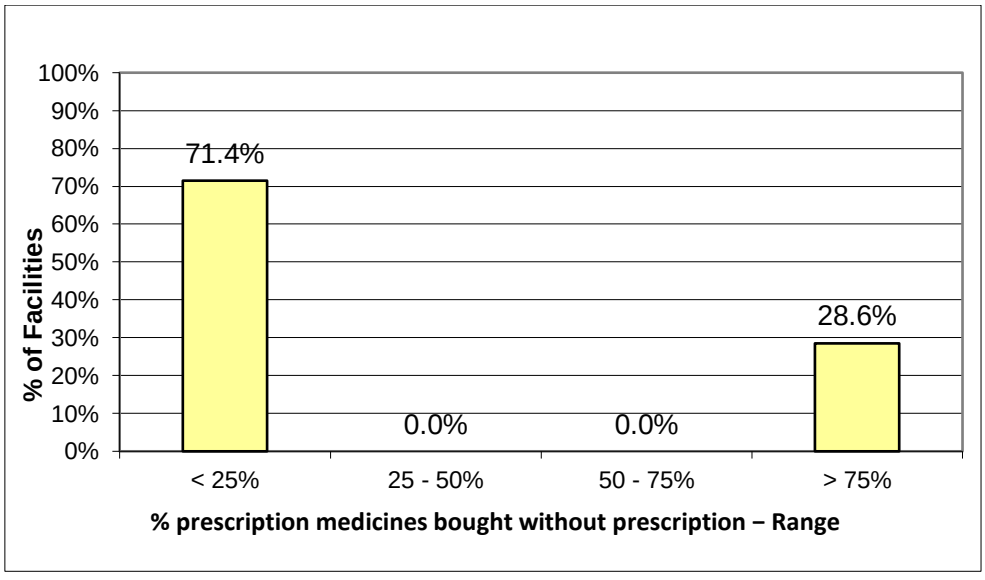


Table 19: General indicators for quality, Level II Facility Survey, Philippines, 2017 Survey

Indicator	National (Median)	25th Percentile	75th Percentile
Prescribing indicators			
Average number of medicines per prescription at public health facility dispensaries and public health facilities(SF6)	2.0	2.0	3.0
Average number of medicines per prescription at public health facility dispensaries and public health facilities(SF7)	2.3	1.8	2.8
% patients prescribed antibiotics in public health facilities	53.3	40.0	73.3
% patients prescribed injections in public health facilities	7.1	0.0	16.7
% prescribed medicines on the essential medicines list at public health facilities	50.0	33.3	66.6
% medicines prescribed by generic name (INN) at public health facilities	100.0	92.5	100.0
Patient care indicators			
% medicines adequately labeled at public health facility dispensaries private dispensaries	 100.0 100.0	 90.7 95.9	 100.0 100.0
% patients know how to take medicines at			
public health facility dispensaries	100.0	80.0	100.0
private dispensaries	100.0	92.5	100.0
Prescription medicines bought without prescription	0.0	0.0	2.4

Indicator	National (Median)	25th Percentile	75th Percentile
Facility specific factors for the rational use of medicines			
Availability of standard treatment guidelines at public health facilities	66.7		
Availability of essential medicines list at public health facilities	73.3		

The EML and the Standard Treatment Guidelines (STG) were found in 73% and 67% of public healthcare facilities. This indicates a continuing need to promote vigorously the importance of having a copy of both EML and STG in all public health facilities.

The average number of medicines per prescription at public facility dispensaries was 2.0, and which is classified as adequate. The percentage of patients with antibiotics prescribed in public facilities was 53%. While a little lower than the 63% from the 2009 health facility survey, the 2017 figure is still considered high, and may indicate an irrational prescribing pattern for this group of medicines. Meanwhile, the percentage of patients with injections prescribed in public facilities was 7%, which is also considered an adequate prescribing pattern for this group of medicines.

Majority (71.4%) of private pharmacies also claimed that only 0 to 25% of all the prescription drugs dispensed in their facilities were not covered by a prescription (Figure 8). In the light of problems on increasing anti-microbial resistance, further studies can be designed to explore in greater detail the geographical distribution, as well as, the local contexts and health system conditions where this “irrational” medicine use is still happening.

Another variable studied was the adherence of prescribers to recommended treatment regimens. Findings, as indicated in Table 17 below show that prescribers are likely not to adhere to treatment guidelines. Forty percent of non-bacterial

cases of diarrhoea were prescribed with antibiotics,70% of non -pneumonia ARI and 60% of those with mild/moderate pneumonia were also prescribed with antibiotics.

The median percentage of prescribed medicines that are on the national Essential Medicines List (EML) was 50%, indicating a somewhat limited adherence of physicians to this list. However, 100% of medicines included in the survey were prescribed using its generic name. This pattern suggests good access to and rational use of medicines.

One hundred percent of medicines included in the survey were adequately labeled, for both public health facility dispensaries and private pharmacies. Patients at private pharmacies and public health facility dispensaries also knew how to take their medicines.

Table 20: Adherence of prescribers to recommended treatment guidelines Level II Facility Survey, Philippines, 2017 Survey.

Indicator	Information source	Median	National Average	Standard Deviation
Adherence to recommended treatment guidelines				
Non-bacterial diarrhoea in children under age 5	Total number of cases,	**10.0**		
	% ORS	**80.0**	78.2	25.3
	% Antibiotics	**40.0**	36.1	27.3
	% Antidiarrhoeal and/or Antispasmodic	**30.0**	37.0	27.8
Mild/moderate pneumonia in children under age 5	Total number of cases	**10.0**		
	% receiving any one first line antibiotic	**60.0**	63.3	28.4
	% receiving more than one antibiotic	**20.0**	30.0	26.5
Non-pneumonia ARI in patients of any age	Total number of cases	**10.0**		
	% Antibiotics	**70.0**	70.9	28.9

The rider questions regarding awareness and actual use of the Philippine National Formulary (PNF) indicated that 46% of the public facilities surveyed have heard of the PNF, and out of this number, 57% are regularly using the online version of the 2008 PNF (Figures 9 and 10). The less than perfect scores on the knowledge and actual use of PNF is an initial indicator of the need for a more invigorated drive to promote the said document.

Figure 9: Awareness of and Use of Online Version of the 2008 PNF (in %)

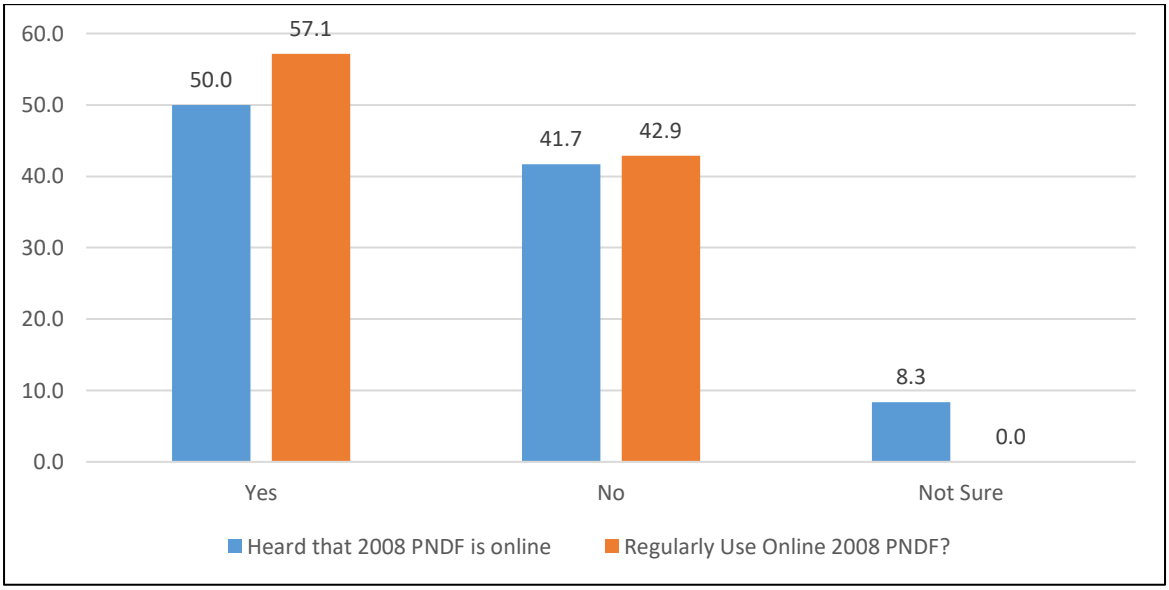
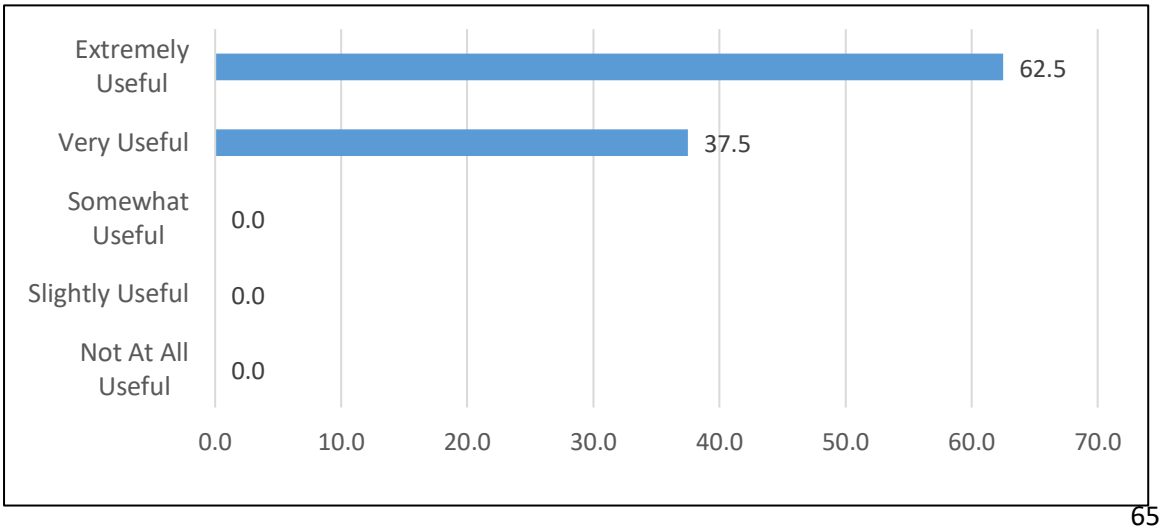


Figure 10: Opinions on the Usefulness of the Online Version of the 2008 PNF (in %)



4.4 Household Survey: Characteristics of Surveyed Households

Understanding the characteristics of surveyed households is critical in assessing their representativeness at the national level. Interpretation of survey results depends on the location, size, composition and socio-economic status of households, as well as, the characteristics of respondents, and morbidity of the population included in the survey.

4.4.1 Respondent Characteristics

Respondents are selected by data collectors because they are the household health care decision makers. Therefore, the gender, age and education of respondents provide information about the characteristics of the main health care decision makers in households. The profile of respondents is an important consideration in the interpretation of the opinion questions of the survey.

Figure 11 presents the gender and age of household heads who generally make health decisions in the households. Men represented the large majority of household heads (73.7%). Most male household heads are 25 to 50 years old in age while most females are 51 years old and above.

Figure 11: Gender and age of household heads

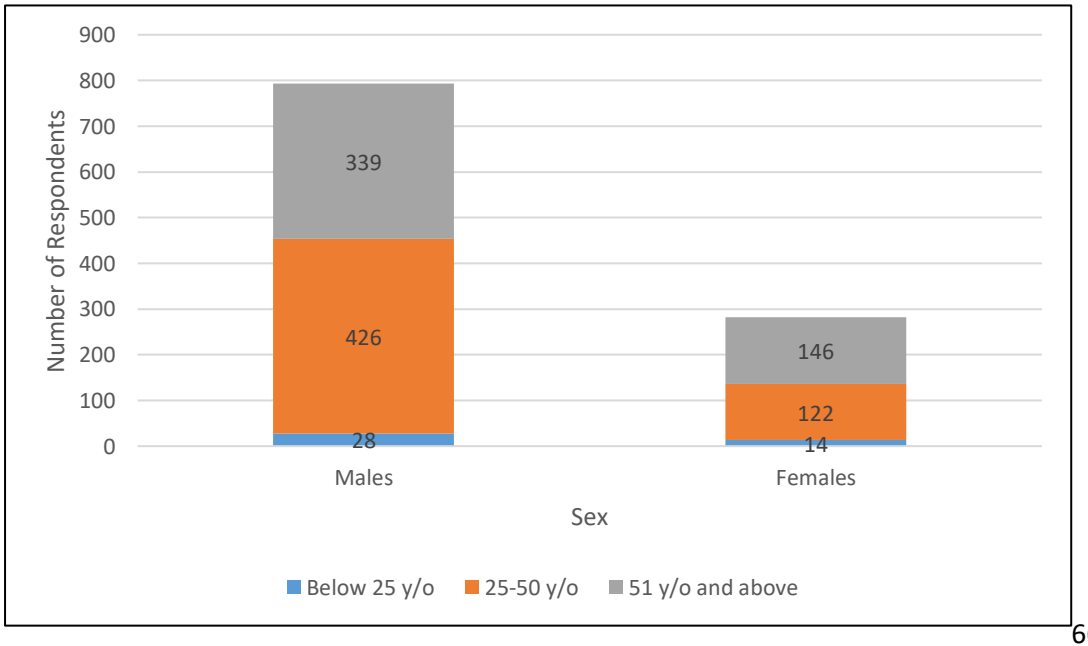


Figure 12 presents the highest level of education reached by respondents. Ninety-nine percent (99%) of respondents went to school. Majority of the males finished high school while majority of the females finished some form of tertiary education. The data shows that surveyed female household heads completed more years in school than male household heads.

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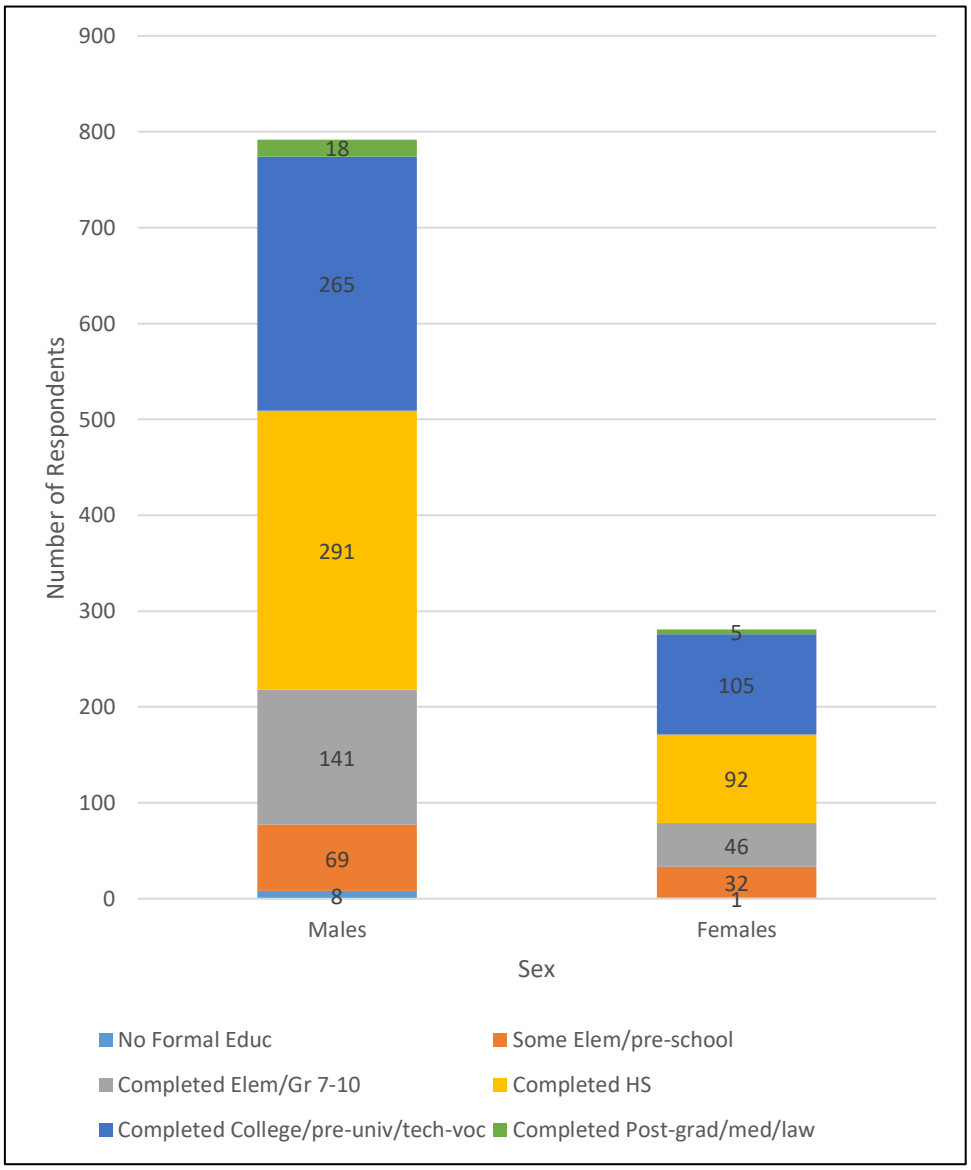
Figure 12: Educational Attainment of Household Heads



4.4.2 Household expenditures

The medicines survey collects direct information on food and health expenditures. Providing an actual value of 4-week total expenditures is optional. The recall period of total and health expenditures include the four preceding weeks while the recall period of food expenditures is limited to that of the previous week.

Table 21 presents the mean and median amount of household expenditures collected in the Philippine survey.

Table 21: Monthly household expenditures in PhP

Expenditure Category / Time Frame	# of Reponses	Mean Amount	Median Amount
Food (last week)	1079	2396.12	1500.00
Total Household Spending (last 4 weeks)	341	9696.73	6500.00
Overnight Hospital Stay (last 4 weeks)	1079	479.57	0.00
Medicines	1080	617.83	22.00
Other health care products	1079	55.67	0.00
Voluntary health insurance (last 4 weeks)	1080	26.85	0.00

Thirty-one percent (31%) of the respondents chose to provide an actual amount of total household expenditures. In this group of 341 respondents, the median value of total 4-wk household expenditures was PhP 6500.00. Relating this with the median amount of Php 1,500.00 spent on food per week, it can be surmised that the great majority of monthly household expenses were spent primarily on food.

4.4.3 Household Morbidity

Information about household morbidity were obtained by asking respondents if a member of the household had acute illness within two weeks preceding the survey, and also, if any household member has a chronic disease. Depending on the presence of either acute or chronic illness, data collectors were trained to collect health data on the youngest member with a recent bout of acute illness, and on the oldest member with a chronic disease. They also ask how many members had a recent acute illness or have a chronic disease.

Table 22 presents the prevalence of illnesses in surveyed households. More than half of the sampled households were free of current health problem (65.61%). On the other hand, more than a quarter (29.75%) reported both acute and chronic conditions. Seventy percent (70%) also disclosed one or more incidents of acute illnesses, and 34.39% reported one or more cases of chronic diseases.

Table 22: Prevalence of acute and chronic conditions

		At least one chronic disease		
		Yes	No	All
At least one recent acute illness	Yes	105	248	353
		29.75%	70.25%	100%
	No	250	477	727
		34.39%	65.61%	100%
	All	355	725	1080
		32.87%	67.13%	100%

Table 23 presents symptoms of recent acute illness as perceived by respondents. Cough, runny nose, sore throat, and earache were the most common reported symptoms. Fever and headaches were also common. Accidents which may need more medical attention are less frequently reported.

Table 23: Reported symptoms of acute illness

Symptoms	Frequency	Total	Percent
Cough, runny nose, sore throat, ear ache	287	434	66.13%
Fever, headache, hot body	188	435	43.22%
Pain, aches	68	436	15.60%
Difficulty breathing, fast breathing	37	435	8.51%
Diarrhea, vomiting, nausea, could not eat	27	409	6.19%
Thirst, sweating	15	436	3.44%
Could not sleep	7	436	1.61%
Bleeding, burn, accident	8	436	1.83%
Convulsions, fits	2	436	0.46%

Meanwhile, chronic diseases are documented as they are recalled by respondents. Table 24 presents reported chronic diseases. The most frequent reported chronic diseases were hypertension, asthma, arthritis and diabetes. These conditions require regular intake of medications, and at times, multiple or combination drugs as in the case of hypertension and diabetes.

Table 24: Reported chronic Illnesses

Chronic Illness	Frequency	N	Percent
Hypertension, high blood pressure	290	427	67.92%
Diabetes, high blood sugar	83	427	19.44%
Arthritis, chronic body pain	69	427	16.16%
Asthma, wheezing, chronic difficulty in breathing	35	427	8.20%
High cholesterol	42	427	9.84%
Heart disease, heart attack consequence	23	426	5.40%
Ulcer, chronic stomach pain	12	427	2.81%
Tuberculosis	8	427	1.87%
Stroke consequences	9	427	2.11%

Epilepsy, seizures, fits	3	427	0.70%
Cancer	3	427	0.70%
Liver disease	4	427	0.94%
HIV infection, AIDS	2	427	0.47%
Depression	3	427	0.70%

4.5 Geographic access and availability of medicines

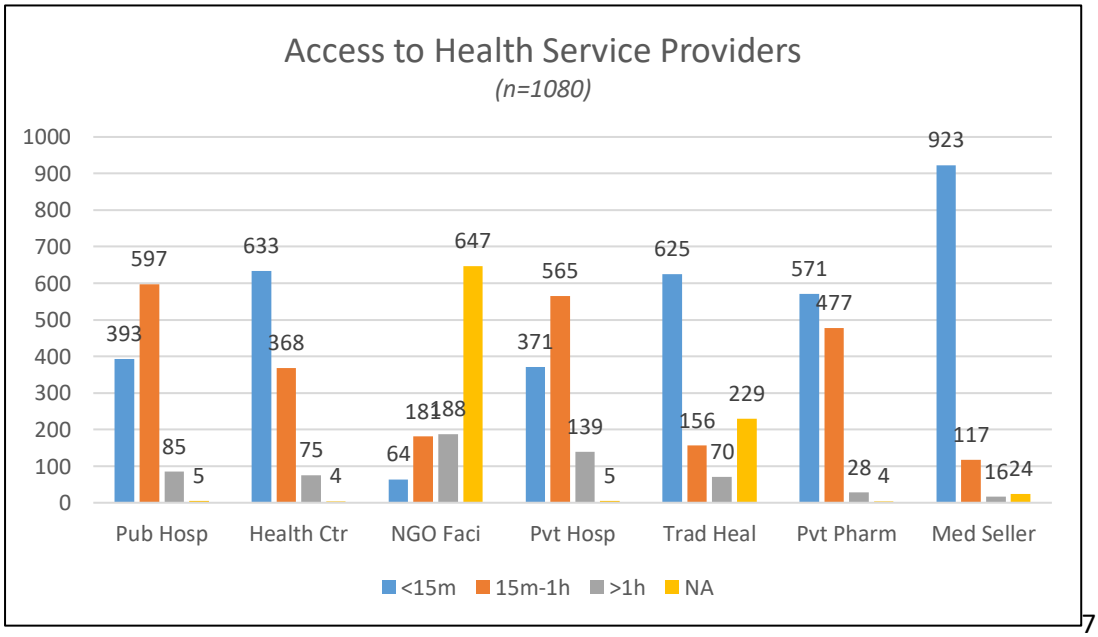
Geographic access to public health facilities is an important indicator of equity in access to medicines.

4.5.1 Proximity to health care facilities

The survey records the proximity of each household to different types of health care facilities, using the time to travel as unit of distance. Facilities are classified as: public hospital, private or NGO hospital, public health care center or dispensary, private clinic or physician, traditional healer, private pharmacy, or drug seller. For each facility, travel time options are: less than 15 minutes, between 15 minutes and 1 hour, and over one hour.

Figure 13 displays the proximity of households to any health care facility, including public health care facilities.

Figure 13: Access to various health service providers



Among the different health care facilities, medicine sellers (other than private pharmacies) appear to be most accessible to the surveyed households (85% can reach them in less than 15 minutes) followed by public health centers and traditional healers (58% can reach these facilities in less than 15 minutes). Thirty-six percent (36%) of the households was within 15 minutes travelling distance to the nearest public health care facility while 34% can reach private hospitals at about the same time. NGO-operated facilities are quite inaccessible to the majority of the population. Majority (about 60%) reported that they are not aware of any NGO facilities in their area.

Creative combination of traditional healing with modern medicines to treat amoebiasis

By: J. Yap, et. al.

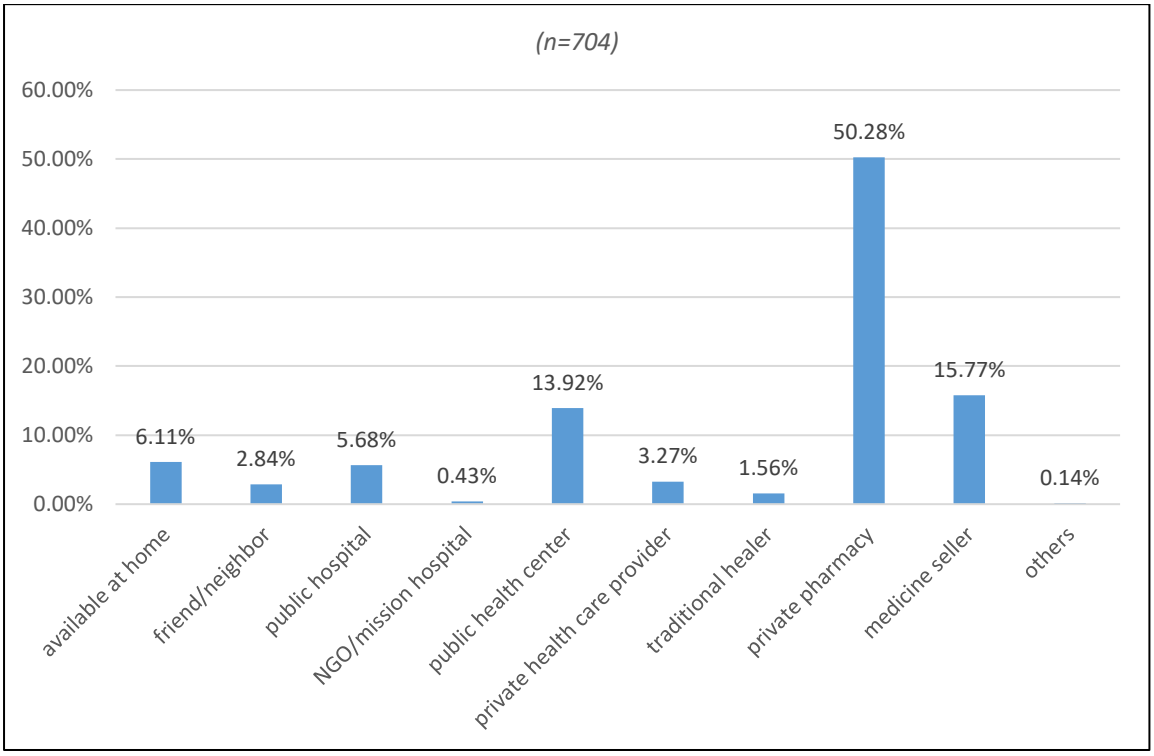
In a town in northern Philippines, there is a famous healer that goes by *Apung Apon* (not her real name). She is a *mangagayas* who primarily treats amoebiasis in children. Before treatment, *Apung Apon* requires her patient to abstain from food, and to bring a white chicken for the healing ceremony. *Apung Apon* starts the treatment by offering a prayer for her patients. Using her hands, she wipes blood of the chicken on the child's back and "scrapes" the disease off the body using a dull knife. After the ceremony, the blood is washed off with water. *Apung Apon's* husband then hands out a prescription of Cotrimoxazole syrup to be taken twice a day, and also, a vial of *balsamo, which* is to be taken at four tablespoons, once a day for three days. The patients are disallowed to take home the chicken used for the ceremony, and thisis left at the clinic.

One of *Apung Apon's* regular patients gave a testimony on the effectiveness of her treatment. Their son used to be quite thin, and was previously hospitalized due to episodes of bloody stools. The child was eventually diagnosed with amoebiasis. After a couple days with no improvement, the parents decided to bring their son to *Apung Apon*. After the initial treatment, the child gained weight, and his condition improved. The family now regularly visits *Apung Apon* for their monthly treatments. *Apung Apon* does not require payment for her services though she accepts donations.

4.5.2 Sources of medicines found in households

Figure 14 presents the percentage of medicines for acute conditions that were found in households and were obtained from a variety of sources. Only five percent (5.68%) of these medicines came from public health care facilities. Majority (50.28%) were from private pharmacies with the smallest percentage supplied by: NGO/mission hospitals (0.43%), traditional healers (1.56%), friends/neighbors (2.84%), and other sources (0.14%).

Figure 14: Source of medicines found in households for Acute Conditions



Ambulant Vendors as a common source of regular household medicines.

By: M. Montejo, et. al.

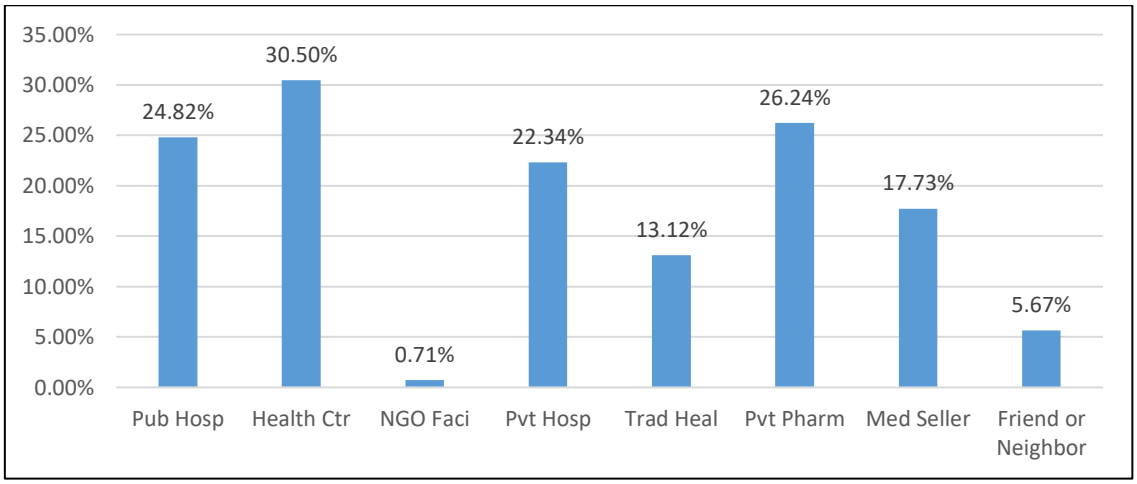
In one municipality in southern Philippines, many respondents obtained their medicines from the nearest health facility in the barangay. Others, however, shared that they got their medicines from nearby "sari-sari" stores that in turn, were supplied by ambulant peddlers. Most common medicine sold by ambulant vendors are: Paracetamol, Mefenamic Acid, Amoxicillin and other unspecified supplements.

The respondents further shared that medicines sold through this channel are very inexpensive. The competitive price is possible since these peddlers buy their stocks in bulk, also at lower prices, from Pharmaceutical distributors. The respondents said that "access to medicine is made easy thanks to these peddlers." During one of the interviews, a member of the research team actually witnessed the actual buying of medicines from an ambulant peddler.

4.5.3 Sources of care in case of acute illness

The sources of care sought for in cases of acute illnesses are listed in Figure 15. Majority of households sought care and medicines from a public health center, private pharmacy, public hospital, and private hospitals. Others, though a smaller number, also consult with a traditional healer or just go direct to the medical seller (other than private pharmacies) for the medication.

Figure 15: Sources of care for acute illnesses (n=282)



4.5.4 Opinions about geographic access and availability of medicines

Personal opinions are part of the survey. Table 25 presents the percentage of respondents who agreed with various statements pertaining to geographic access and availability of medicines. Seventy-seven (77%) of respondents were satisfied with the location of their public health care facility, and are willing to use public health care facility given a more convenient opening hours. This shows intent or willingness to take advantage of available government health services. However, only 47% of the respondents agreed that the facility closest to home has the medicines that they need.

Table 25: Opinions about geographic access and availability of medicines (n=1080)

	Agree
The public health care facility closest to my household is easy to reach.	**78%**
My household would use public health care facilities more if opening hours were convenient.	**77%**
The public health care facility closest to my household usually has the medicines we need.	**47%**
The private pharmacy closest to my household usually has the medicines my household needs.	**80%**

4.5.5 Opinions about the affordability of medicines

Affordability of medicines is a critical indicator of equity in access to medicines. The price of medicines was mentioned as a reason for non-compliance to treatment. As such, perceptions of medicine prices also affect access to medicines. Majority of the respondents still perceive medicines from private pharmacies as more expensive compared with those from public health care facilities. This view is supportive of the findings on medicine prices from the facility survey section of this study.

In terms of obtaining medicines through credit, less than a quarter (24%) of the respondents indicated that they can take advantage of credit from pharmacies. This kind of service is not usually provided by local pharmacies in the Philippines. Thus, the low response rate of this item is not totally unexpected. In spite of such limitation, 70% of the surveyed households reported that they can usually afford to buy the medicines that they needed.

Table 26: Opinions about affordability of medicines (n=1080)

	Agree
My household can get free medicines at the public health care facility.	**70%**
Medicines are more expensive at private pharmacies than at public health care facilities.	**85%**
My household can usually get credit from the private pharmacy if we need to.	**24%**
My household can usually afford to buy the medicines we need.	**70%**
My household would obtain prescribed medicines if insurance reimbursed part of their cost.	**45%**

4.5.6 Cost of medicines for acute and chronic illnesses

Table 27 presents data on the occurrence and treatment cost for acute illnesses. Of the 1080 household respondents, 353 or about a third (33%) reported

of at least one household member with an acute illness at least two weeks prior to the survey. From the 353 households, there were 435 individuals with acute illnesses, and out of which, 396 (91%) took medicines to alleviate the symptoms of their illness. And for those who took medication, they paid an average of PhP 517.00 for their medicines.

Table 27: Data on Occurrence and Cost of Treating Acute Illness

Number of households reporting recent acute illnesses	**353/1080**
Number of persons with recent acute illness who took medicines	**396/435**
Number of persons with recent acute illness who paid for medicines	**331**
Average cost of medicines for recent acute illness	**PhP 517.17**

The medicines survey also collected information about the occurrence and treatment of chronic illnesses among the households.

Table 28 presents data on the occurrence and monthly treatment cost for chronic illnesses. Of the 1080 respondent households, 355 or about a third (32%) reported having at least one household member with a chronic illness. From the 355 households, 427 individuals had chronic illness, and out of which, 402 (94%) were prescribed with medicines. For the 68 out of 402 who bought medicines, an average of PhP 1166.47 per month were used for these medications.

Table 28: Data on Occurrence and Cost of Treating Chronic Illness

Number of households reporting recent chronic illnesses	**355/1080**
Number of persons with a chronic illness who were advised to take medicines for the chronic illness	**402/427**
Number of persons with a chronic disease who pay for their medicines	**68**
Average monthly cost of medicines for chronic disease when medicines are not free-of-charge	**PHP 1166.47**

The hidden costs of free government medicines

By: F. Carsola, F. Magana, et. al.

Located somewhere in northern Philippines, RHU A provide services to 39 barangays composed mainly of vendor and farmer families. The RHU is open from 8:00 am to 5:00 pm, Mondays to Fridays, and the treatment of patients usually starts at 9:30 in the morning. In these communities, most common illnesses are: high blood pressure, diabetes, and bronchitis. For the children, most common illnesses are: diarrhea, common cough and colds, and flu.

A number of patients in this RHU shared with the members of the research team that the nurses and/or midwives charge some money for the medicines provided to the patients. Further, donation boxes are located strategically, and displayed prominently on the table of the midwives. While many patients are aware of the DOH's free medicine program, they still felt compelled to put some money in these donation boxes. According to these patients, those who are giving donations are given special attention, and are sometimes the priority of the staff.

Meanwhile, other RHU patients also understood that their donations serve as additional professional fees of healthcare providers especially when these health workers need to travel to other barangays. For their part, these health practitioners explained that the money collected are used to buy lunch for the health workers, and snacks during meetings with the barangay officials.

This practice of "donation" is not limited to this Northern Province. One of the research teams reported that even in the biggest cities, donations, usually amounting to Php 20.00 are routine in selected health centers. The patients feel that by giving donations to health centers, the center can buy better equipment and improve its services, and most patients prefer going to health centers because of its proximity to their homes. Thus, compared with hospitals, patients have better access to the services of health centers.

4.5.7 Insurance coverage for medicines

The medicines survey also collected data regarding the percentage of households with health insurance to cover expenses on medicines. Out of the 395 individuals with acute illness, and who have taken medicines for their condition, only 5.32% or 21 individuals had part or all of their medicine expenses covered by some form of a health insurance. Among those diagnosed with a chronic illness and were taking medicines for their condition, only 71 out of the 743 were covered by some form of insurance.

4.6 Medicines at home

The survey also asked respondents what kind of medicines were kept at home. This information contributes in the determination of which medicines people access and use, who prescribes them, where they can be obtained, how much they cost, and why people take or do not take them.

Combining modern and traditional medicines to heal themselves.

By: J. Abela, et. al

The protocols followed in dispensing medicines are quite clear and straightforward. However, households interviewed for this study revealed very interesting practices to heal themselves. In a town in Western Philippines, a group of indigenous people (IP) shared their creative ways to assess the severity of what ails them. Their two (2) broad categories are: sickness that can be cured by their traditional healer (*sakit na nagagamot ni Amay*) and sickness that needs to be attended by a personnel from a health unit (*sakit pang-doktor*). Simple stomach pains, cough, colds, allergies, and occasional vomiting are usually considered as curable by traditional medicine. For this group of IP, persistent fever means that they need to go to the satellite clinic to ask for medicines.

They often associate chronic illness with something brought unto them by the unseen – the underworld, spirits living with them, and the cult of the dead. Or it can also be the result of hexing, or different forms of poisoning caused by their fellow. Their remedies for these illnesses vary, from applying leaves to affected areas or by boiling various plants either for drinking or for washing their bodies. For these IPs, medicines have side effects on their bodies. However, if they halve the medicine, either in tablet or capsule form, they will be cured without getting the bad effects.

4.6.1 Labeling and packaging of medicines found in households

Labels of medicines found in households are considered acceptable by enumerators if they include medicine name, dose, and expiration date. Similarly, the primary package of a medicine is considered acceptable if it is an envelope or a closable container which contains only one medicine.

Figure 16 presents the percentage of medicines that had an acceptable label and primary package, by source of medicine.

Figure 16: Percentage of medicines found in households with adequate labelling and primary package, by source

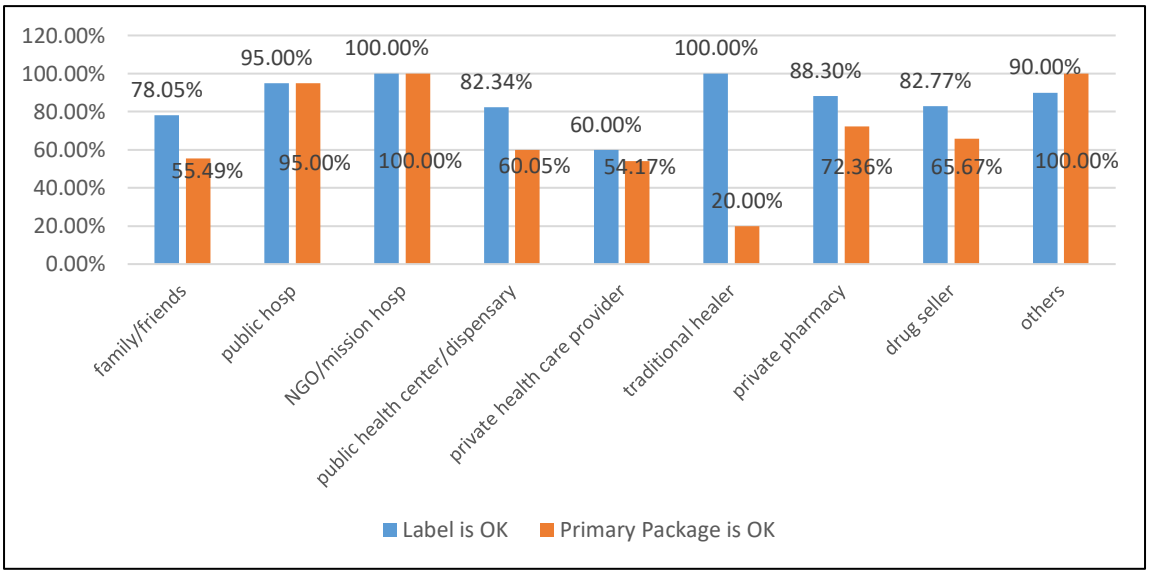


Figure 16 also shows that for all of the identified medicines on hand, at least 60.00% had proper labelling, and at least 20% had acceptable primary packaging. Upon checking, many of the medicines lacked the proper labeling because it was bought through “retail” (*tingi-tingi*) or by specific number of pills. Majority of the medicines from common sources such as public hospitals, private pharmacies, and drug sellers were properly labelled, and were in proper primary packaging.

4.7 Use of medicines during acute and chronic illnesses

For each acute illness reported, data collectors record the name, route of administration, prescriber, and source of each medicine. The data collector also records the name of each medicine prescribed to the person with a chronic disease, the condition for which it was recommended, the usual number of days of supply obtained by the patient, the usual cost for one month, and insurance coverage for every person with a chronic disease. Medicine names are then

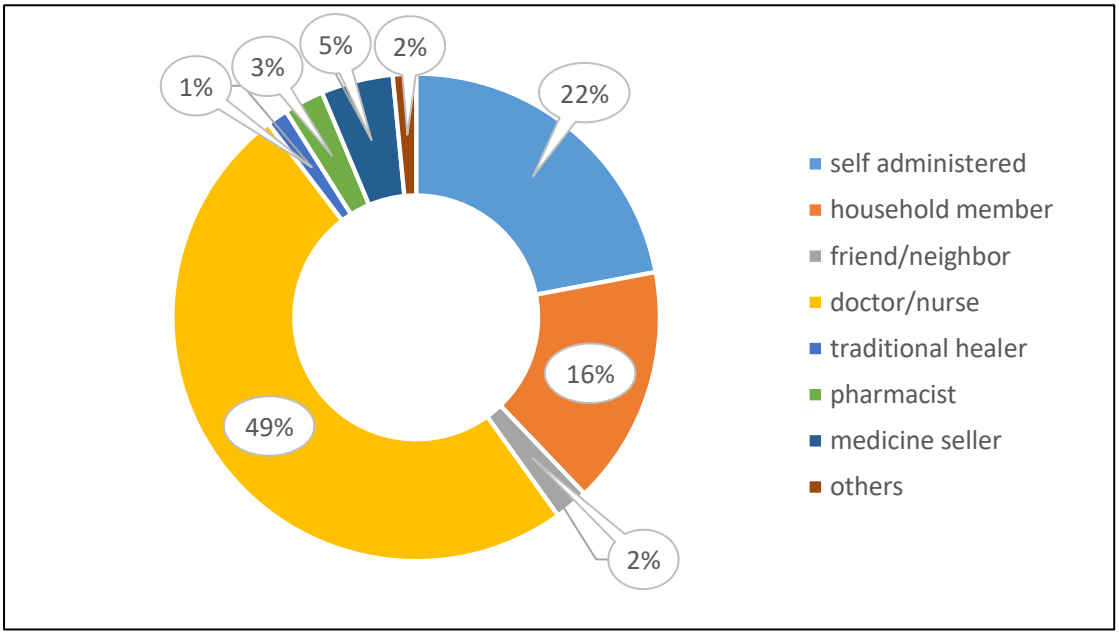
entered in the data base using both its actual and generic names. A code is then derived from the 15th WHO Model List of Essential Medicines.

There is great variability in the type of acute illnesses reported in the survey. It may range from a simple body pain, fever and runny nose to something like an accident that may be of very serious nature. As such, the responses regarding medicines for acute illness is equally varied.

4.8 Prescribers of medicines in case of acute illness

Figure 17 presents prescribers of medicines in case of acute illness. Doctors/nurses were still the most common prescribers. A third of the population used self-prescribed medicines. These medicines were probably purchased based on the patients' past experience of similar symptoms that were somehow alleviated by taking-in medicines that were not prescribed by any professional health worker. This was most likely the case for medicines for colds, pain, and fever, which are the more common forms of acute illness reported by the respondents.

Figure 17: Prescribers of medicines in cases of acute illness



4.9 Reasons for not taking medicines prescribed for illnesses

The medicine survey includes a list of possible reasons that could explain why a person did not take his/her prescribed medicines. If non-compliance is identified, this list is read to the respondent who chooses yes if he/she feels that a particular item in the list explains why the sick household member did not take his/her medicine. “Yes” may be selected for several possible reasons.

Local cocktail of medicines: a first line of treatment for any illness

By: A. Custodio, et. al.

In a town in central Philippines, residents routinely combine two (2) medicines when they feel sick. These are amoxicillin (500mg) and mefenamic acid (500mg) capsules and tablets usually bought from neighborhood stores. Residents of this town do not seek medical consultation, and instead, just buy medicines without getting prescriptions from health practitioners. They cannot send their family members for consultation at the nearest hospital because they have no money to pay for the prescribed medicines, the fare, and the hospitalization costs. More disturbingly, the household respondents admitted that once the signs and symptoms are gone, they stop taking the medicines. For example, amoxicillin is taken three times a day for two days or longer depending on the number of days until the symptoms of the illness are gone. This “practice” is also done on pediatric patients. The tablet is just cut in half to reduce the dosage.

4.9.1 Reasons for not taking medicines prescribed for acute illnesses

Table 29 presents the number of persons with acute illness who did not take the medicines as recommended, and the most frequent reasons chosen to explain non-compliance. The survey results show that the main reason (over 86% of those taking treatment for acute illnesses) for discontinuing treatment was the improvement of patient’s symptoms. This is followed by household member/s decision that further treatment was not needed anymore, and the unaffordable

medicine prices. This situation can potentially lead to bigger problems since incomplete treatment, in the context of an antibiotic course, can lead to resistance in the future.

Table 29: Reasons for not taking prescribed medicines for acute illness

Reasons	Frequency (n = 126)	Percent
Symptoms have gotten better	109	86.5
Someone in the household decided medicines were not needed	42	33.3
Our household could not afford the medicines	14	11.1
Someone advised not to take medicines	10	7.9
Medicines were not available at the public health care facility	12	9.52
No one in the household could take time to obtain medicines	10	7.94
Someone in the household chose a different treatment	24	19.05
Medicines were not available at private pharmacy or drug seller	7	5.56
Sick person had bad reactions to medicines in the past	3	2.38
The place where medicines can be obtained was too far away	13	10.40
Others	9	7.14

4.9.2 Reasons for not taking medicines prescribed for a chronic disease

Table 30 presents the number of persons with chronic disease who did not take prescribed medicines as recommended. Similar with the case of acute illness, the most common reasons for not taking medicines was improvement of symptoms of the patient. This is followed by the high price of maintenance medicines for chronic illnesses.

Table 30: Reasons for not taking prescribed medicines for chronic illness

Reasons	Frequency (n = 91)	Percent
Symptoms have gotten better	61	67.03
Our household could not afford the medicines	42	46.15
Someone in the household decided medicines were not needed	14	15.56
No one in the household could take time to obtain medicines	11	12.09
Someone in the household chose a different treatment	11	12.09
The place where medicines can be obtained was too far away	7	7.69
Medicines were not available at the public health care facility	18	19.78
Sick person had bad reactions to medicines in the past	8	8.79
Medicines were not available at private pharmacy or drug seller	3	3.30
Someone advised not to take medicines	7	7.69
Others	11	12.09

4.10 Opinions about quality of care and medicines

The medicines survey collected opinions of respondents about quality of care and medicines. These opinion statements are read to the respondents, who in turn, are asked whether they agree or disagree with each statement. Enumerators are instructed to tick the option ‘do not know’ only if respondents are not sure or do not want to answer a particular item.

Table 31 presents opinions of respondents about quality of care in their area. The opinions of respondents about the quality of services in private and

public health care facilities were positive, with private facilities receiving a higher ranking. There is also the notion that imported medicines are of better quality than locally manufactured medicines, and branded medicines are better than generic medicines.

Table 31: Opinions about quality of care and medicines

	Agree (n=1080)
The quality of services delivered at public health care facilities in my neighborhood is good.	**74.14%**
The quality of services delivered by private health care providers in my neighborhood is good.	**82.87%**
Brand name medicines are better than generic medicines.	**67.22%**
Imported medicines are of better quality than locally manufactured medicines.	**40.46%**

4.11 Opinions about Obtaining Medicines

Table 32 presents opinions of respondents about obtaining medicines from various sources. Majority of the respondents reports that they are comfortable to ask prescribers about the price of the medicines that they are given (75.83%), and that it is easy for them to find out how much their medicines cost (72.22%). Over sixty-seven percent (67.69%) of the respondents also ask the pharmacist for an equivalent but cheaper medicine. More than half also believe that health providers, both in public (57.22%) and private (51.16%) health facilities, take into account the ability of their patients to pay when they prescribe medicines. Pharmacists are also seen as a good resource person to ask about the quality of medicines to be purchased. Majority (57.22%) of respondents also believe that pharmacist's recommendations give the best value for money, and that the medicines are of good quality (64.07%). Trust in the government's capacity to ensure the quality of medicines in the market is also apparent (71%). Lastly, the term 'generic' is well known among the respondents with nine out of 10 having previously heard of the term.

Table 32: Opinions about obtaining medicines

Statements	Agree (n=1080)
In public facilities, health providers take into account our ability to pay when they decide which medicines to prescribe.	**57.22%**
In private facilities, health providers take into account our ability to pay when they decide which medicines to prescribe.	**51.16%**
When I receive a prescription, I am comfortable asking how much the medicines will cost.	**75.83%**
It is easy for me to find out how much medicines cost.	**72.22%**
Two identical medicines may be sold at different prices.	**74.35%**
I know where to find medicines at the lowest price in my neighborhood.	**71.64%**
When I buy a medicine, I ask for the least expensive product.	**67.69%**
When a pharmacist recommends a medicine, I can be sure that it is the best value for money.	**57.22%**
When a pharmacist recommends a medicine, I can be sure that it is of good quality.	**64.07%**
Medicines of better quality are more expensive.	**73.33%**
There are places in my neighborhood where I would never buy medicines because they sell medicines of poor quality.	**37.50%**
Our government makes sure that the medicines we buy are of good quality.	**71.20%**
Different names may be used for the same medicine.	**76.39%**
I have heard the word “generic” before to describe a medicine.	**91.30%**

4.12 Opinions about generic medicines

Of the 1080 household respondents, 1001 reported that they have previously heard of the word “generic” to describe medicines. As indicated in Table 33, 63.24% believe that generic medicines are of lesser quality, and

92.60% believe that they are less expensive than brand medicines. This pattern reconfirms the persistent belief about generic medicines having inferior quality, and therefore, may be less effective than brand medicines.

Table 33: Opinions about generic medicines

	Agree
Number of respondents who heard the word "generic" before to describe a medicine	**1001**
A generic medicine is usually lower in quality than a brand medicine.	**63.24%**
A generic medicine is usually lower in price than a brand medicine.	**92.60%**

4.13 Overall Implications of the Results of the Study on Accessibility, Availability and Rational Use of Medicines at the Institutional and Household Levels

4.13.1 Accessibility at the Institutional and Household Levels

Affordability and availability is one of the major pillars in the Philippine Medicines Policy toward Kalusugan Pangkalahatan (Department of Health, 2014) and Philippine Medicine Policy 2017-2022 . As defined in the 2014 DOH administrative order, this pillar pertains to broad mechanisms that the government can employ so that every Filipino can have an access to medicines at all levels of health service delivery chain. Each and every Filipino should have the ability to utilize health services without significant barriers and obstacles. Medicine costs remain a major barrier, and as indicated in the current health expenditures of Filipinos, 56% is shouldered by households (Philippine Statistics Authority, 2017).

Beyond the monetary costs, the results of the study indicate that both private and public health facilities are accessible to the sampled respondents. The national median indicates that very few of the respondents need to travel more than an hour to reach a health facility (0.1% for public health facilities, and 0.2% for private health

facilities). The national median for the equivalent transportation costs are likewise small, PhP 22.00 for public health facilities, and PhP 40.00 for private health facilities.

Medicine cost remains a major factor in how households access medicines. More than a third of the respondents agreed to cost-related statements ("When I receive a prescription, I am comfortable asking how much the medicines will cost.", "It is easy for me to find out how much medicines cost." , "Two identical medicines may be sold at different prices." , "I know where to find medicines at the lowest price in my neighborhood." "When I buy a medicine, I ask for the least expensive product."). Though the research did not explore further the reasons behind these statements, high prices of branded medicines and the presence of cheaper generics medicines as alternative treatment options are possible reasons. Households with limited budgets will likely seek cheaper treatment options with almost all of the respondents surveyed agreeing that generics are cheaper than branded medicines. The survey, however, shows that more than half of the respondents perceive generic medicines to be of lower quality compared with branded medicines.

Majority of the households obtain their medicines from private medicine sellers which are the closest health care facilities to them. These, however, require them to pay for medicines out of pocket. Second to private pharmacies, the next usual source of medicines, though to a much lesser extent, are other medicine sellers (grocery, convenience stores, *sari-sari stores*, etc.) followed by public health centers. These health centers generally give medicines for free so the price becomes less of an issue for access. Thus, when supplies of medicines in the health centers are inadequate, this can result in another barrier for good access to medicines by the households.

4.13.2 Availability of Medicines at the Facility and Household Levels

The Kalusugan Pangkalahatan and Philippine Medicine Policy 2017-2022 also highlighted the importance of availability of medicines that includes, but is not

limited to the promotion of effective competition that will result in the transparent and rational pricing of medicine (Department of Health, 2014). Among others, availability of medicines should include a “transparent, and autonomous national drug facility that can provide a timely, responsive system of medicines distribution, and an efficient supply management of quality medicines” (Anna Melissa Guerrero, no date).

The results of the study indicate that key medicines are generally available in private drug outlets (74%) and public health facilities (69%). However, with reference to global list of medicines, availability remains quite limited. In private sectors, availability of originator brands remain low at 29% while lowest price generic brands are more available at 45%. The situation is even direr at public health facilities with lower mean availability of originator brand (12%) and lowest price generic brands, 42%.

The computed median medicine price ratios indicate that both private and public health facilities are purchasing medicines at higher prices relative to the international reference price. Overall, government health facilities are still procuring medicines at more expensive prices. Private facilities are paying 20.62 times more for innovator brands, and 3.75 times more for lowest price generic medicines. Meanwhile, government facilities are paying 3.52 times more for innovator brands, and 3.24 times more for generic medicines. These figures pertain to medicines that are available in both government and private facilities.

The treatment for seven (7) common conditions were estimated as the number of days work of the lowest-paid unskilled government workers needed to purchase medicines. These conditions include pneumonia for both adult and children, and hypertension. The standard treatment for most conditions is quite affordable and do not cost more than two-thirds of a day’s wage. Treatment using originator brands prescribed and dispensed in the private sector is definitely more expensive. Several treatments cost well over one day’s wage. For hypertension regimen, Captopril costs 4.8 days of wages, Amlodipine costs 3.5 days of wages, and Enalapril costs 2.9 days of wages. These treatment costs only refer to

medicine expenses and do not yet include the additional costs of consultation and other diagnostic tests.

The overall quality of medicines in the facilities surveyed is very good as indicated by 0% expired medicines. The adequacy of infrastructure for conservation conditions of medicines was found to be very good with a median score of 100% for store rooms and dispensing rooms in both public and private sector facilities.

4.13.3 Rational Use of Medicines at the Facility and Household Levels

The rational use of medicines is another major pillar of the Philipine National Medicine Policy. This pillar aims to provide the right and optimal use of medicines to bring the best outcomes for the patients. Rational use is the “promotion of therapeutically sound and cost-effective use of medicines by health professionals and consumers” (Anna Melissa Guerrero, no date). The 2017-2022 Philippine Medicine Policy further articultes the goal of this pillar as “….to promote responsible promotion and quality use of drugs to ensure optimal health outcomes from medicines for patients. This pillar shall ensure that “patients receive medicines appropriate for their clinical needs, in doses that meet their individual requirements, for an adequate period of time and at the lowest possible cost to them and their communities.” Thus, RUM is practiced both at the health facility level, and at the household level.

The Essential Medicines List (EML) and the Standard Treatment Guidelines (STG) were found in 73% and 67% of public healthcare facilities. The median percentage of prescribed medicines that are on the national Essential Medicines List (EML) was 50%, indicating a somewhat limited adherence of physicians to this list. Nevertheless, 100% of medicines included in the survey were prescribed using its generic name.

While the initial pattern suggests an overall good access to, and rational use of medicines at the facility level, the study also indicates irrational dispensing

pattern, specifically, the non-adherence to treatment guidelines. For example, forty percent of non-bacterial cases of diarrhea were prescribed with antibiotics, 70% of non -pneumonia ARI, and 60% of those with mild/moderate pneumonia were also prescribed with antibiotics.

The percentage of patients with antibiotics prescribed in public facilities was 53%. While a little lower than the 63% from the 2009 health facility survey, the 2017 figure is still considered high. Majority (71.4%) of private pharmacies also claimed that only 0 to 25% of all the prescription drugs dispensed in their facilities were not covered by a prescription.

Lastly, one hundred percent of medicines included in the survey were adequately labeled, for both public health facility dispensaries and private pharmacies. Patients at private pharmacies and public health facility dispensaries also knew how to take their medicines.

Though medicine prices contribute to access to medicines at the household level, it is not the top reason for patients to not finish their treatment regimens. For both acute and chronic conditions, improving conditions (symptoms reduction) or “feeling better” are the top reasons for discontinuing treatment. This attitude may also be linked to the practice of sharing medicines among people who share the same symptoms without seeing and getting a prescription from a physician. The idea was that “if the medicine worked for one person’s symptoms, it can also work for another person with similar symptoms.”

Storage of medicines among households is generally the same for all respondents. For common ailments, most buy medicines in small retail quantities. This way of purchasing and dispensing of medicines can sometimes result in medicines in blister packs losing vital information such as the medicine’s name and expiry date. This can increase the risk of household members taking the wrong, and sometimes, even expired medicines. This pattern of consumption should be an important consideration in the way how medicines are packed and sold in the country.

5. CONCLUSIONS

Overall indicators of access show that key essential medicines selected for the country are partially available in public health facilities (69%), warehouses that supply public health system (74%) and private pharmacies (63%). The length of stock out durations at the public procurement (69 days) and public sector (63 days) indicate that the key essential medicines are not continuously available. The percentage of prescribed medicines dispensed or administered to patients at public health dispensaries reached 78% which suggests that there is a high correlation of the medicines being prescribed or administered in these facilities and the stocks that the public health dispensaries maintain. Although the number is good, there is a diminution of almost 7 percentage points from that of 2009 value. Further, the pattern suggests that public health facilities are procuring their stocks from varied sources.

From the global list of drugs, mean availability of originator brand and generic medicines in the public sector was 12 % (compared to 8% in 2009) and 42% (27% in 2009), while in private sector it was 29% (14.7% in 2009) and 45% (20% in 2009), respectively. These indicate a huge jump in the availability in both the public and private sector outlets but more in the private sector. Mean availability of generic medicines in other sectors (or NGOs) was very high at 59%. However, there are very few (4) such outlets included in this round of the survey.

In the public sector, the public procurement has been shown in the 2005, 2009 and 2017 surveys to have the lowest MPRs for generic and innovator brands. However, in 2017, it is still purchasing medicines at prices higher than international reference prices (3.33 for branded medicines and 3.63 for generic medicines). Public sector patient prices on the other hand decreased significantly from 30.23 (2009) to 3.52 for innovator brands and from 9.78 (2009) to 3.31 for generic medicines. This huge diminution of medicine prices may be related to the implementation of the Government Mediated Access Price (GMAP) and the Maximum Drug Retail Price (MDRP). An earlier study concluded that these government programs have effectively lowered the prices of 6 out of the 44

sampled medicines[2]. A separate study can be designed to explore further this association.

Affordability of medicines for certain disease conditions and treatment, defined as the number of days' wages of the lowest paid government worker needed to purchase standard treatments are the same for lowest price generics in the public and private sector outlets for some conditions, like adult Pneumonia [Amoxicillin] (0.2 days) and Hypertension [Captopril](0.6 days),. The affordability of lowest price generics in the public sector improved but most conditions would still require at least half a day's wage. Treatments costing over a day's wage of the lowest paid government worker was limited to adult Pneumonia [Cefuroxime] (1.3 days).

While there are some palpable gains between the 2009 and 2017 round of this survey, for example the significant drop in the median price ratio for generic drugs in both public and private sectors, as well as, the universal use of prescription using the INN, there are still areas that need further work to improve access and encourage rational use of medicines. The huge decrease in the prices of both generic and branded medicines are developments in the right direction. However, the prices of these medicines are still three times more expensive compared with that of the international reference prices. The saying "*mahirap ang magkasakit*" is still very much true today because many common ailments still require treatments that is equivalent in cost of a half day's work, at the very least. The results of this analysis suggest that a mix of policies needs to be implemented to make medicines more accessible and used in a more rational way. The findings show that access components such as strategies to improve availability and enhance affordability of medicines should be sustained in order to ensure equity in access to basic medical treatments, especially for the poor. Appropriate use of drugs should also be promoted. Within the context of the Philippine setting, these access to medicine policies can be framed within the goals and targets of the Sustainable Development Goals (SDGs) but also within the Universal Health Care strategy.

[2] Amlodipine, atorvastatine, glicazide, ciprofloxacin, metronidazole, co-amoxiclav

From the household survey, it was found that the geographical location of public health care facilities seems not to be a significant factor hindering access to medical services. Furthermore, households consider that availability of medicines is higher in private health care facilities compared with public health care facilities. This perception is supported by the data collected at the facility level survey of the study. Majority of medicines are obtained from private pharmacies or drug sellers even if the prices are perceived to be more expensive compared with medicines from public health care facilities.

Respondents perceive the services in public health care facilities to be of good quality despite the inadequacy of medicines. There is a high preference for branded and imported drugs, as these are perceived to be of better quality. Generic medicines are perceived to be of poorer quality compared with branded medicines. This perception has to be considered carefully since consumers tend to favor brands regardless of source (i.e. public or private health facilities). This commonly accepted perception may have a long-term behavioral impact on the purchasing habits of drug consumers. Similarly, imported medicines are perceived to be of better quality compared to locally manufactured medicines.

Less than half of all the prescriptions for acute and chronic illnesses were from medical professionals with high prevalence of self-medication noted among the respondents. This pattern was reported for acute illnesses where the proportion of minor illnesses (running nose etc.) is high, which may further reinforce this trend. Furthermore, most of the medicines found at home were from past treatment regimen. The average monthly cost of medications for chronic disease was PhP 1166. The average cost of a prescription for acute illness was PhP 517. Generic medicines are perceived to be less expensive compared with branded medicines. Most frequent reasons for non-compliance to medical treatment for acute and chronic diseases were improvement of symptoms, advice from someone in the household against completion of the course, and affordability to buy the medicines. Medicines covered by insurance for acute and chronic conditions were very negligible.

Recognizing that many of the Millennium Development Goals (MDGs) were not met, 195 countries including the Philippines adopted the Sustainable Development Goals (SDG) for 2016 to 2030, to replace MDGs (Cabral, 2016). The health-specific agenda, SDG No. 3 states "Ensure healthy lives and promote well-being for all of all ages." The Philippines Health Agenda 2016-2022: All for Health towards Health for All, is the blueprint of the current administration to attain this health-related SDG. Specifically, target number 8 of SDG No. 3 aims to achieve universal health coverage (UHC) including financial risk protection, access to quality essential health care services and access to safe, effective quality, & affordable essential medicines and vaccines for all.

While the existing programs on rational medicines use, including health access to cheaper and better-quality medicines are apt articulation of SDG No. 3, the inaccessible and prohibitive health costs in the country remains a major issue. Many Filipino families are pushed to poverty due to health care expenditures. Some forego or delay care due to prohibitive and unpredictable user fees or co-payments, and for many, PhP 4,000/month healthcare expenses considered catastrophic for single income families (Department of Health, 2016). On top of these Cabral (2016) noted the growing health challenge due to inappropriate and irrational use of anti-infective drugs on humans and animals that results in new, powerful, and even more dangerous infectious agents.

The results of this study showed that the mean percent availability is higher for generic medicines (42% for the public sector and 45% for the private sector) compared with the branded medicines (12% for the public sector and 15% for the private sector). The highest mean percent availability figure in the study was 45% for generic medicines in the private sector. Using the same methodology for measuring availability of essential medicines in 2009 and 2017, the current study showed that generic medicines availability in the public sector increased from 27.5% (2009) to 42% (2017) while branded medicines availability also increased from 8 % (2009) to 12% (2017). These figures, however, are still below the 2003 MDG report estimate of 50-70% and 2004 WHO estimate of 66% on the indicator

“proportion of the population with access to affordable essential medicines. Further, it is interesting to note that availability of medicines for both branded and generic brands are higher for the private sector, and though it may not be statistically significant, the pattern is worth exploring further. Do most Filipinos now turn to private sources for their medicine supplies? Although it is too early to tell, the huge jump in the availability of generic medicines could also be an indication of the long-term effect of the generic medicines law.

The results of this survey show that, on the sample considered, availability of basic medicines is still an issue. Relative to the 2009 results, medicine prices now do not look as high when compared to international reference price, as well as, to the poorest consumers’ ability to pay for it. However, in a country where a significant portion of the population is considered poor (22% in 2015) paying three times more than the international price is still a major concern. While programs on medicine access and health insurance coverage have expanded tremendously in the last few years, there is still a need to validate whether the assistance are really reaching those who need it most. In a context where many outpatient medicines are not covered by the national health insurance, and where client targeting is still an issue, price determinant can further exacerbate existing barriers to medicine access. The results from the household survey also has the same conclusion.

The Philippines are now looking towards Universal Health Care (UHC) that aims to provide equitable and inclusive health services to all. Strategies to achieve this ambition have to take careful consideration of medicines availability (including extended stock out periods) and affordability (price and health insurance coverage) in the country. The definition of adequate policies and mechanisms to tackle these issues should be key components of the realization of Universal Health Care in the Philippines. Meanwhile, the inroads achieved by existing policies on access to medicines (i.e. Generics Law) require good monitoring and reporting systems to determine, and eventually alleviate, the remaining challenges and obstacles in its implementation.

6. RECOMMENDATIONS

Recommendations provided in this section were already presented for validation with the DOH Pharmaceutical Division during the Mid-Term Report and Presentation of the results last 24 October 2017. Recommendations mainly cover matters concerning methodology data analysis and policy implications.

The study used the WHO methodology on Pharmaceutical Situation Assessment (PSA) which was the methodology used in the 2018 Philippine PSA study. The methodology has three levels namely: Level I involves core structure and process indicators, Level II focuses on core outcome or impact indicators and Level III deals with the in-depth assessments of specific components of the pharmaceutical sector such as pricing, traditional medicines, HIV/AIDS, regulatory capacity, drug supply, and trade-related aspects of intellectual property rights (TRIPS).

Level II also includes access to essential medicines and rational use of medicines utilizing a systematic survey on health facilities and households This study limited its scope to Level II and Level III indicators, particularly focusing on the systematic survey of health facilities and households.

The Policy recommendations will also discuss some of the implications to the Philippine Medicines Policy (PMP) 2017-2022 These recommendations will also include the proposal to use the results of the 2017 PSA as baseline for the Sustainable Development Goal Indicator 3.b and directions for further studies.

6. 1 Methodology and Data Analysis

6.1.1 On the sampling methodology

The 2008 and 2017 Pharmaceutical Situation Assessment used the same study sites. The aim was to have data sets for possible panel studies where results can be later compared. The said sites were selected based on the following

sampling methodology on the selection of geographic area in the 2008-2009 WHO study:

- Largest urban area, for which the National Capital Region was selected.
- Five other administrative areas randomly selected in two stages with probability proportional to population size.

Stage 1 - Administrative regions were classified according to population size
Stage 2 – Administrative regions were randomly selected for North Luzon, Central Luzon, Southern Luzon, Visayas and Mindanao

It is recommended that if WHO PSA methodology continues to use the same sampling methodology, a different set of regions and provinces be selected in the next study. This will lead to more provinces being assessed using the standard WHO methodology. However, there will be implications on the proposed longitudinal studies for provinces already part of the previous studies.

6.1.2 On the selection of health facilities and respondents

In the selection of the public and private health facilities to be included in the study, it is recommended that the DOH National Health Facility Registry (NHFR) be used as the main reference for determining the status of the health facilities to be included in the study. This will also inform the researchers if there are enough health facilities per category, and subsequently, if there are enough facility respondents for the survey.

6.1.3 On enhancing the survey forms

The following items refer to proposed specific enhancements of the survey forms used in the study:

- Consult DOH National Standard Treatment Guidelines in the selections of medicines in Survey Forms 3 and 12 and select specific treatment guidelines for identified illnesses before commencing the survey.

- Pre-determine the medicines to be included in the survey specific to affordability items in Survey Forms 3 and 12.

- Adjust the Survey Forms Format to have more space for data capture and accommodate more respondents in the tables. Survey Form 7 is cited as an example.

- In the household survey, specifically for Questions 12 (Acute Form), 19 (Chronic Form), and 23, it may be helpful to add an additional column on the “Pharmacological” or “Therapeutic” class of the medicines prescribed for acute and chronic illness and medicines found in households. Codes can be used to designate categories such as “analgesics” or “macrolide anti-bacterials.” This can help the research study patterns of irrational use of medicines or non-adherence to STGs which contribute to a variety of problems such as antimicrobial resistance.

- Consider having an automated version of the survey, such as data input through handheld devices apps or online through a website interface. This will facilitate data encoding and sorting. A conversion platform of surveys into automated versions was developed at the Ateneo de Manila University and can be tapped for this purpose.

6.1.4 On the analysis of data

- It was observed in this study that there is significantly lower number of Mission and NGO Health facilities included in the survey compared with the 2009 study. It is recommended that distinct spreadsheets be created for mission and NGO health facilities so they can be analyzed separately from the other facilities.

- Furthermore, concerning Mission and NGO Facilities, it will be prudent to consult the DOH to check for a list of existing Mission/NGO Facilities during the survey planning process to manage expectations on how many such facilities can be realistically included in the survey.

- Future researches should consider using EpiInfo as survey encoding interface for the household survey. It is pretty stable and reliable. The EpiInfo version developed for the PHL 2017 PSA can be a reference for the other PSAs to be conducted.

- However, additional work is needed to transfer the data from EpiInfo format to MS Excel or other statistical software (SPSS, SAS, R, Stata, etc). The conversion process must be documented well to allow future surveys the latitude to choose which statistical software to use in succeeding rounds of the survey.
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- The data collected from this study will be included in the AdMU IPC database and will be guided by the university policies on data management and utilization. Publications on the results of the said studies will also be planned and cleared with the study partners and host agencies/

6.1.5 On the selection of Standard Treatment Guidelines (STGs)

It is recommended that the following criteria are considered in the selection of the STGs that will be included in the study.

- Include common conditions seen across all levels of healthcare
- Address special therapeutic needs of vulnerable population groups.
- Consider local context, capacity, cost, and resources available to targeted household respondents.

6.1.6 On the proposed further studies

- The WHO HAI Medicine Price Survey was conducted in the Philippines in 2005, 2008 and 2017 while the WHO Pharmaceutical Situation Assessment (PSA) was done in 2008 and 2017. The data collected from the series of surveys can be further analyzed as part of panel studies on Access to Medicines and National Medicine Policies.

- The data from the WHO HAI Medicine Price Survey is a possible data source to cross-validate data of the Drug Price Reference Index (DPRI). There has been three WHO HAI Medicine Price Surveys done in the Philippines, 2005, 2008 and 2017. Further analysis of these and DPRI results can be done to determine possible medicine price changes and patterns. This will also serve to validate the medicine price studies already conducted and inform policies that maybe needed to improve access to medicines programs

- The WHO PSA Methodology is due for WHO updating and the results of this study can be inputs to this updating process. The indicators for the Sustainable Development Goals (SDG) 3.b are also now being discussed at the WHO level and the results of the 2017 Philippine PSA can be offered as the Philippine SDG 3.b baseline. The WHO PSA methodology was used as one of the monitoring tools for the Millennium Development Goals (MDG) 8, and is now being proposed to be used for SDG 3.b. It is recommended that the DOH Pharmaceutical Division makes representations with the DOH Health Policy Bureau for this proposed adoption of the 2017 PHL PSA results as PHL SDG 3.b baseline.

- Further studies to explore the initial patterns identified in the 2017 PSA. These can include studies on the geographical distribution, local contexts and health systems conditions where irrational drug use such as dispensing of prescription drugs without proper prescription is still rampant. The lack of knowledge and low use of PNF should also be explored further.

6.2 Policy Recommendations

6.2.1 Implications of the 2017 PSA findings on access and availability of medicines

- The findings on the access of medicines show that key essential medicines selected for the country are partially available in public health facilities (69%), warehouses that supply public health system (74%) and private pharmacies (63%). The length of stock out durations at the public procurement (69 days) and public sector (63 days) indicate that the key essential medicines are not continuously available. These reflects some inefficiencies in the public health system procurement and distribution. The public sector procurement and distribution system needs to be reviewed and enhanced to increase availability and access to key essential medicines

- The percentage of prescribed medicines dispensed or administered to patients at public health dispensaries reached 78% which suggests that there is a high correlation of the medicines being prescribed or administered in these facilities and the stocks the public health dispensaries maintain. Although the number is good, there is a diminution of almost 7 percentage points from that of 2009. Further, the pattern suggests that public health facilities are procuring their stocks from varied sources. This indicates a fairly consistent prescribing pattern in public health dispensaries and should be regularly monitored to ensure its continuous improvement.

- From the global list of drugs, mean availability of originator brand and generic medicines in the public sector was 12 % (compared to 8% in 2009) and 42% (27% in 2009), while in private sector it was 29% (14.7% in 2009) and 45% (20% in 2009), respectively. This indicates a huge jump in the availability in both the public and private sector outlets but more in the private sector. Mean availability of generic medicines in other sectors (or NGOs) was very high at 59%. However, there are very few (4) such outlets

included in this round of the survey. This indicates that generic medicines have become more available in the public and private sector outlets but more in the private sector.

- The DOH should also plan for the conduct of regular medicine price surveys in the country. The surveys, while providing availability and affordability data, will also help assess adherence to existing national essential medicines policies or measure the effect of interventions that may affect medicine prices, like new laws or executive issuances, changes in health insurance reimbursement rules, changes in tariffs and taxes or introduction of new drug policies by the government. These can serve as inputs to price monitoring activities (e.g. such as CSO/NGO initiatives, LGU and NGA price monitoring) especially data that are citizen-centric (vs. provider-centric).

6.2.2 Implications of the 2017 PSA findings on the trends in medicine prices from public sector procurement, public sector patient prices and private sector patient prices

- In the public sector, the public procurement has been shown in the 2005, 2009 and 2017 surveys to have the lowest MPRs for generic and innovator brands. However, in 2017, it is still purchasing medicines at prices higher than international reference prices (3.33 for branded medicines and 3.63 for generic medicines). Public sector patient prices on the other hand decreased significantly from 30.23 (2009) to 3.52 for innovator brands and from 9.78 (2009) to 3.31 for generic medicines. A separate study can be designed to identify the factors contributing to this decline in prices.

- In the public sector, the procurement agency has been shown to have the lowest MPRs but is purchasing medicines at prices higher than international reference prices (3.33 for branded medicines and 3.63 for generic medicines), indicating a relatively fair level of purchasing efficiency. These can be further improved to further increase availability of the generic medicines sold at a lower price in the public sector outlets.

- The findings on MPRs can be used to compare prices in different provinces as well as reference for the Drug Price Reference Index (DPRI) data and LGU scorecard indicators. The 2017 MPR can serve as baseline for the following access to medicines program:

    - Medicine Price Comparisons across regions and between private and public sectors
    - Reference for and comparison with the 2017 DPRI results. The methodology for comparing these ‘medians’ need to be consulted with a technical group
    - Reference for the LGU scorecard indicator on “Access to low-cost quality medicines" and LGU development plans
    - Reference for the Philippine Health Agenda (PHA) related indicators on ‘Access to Medicines’

6.2.3 Implications of the 2017 PSA findings on the cost of medicines and affordability of medicines for selected diseases

- From the household survey, the average monthly cost of medications for chronic disease was PhP 1166. The average cost of a prescription for acute illness was PhP 517. Generic medicines are less expensive compared to branded medicines. Most frequent reasons for non-compliance to medical treatment for acute and chronic diseases were improvement of symptoms, advice from someone in the household against completion of the course, and affordability to buy the medicines. Medicines covered by insurance for acute and chronic conditions were very negligible. This seemingly inadequate health insurance coverage among the households included in the study should be explored further in the light of PhilHealth claim that 91% of the population is already covered by the National Health Insurance Program (PhilHealth, 2016)

- Affordability of medicines for certain disease conditions and treatment, defined as the number of days' wages of the lowest paid government worker needed to purchase standard treatments are the same for lowest price generics in the public and private sector outlets for some conditions, like adult Pneumonia [Amoxicillin] (0.2 days) and Hypertension [Captopril] (0.6 days). The affordability of lowest price generics in the public sector improved but most conditions would still require at least half a day's wage. Treatments costing over a day's wage of the lowest paid government worker was limited to adult Pneumonia [Cefuroxime] (1.3 days).

6.2.4 Implications of the 2017 PSA findings on how quality of services and medicines in the public and private facilities

- From the household survey, it was found the geographical location of public health care facilities seems not to be a significant factor hindering access to medical services. Furthermore, households consider that availability of medicines is higher in private health care facilities compared to public health care facilities. This perception seems to be confirmed by actual data collected at facility level in the Facility survey. Majority of medicines are obtained from private pharmacies or drug sellers even if the prices are more expensive compared to medicines from public health care facilities.

- Respondents perceive that services in public health care facilities are perceived to be of good quality despite the lack of medicine. There is a high preference for branded and imported drugs, in terms of quality perception. Generic medicines are perceived to be of poor quality compared to branded medicines. The interpretation of this perception has to be considered carefully since consumers tend to favor brands whatever the sector. However, it is also well known that such perception may have behavioral impact on purchasing habits. Imported medicines are perceived to be of better quality compared to locally manufactured medicines.

6.2.5 Implications of the 2017 PSA findings on the Rational Use of Medicines

- Less than half of all the prescriptions for acute and chronic illnesses were from medical professionals with high prevalence of self-prescription among the sample population. However, this was reported for acute illness where the proportion of what looks to be minor illness (runny nose etc.) is high and which may further increase the trend. Furthermore, most of the medicines found at home were from past treatment regimen.

- The Essential Medicines List (EML) and the Standard Treatment Guidelines were found in 73% and 67% of the public healthcare facilities, respectively. This indicates that there is still a need to promote vigorously the importance of having a copy of both EML and STG in all public health facilities.

- The average number of medicines per prescription at the public facility dispensaries was 2.0 and can be considered adequate. The percentage of patients with antibiotics prescribed in the public facilities was 53 %. While a little lower than the 63% in the 2009 health facility survey, this figure is still considered high, and may indicate an irrational prescribing pattern for this group of medicines. The percentage of patients with injections prescribed in the public facilities was 7% which is considered an adequate prescribing pattern for this group of medicines.

- Another variable studied was the adherence of prescribers to recommended treatment regimens. Findings show that prescribers are likely to not adhere to treatment guidelines since 40% of non-bacterial cases of diarrhoea were prescribed antibiotics and 70% of non -pneumonia ARI and 60% of those with mild/moderate pneumonia were also prescribed with antibiotics.

- A median percentage of 50% of prescribed medicines were on the EML, indicating a somewhat limited adherence of physicians to this list. However,

100% of medicines in the surveyed prescriptions were prescribed by generic name, which enforces access to medicines and rational use.

- The percentage of medicines adequately labeled was 100% for both public health facility dispensaries and at private pharmacies, respectively. Patients at both private pharmacies and public health facility dispensaries knew how to take their medicines. Both facilities registered 100 median percentage in this indicator.

- Information on the Rational Use of Medicines including updated Essential Medicine Lists, relevant policies (e.g. policy to address Anti-Microbial Resistance (AMR), pharmaceutical dispensing, etc.) should be promoted more through various means.

- Continuing education of health professionals on RUM and other medicine policies can be made part of the mandatory Continuing Professional Education for health professionals through the Professional Regulations Commission (PRC).

7. REFERENCES

Anna Melissa Guerrero, M. (no date). The Philippine Medicine Policy: Strategic Directions on Access to Medicies for Filipinos 2011-2016 [PowerPoint slides].

Anna Melissa Guerrero, M. (no date). The Philippine Medicine Policy: Strategic Directions on Access to Medicies for Filipinos 2011-2016.

Cabral, E. I. (2016). *The Philippine Health Agenda for 2016 to 2022.* Presented at the Health for Juan and Juana, The Philippine Health Agenda for 2016 and Beyond. Foum held on May 4, 2016 at Fuller Auditorium, Asian Institute of Management., Makati. Retrieved January 18, 2018, from https://www.pcp.org.ph/files/PJIM%20Vol54%20No2/The_Philippine_Health_Agenda_2016_to_2022.pdf

Congress of the Philippines . (n.d.). *RA 10767. Comprehenstive Tuberculosis Elimination Plan Act.* Retrieved January 17, 2018, from http://www.officialgazette.gov.ph/downloads/2016/04apr/20160426-RA-10767-BSA.pdf

Department of Health. (2014, October 08). Administrative Order No. 2014 -0033. The Philippine Medicine Policy toward Kalusugan Pangkalahatan.

Department of Health. (2016). *All for Health Towards Health for All: Philippine Health Agenda 2016-2022.* Power Point Presentation, Manila. Retrieved January 05, 2018, from http://www.doh.gov.ph/sites/default/files/basic-page/Philippine%20Health%20Agenda_Dec1_1.pdf

Department of Health. (no date). *Electronic Essential Drug Price Monitoring System (E-EDPMS).* Manila. Retrieved January 18, 2018, from http://www.doh.gov.ph/node/1115

DOH. (2017). *DUQUE: DOH TO HIT THE GROUND RUNNING ON UNFINISHED UHC AGENDA.* Manila. Retrieved January 18, 2018, from https://www.doh.gov.ph/press-release/DUQUE-DOH-TO-HIT-THE-GROUND-RUNNING-ON-UNFINISHED-UHC-AGENDA.

DOH-PD. 2018. *2017 Progress Report Cheaper Medicines Act*. Unpublished manuscript, Manila

Ho, B. L. (2015). *Mapping of Medicine Entitlement Programs of the National Government.* World Health Organization and Medicine Transparency Alliance.

NSCB. (2014). *The Philippines in Figures 2014.* Quezon City.

PhilHealth. (2015). *PhilHealth Introduces Enhanced .* PhilHealth. Retrieved January 17, 2018, from https://www.philhealth.gov.ph/news/2015/enhanced_pcb.html

PhilHealth. (2016). *Moving Forward Towards Health For All.*

Philippine Statistic Authority. (2017). *Total Health Expenditures grew by 10.5 percent in 2016.* Manila: Philippine Statistic Authority. Retrieved January 17, 2018, from https://www.psa.gov.ph/content/total-health-expenditures-grew-105-percent-2016

Philippine Statistics Authority. (2011). *Life Expectancy at Birth of Women.* Retrieved January 18, 2018, from https://psa.gov.ph/content/life-expectancy-birth-women

Philippine Statistics Authority. (2012). *The Age and Sex Structure of the Philippine Population: (Facts from the 2010 Census).* Retrieved January 2018, 2018, from The Age and Sex Structure of the Philippine Population: (Facts from the 2010 Census)

Philippine Statistics Authority. (2012). *The Age and Sex Structure of the Philippine Population: (Facts from the 2010 Census).* Retrieved January 18, 2018, from https://psa.gov.ph/content/age-and-sex-structure-philippine-population-facts-2010-census

Philippine Statistics Authority. (2017). Total Health Expenditures grew by 10.5 percent in 2016. Republic of the Philippines.