

Philippines Pharmaceutical Situation  
2009 WHO Health Facility Survey on medicines

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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.

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## EXECUTIVE SUMMARY

The facility survey was conducted in 2008 and 2009 with support from the World Health Organization (WHO). This survey is a contribution to the baseline studies undertaken by MeTA which aim at providing a pharmaceutical sector assessment. 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) 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 four public facilities per survey area were then selected at random from all middle level public health care facilities, except in Palawan Province where only three (3) middle level public health care facilities were surveyed. Three private health facilities per geographic site and twelve private pharmacies were selected for each public facility for a total of eighty (80) private pharmacies sampled for the survey. One regional or provincial warehouse that supplies the public sector was visited in each area except in Palawan Province, Pampanga Province and Manila. The survey has been 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 survey results include the following:

- Overall indicators of access show that key essential medicines selected for the country are

partially available in public health facilities (53.3%), warehouses that supply public health system (33.3%) and greatly available in private pharmacies (100%). The length of stock out durations at the public procurement and public sector indicate that the key essential medicines are not continuously available. However, the percentage of prescribed medicines dispensed or administered to patients at public health dispensaries reached 84.8%. The infrastructure for

the conservation of medicines was adequate for facilities surveyed with no expired medicines found in the public health dispensaries, private drug outlets and warehouses.

- From the global list of drugs, mean availability of originator brand and generic medicines in the public sector was 8% and 27%, while in private sector it was 14.7% and 19.7% respectively. This indicates that generic medicines are more available in public sector outlets and branded medicines are more available in private sector outlets.
- The quality of health care facilities as measured by the adequacy of infrastructure of conservation conditions of medicines were similar for public sector, private sector and public procurement sources at 80-85% and the percentage of expired drugs was 0%.
- Patients who bought medicines from private pharmacies know how to take the medicines appropriately compared to those who bought from public health pharmacies.
- On a list of 44 essential medicines, prices of branded medicines, using Median Medicine Price Ratio (MPR) are more expensive both for the public sector (30.23) and private sector (37.10) compared to the lowest priced generic medicines. The public sector MPR for generic medicine 9.78 was lower than the private sector generic medicine MPR at 10.76. The mean percent availability is higher for generic medicines (27.5% for the public sector and 19.7% for the private sector) compared to the branded medicines (8.0% for the public sector and 14.7% for the private sector)

	Procurement	Public Sector	Private Sector
<i>Mean Percent Availability</i>			
Brand	NA	8.0%	14.7%
Generic	NA	27.5%	19.7%
<i>Median MPR for Medicines with Minimum Number of Prices</i>			
Brand	26.33	30.23	37.10
Generic	7.97	9.78	10.76

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. However in 2009, it is still purchasing medicines at prices higher than 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. The table below shows the trends in medicine prices using the Median Medicine Price Ratios (MPR) as reference in studies conducted in 2002, 2005 and 2009. It is however important to consider that this study was conducted before the

implementation of the Government Mediated Access Price (GMAP) and the Maximum Drug Retail Price (MDRP) which later on effectively lowered the prices of 6 out of the 44 sampled medicines<sup>1</sup>.

<b>Median Medicine Price Ratios (MPR)</b>				
Year Conducted	Innovator Brand		Generic Equivalent	
	Private	Public	Private	Public
2002*	<b>15.95</b>	<b>18.24</b>	<b>8.36-17.76</b>	
2005**	<b>17.28</b>	<b>15.31</b>	<b>5.64</b>	<b>6.40</b>
2005 Public Procurement**		<b>14.19</b>		<b>5.14</b>
2008/09	<b>37.10</b>	<b>30.23</b>	<b>10.76</b>	<b>9.78</b>
2008/09 Public Procurement		<b>26.33</b>		<b>7.97</b>

\* Health Action Information Network (HAIN), 2002

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

- 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 Hypertension [Atenolol](0.8 days), Adult Respiratory Infection [Amoxicillin](0.3 days). The affordability of lowest price generics in the public sector is still poor with most conditions costing more than three fourths of a days' wage. Treatments costing over a day's wage of the lowest paid government worker include Hypercholesterolaemia [Simvastatin] (1.4 days), Hypertension [Captopril] (1.1 days). Meanwhile, treatments for Ulcer [Omeprazole] and pediatric respiratory infection [Ceftriaxone] cost more than a day's wage

The results of the survey show that, on the sample considered, availability of basic medicines is an issue. Prices appear also high if compared to international reference price as well as to the the poorest ability to pay for it. In a context where outpatient medicines are not covered by the national health insurance and where the enrollment of indigent people is still an issue, price determinant can be a significant barrier to access. The results from the household survey performed concomitantly tend to come to the same conclusion.

The Philippines are now looking towards Universal Health Care. Strategies to achieve this ambition have to take careful consideration of medicines availability and affordability (price and health insurance coverage) in the country. The definition of adequate policies and mechanisms to tackle these issues will be key components of the realization of Universal Health Care in the Philippines.

<sup>1</sup> Amlodipine, atorvastatine, glicazide, ciprofloxacin, metronidazole, co-amoxiclav

## **1. CONTEXT OF THE WHO PHARMACEUTICAL SITUATION ASSESSMENT**

The primary objective of conducting medicine price monitoring survey is to inform consumers and purchasers about current prices of medicines and patterns 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 Medicine Law.

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 World Health Organization Office of the Representative in the Philippines is providing support to the Medicine Transparency Alliance by conducting the 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 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 used 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 track 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 programmes 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.

A field study to assess the pharmaceutical situation was undertaken in the Philippines in 2008-2009 using a standardized methodology developed by the World Health Organization. The survey was conducted in six provinces: Pampanga, Manila, Capiz, La Union, Misamis Oriental and Palawan. In each province, six (6) public health care facilities, twelve (12) private pharmacies and a warehouse were surveyed. Data entry was performed using designed survey forms. Analysis was done using Excel® program. The WHO-HAI workbook was used to analyze drug price data. Most results are expressed as medians (median values).

## **2. COUNTRY BACKGROUND**

The Philippines is a large-sized country, covering an area of 299, 764 km<sup>2</sup>. It is divided into 17 regions, 80 provinces, 138 cities, 1,496 municipalities, and 42,025 barangays. As of the last census in 2007, the Philippine population numbered 88, 574, 614, with a population density of 295 per square kilometer. The Philippines is a lower middle income country with a nominal GDP of US \$1,745 per capita.

Life expectancy at birth is 64 years for males and 70 years for females. The country's population is predominantly young, with the 0-14 year age group representing 33.8% and those aged 65 years and above comprising only 4.4%.

### **2.1. Health sector**

In 2007, the total expenditure on health was Php 234,320,986. Approximately 3.8% of the GDP is spent on health. Of the total expenditure on health, 31% is government expenditures. The remaining 69% of total expenditures on health is private expenditures, with 54% being out-of-pocket expenditures.

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. As of the first quarter of 2010, PhilHealth reported that over 20 million Filipinos were covered by their insurance policy, majority of which were employees in the private sector. (1) Medicines delivered during a confinement episode are covered by Philhealth till a defined ceiling. 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.

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. Based on their catchment areas, health facilities could either be barangay health stations, rural health units, district hospitals, provincial hospitals or regional hospitals. Hospitals can also be classified according to their service capability, under which there are 4 levels. Level 1 is an emergency hospital that provides initial clinical care and management to patients requiring immediate treatment, as well as primary care on prevalent diseases in the locality. Level 2 is a non-departmentalized hospital that provides clinical care and management on the prevalent diseases in the locality. Level 3 is a departmentalized hospital that provides clinical care and management on the prevalent diseases in the locality, as well as particular forms of treatment, surgical procedure and intensive care. Level 4 is a teaching and training hospital (with at least one Accredited Residency training Program for Physicians) that provides clinical care and management on the prevalent diseases in the locality, as well as specialized and sub-specialized forms of treatment, surgical procedure and intensive care. 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**

### 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. No update of the national medicines policy is currently present.

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 Drug Formulary Essential Drug List. This mandate has been used by DOH to negotiate or set significant price reduction with/to some pharmaceutical companies in 2009 thru the Government Mediated Access Price (GMAP- 18 molecule, 45 branded products) and the Maximum Drug Retail Price (MDRP – 5 molecules) initiatives.

### 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 Authority (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 medicines 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. As of November 2009, a total of 22,981 medicines have been registered. 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 the 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.

### 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, 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 regards to drug distribution, the Pharmaceutical and Health 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.

#### Medicines financing

In 2009, the total expenditure for medicines including supplements was approximately PhP 110 billion. 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 the 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 service.

The Philippines is just starting a pilot on a national medicine price monitoring system for retail/patient prices.

There are official written guidelines on medicine donations that provide rules and regulations for donors and provide guidance to the public, private and/or NGO sectors on accepting and handling donated medicines.

#### Rational use of medicines

The Philippines' National Drug Formulary (PNDF) is defining the national Essential Medicines List (EML). It was last updated in 2008 and is being used as basis for public sector procurement. The national formulary committee of the Department of Health is responsible for the selection of products on the national EML and is updated in cycles regularly. 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: 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. 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 medicines included in the study (Annex 1) was prepared by the Department of Health which included 44 essential medicines. Of the 44 medicines in the list, 15 medicines were identified as key medicines which are indicated 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 Department of Health conducted the survey in two areas, Manila and Pampanga. The remaining four areas, chosen randomly, were selected as "survey areas" for data collection by this study team. The survey areas are as follows:

1. Capiz in Region VI
2. La Union in Region I
3. Misamis Oriental in Region X
4. Palawan in Region IV-B

5. Pampanga in Region III
6. Manila in National Capital Region (NCR)

In each survey area, the sample of public facilities was identified by first selecting the additional four public facilities per survey area were then selected at random from all middle level public health care facilities. Thus, four (6) public health facilities and their respective dispensaries were sampled for the survey per site. In one province, Palawan, only five public health facilities were sampled for a total of 35 public health facilities sampled in all the survey sites. One regional or provincial warehouse that supplies the public sector was visited in each area except in Palawan Province, Pampanga Province and Manila.

Three private health facilities per geographic site and twelve private pharmacies were selected were selected for each public facility for a total target of 72 private pharmacies for the survey. In Capiz province however, one facility declined to take part in the study. No other facility was available to be sampled. Thus, only eleven (11) private facilities were included in the analysis for Capiz Province.

The table below summarizes the number of facilities sampled for the Level II facility survey:

*Table 1. Summary of sample facilities, Level II Facility Survey, Philippines, 2008-2009*

	PUBLIC HEALTH FACILITIES		PRIVATE HEALTH FACILITIES		WAREHOUSE		PRIVATE PHARMACIES	
	EXPECTED	ACTUAL	EXPECTED	ACTUAL	EXPECTED	ACTUAL	EXPECTED	ACTUAL
Capiz	6	6	3	2	1	1	12	11
La Union	6	6	3	3	1	1	12	12
Misamis Oriental	6	6	3	3	1	1	12	12
Palawan	6	5	3	3	1	0	12	12
Pampanga	6	6	3	3	1	0	12	12
Manila	6	6	3	3	1	0	12	12
<b>TOTAL</b>	<b>36</b>	<b>35</b>	<b>18</b>	<b>17</b>	<b>6</b>	<b>3</b>	<b>72</b>	<b>71</b>

In each facility surveyed a set of Survey Forms was used. This allowed standard method of gathering information to calculate the indicators. A copy survey form used in the survey is found in Annex 1. Table 2 on the other hand summarizes the Level II indicators and lists the corresponding survey forms. Information on data collection and calculation can be found on the respective survey forms.

Table 2. Summary list of indicators and corresponding survey form used to collect the data, Level II Facility Survey, Philippines, 2008-2009

Indicator		Survey Form
Access		
1	Availability of key medicines in public health facility dispensaries, private drug outlets and warehouses supplying the public sector ( country list) Mean availability of originator brand and generic medicines in the public/private sector	1, 10, 15 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: <ul style="list-style-type: none"> <li>• Patient prices for generic medicines/innovator drug in the public/private sector</li> <li>• Prices of generic/ innovator drug in public/private sector compared to international price index.</li> <li>• Affordability -ratio of cost to treat common conditions using standard regimens, 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)</li> </ul>	2, 11
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

<b>Indicator</b>		<b>Survey Form</b>
11	% prescription medicines bought with no prescription	14
<b>Other information</b>		
1	% of facilities that comply with the law (presence of a pharmacist)	Section A, C
2	% facilities with pharmacist, nurse, pharmacy aide/ health assistant or untrained staff dispensing	Section A, C
3	% facilities with doctor, nurse, trained health worker/health aide prescribing	Section B
4	% facilities with prescriber trained in RDU	Section B

Verification of availability, stock-out and expired medicines were based on a key medicines list, selected according to the first-line therapeutic choice to most common and important health conditions at the primary health care level. Availability was also measure using drugs in global list differentiating innovator and lowest priced generics. Meanwhile, verification of affordability of treatment as well as compliance of prescribers to recommended treatment protocol/guide was performed considering tracer health conditions treated with drugs in the global list.

Data collection methods included patient and health worker interviews after oral consent, check list guided observation and clinical and pharmacy records review.

The survey was conducted after approval by the Department of Health. Regional Health Offices and Provincial Health Officers were contacted for specific approval and cooperation.

Field team consisted of data collectors from the survey areas, selected according to prior experience in research and four supervisors who oversaw data gathering process and the initial cleaning and management of the data. The following field supervisors were trained on their specific roles in and procedures of the study.

*Table 3. Summary list of survey coordinators*

<b>Survey Area</b>	<b>Area Supervisor</b>	<b>Institutional Affiliation</b>
PAMPANGA	Dr. Dennis Quiambao	Department of Health
MANILA	Dr. Dennis Quiambao	Department of Health
PALAWAN	Dr. Ramon Docto	Palawan State University , Puerto Prinsesa City
MISAMIS ORIENTAL	Dr. Chona Echavez	Research Institute for Mindanao Culture (RIMCU), Xavier University , Cagayan De Oro City
LA UNION	Prof. Arjay Arellano	University of the Philippines , Baguio City
CAPIZ	Prof. Leo Quintilla	University of the Philippines, Miag-Ao, Iloilo

Supervisors from all the sites 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. Data collection took place between October 2008 and May 2009.

After review of completed Survey Forms, data were encoded in Summary Forms 1–4 and Workbook, both in Excel® and in freeware provided by the WHO survey package. These programs 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.

### 3.2. **Medicine Price Survey Methodology**

The methodology for measuring drug prices developed by the World Health Organization (WHO) and Health Action International (HAI) and used for the 2002 and 2005 medicine price survey was used in this study. The goal of the survey was to document and compare the prices, affordability, and availability of medicines in different sectors, including public sector procurement prices, public sector patient prices, and private sector patient prices. The WHO/HAI methodology specifies a core list of medicines to be surveyed, representing medicines commonly used for treating a range of chronic and acute conditions. It also includes data on the specific dosage, form, and strength that need to be collected for each medicine. This serves to ensure completeness of data on comparable products, thereby allowing for international comparisons. For each medicine, the innovator brand and its lowest-priced equivalent generic were surveyed, of which the latter was determined in each medicine outlet.

Availability was calculated as the percentage of establishments where an individual medicine was found. The availability data apply only to the day of data collection in each particular facility and does not reflect the average monthly or yearly availability of medicines in individual facilities.

For the price analysis, the medicines had to be available in at least four pharmacies for their price data to be included, except for procurement prices, where a single data point was used. Medicine prices found during the survey were not expressed as currency units but rather as ratios relative to a standard set of international reference prices:

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

The ratio is thus an expression of how much greater or lesser the local medicine price is than the international reference price, that is, an MPR of 2 would mean that the local medicine price is twice that

of the international reference price. Median price ratios facilitate cross-country comparisons of medicine price data.

The reference prices used were those of the 2007 Management Sciences for Health (MSH) taken from the International Drug Price Indicator Guide. These reference prices are the medians of recent supplier prices (or buyer prices where no supplier prices are available) offered by 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 nongovernment organizations (NGOs) so the prices are relatively low, representing efficient bulk procurement without the costs of shipping or insurance.

Results are presented for individual medicines as well as for the overall “basket” of medicines surveyed. 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 were used in the analysis to have a better representation of the midpoint value. The magnitude of price and availability variations is 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 (Php320.00 at the time of the survey). 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.

### **3.3. 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, providing 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 with 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 In one survey area, a private health facility refused to provide data to the study team. A replacement procedure allowed for substitution but there was no other private health facility was eligible for substitution.
- d. The results of the study should be interpreted within the time frame and sampling frame of the study. The recent years saw the enactment and implementation of access to medicines policies which affected the access and availability of essential medicines in the country. The study was conducted before such 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.

Country list was identified specifically for the Philippines by the DOH. It is a key list of 15 medicines for the common health conditions at the primary health care level. Medicines procured by the vertical programs (Expanded Program on Immunization, TB, Malaria, HIV/AIDS) were not included in the list of medicines to be surveyed. The key medicines to treat common conditions included in the survey included the following:

#### **Generic name and strength (unit)**

- 1 Amoxicillin 500 mg capsule
- 2 Cotrimoxazole 800 mg/260 mg tablet
- 3 Ciprofloxacin 500 mg tablet
- 4 Cefalexin 500 mg tablet
- 5 Metoprolol 50 mg tablet
- 6 Captopril 25 mg tablet
- 7 Simvastatin 20 mg tablet
- 8 Paracetamol 500 mg tablet
- 9 Mefenamic Acid 500 mg capsule/tablet
- 10 Glibenclamide 5 mg tablet
- 11 Metformin 500 mg tablet

- 12 Loperamide 2 mg capsule
- 13 Ferrous sulfate tablet
- 14 Salbutamol inhaler 100mcg/dose
- 15 Omeprazole 20 mg tablet

The global list has been elaborated by the WHO and DOH to include 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 4 below enumerates the list of medicines included in the study including the brand or generic product name, manufacturer of the brand name and pack size

*Table 4. Medicines included in the global list*

Generic name and strength (unit)	Brand or generic product name(s)	Manufacturer	Pack size
Albendazole 400 mg ( <i>cap/tab chewable</i> )	Zentel	GSK	100
Amitriptyline 25 mg ( <i>cap/tab</i> )	Tryptizol	MSD	100
Amlodipine 5 mg ( <i>cap/tab</i> )	Norvasc	Pfizer	100
Amoxicillin 500 mg ( <i>cap/tab</i> )	Amoxil	GSK	100
Amoxicillin syrup 50 mg/ml (250 mg/5ml) ( <i>millilitre</i> )	Amoxil	GSK	60 ml bottle
Atenolol 50 mg ( <i>cap/tab</i> )	Tenormin	AZ	100
Atorvastatin 20 mg ( <i>cap/tab</i> )	Lipitor	Pfizer	100
Beclometasone inhal. 50mcg/dose ( <i>dose</i> )	Becotide	GSK	200 do. inhaler
Captopril 25 mg ( <i>cap/tab</i> )	Capoten	BMS	150
Ceftriaxone injection 1g/vial ( <i>gram</i> )	Rocephin	Roche	1 vial
Cephalexin 250 mg ( <i>cap/tab</i> )	Keflex	Lilly	50
Chloramphenicol 500 mg ( <i>cap</i> )	Chloromycetin	Pfizer	100
Chloramphenicol susp 125 mg /5ml ( <i>millilitre</i> )	Chloromycetin	Pfizer	30
Ciprofloxacin 500 mg ( <i>cap/tab</i> )	Ciprobay	Bayer	50
Co-amoxiclav 625 mg ( <i>cap</i> )	Augmentin	GSK	60
Co-trimoxazole susp. 8+40 mg/ml (40+200mg/5ml) ( <i>millilitre</i> )	Bactrim	Roche	50ml bottle
Dexamethasone 0.5 mg ( <i>tab</i> )	Decilone	Westmont	
Diazepam 5 mg ( <i>cap/tab</i> )	Valium	Roche	100
Diclofenac 50 mg ( <i>cap/tab</i> )	Voltaren	Novartis	100
Digoxin 0.25 mg ( <i>tab</i> )	Lanoxin	GSK	500
Doxycycline 100 mg ( <i>cap</i> )	Vibramycin	Pfizer	80

Generic name and strength (unit)	Brand or generic product name(s)	Manufacturer	Pack size
Enalapril 10 mg (cap/tab)	Renitec	MSD	28
Ethambutol 400 mg (tab)	Myambutol	Lederle	100
Felodipine 5 mg (tab)	Plendil	AZ	100
Fluoxetine 20 mg (cap/tab)	Prozac	Lilly	28
Furosemide 40 mg (tab)	Lasix	San-Av	150
Furosemide 40 mg (tab)	Lasix	San-Av	600
Glibenclamide 5 mg (cap/tab)	Daonil	San-Av	100
Gliclazide 80 mg (cap/tab)	Diamicron	Servier	100
Hydrochloro-thiazide 25 mg (cap/tab)	Dichlotride	MSD	30
Ibuprofen 400 mg (cap/tab)	Brufen	Knoll	100
Isoniazid 300 mg (tab)			100
Isosorbide dinitrate 10 mg (tab)	Isordil	Wyeth	100
Metformin 500 mg (cap/tab)	Glucophage	BMS	100
Metronidazole 500 mg (cap/tab)	Flagyl	San-Av	100
Nifedipine- Retard 20 mg (tab)	Adalat Retard	Bayer	60
Omeprazole 20 mg (cap/tab)	Losec	AZ	14
Paracetamol susp. 24 mg/ml *(120 mg/5 ml) (millilitre)	Panadol	GSK	60 ml bottle
Pyrazinamide 500 mg (cap)	PZA-Ciba	Zandoz	500
Ranitidine 150 mg (cap/tab)	Zantac	GSK	60
Rifampicin 300 mg (tab)	Rimactane	Zandoz	120
Salbutamol inhal. *100mcg/dose (dose)	Ventolin	GSK	200 do. inhaler
Simvastatin*20 mg (cap/tab)	Zocor	MSD	30
Valproic Acid 500 mg (cap/tab)	Depakene	San-Av	100

*a. 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 Form (SF) 1 & 10.

The table shows that key medicines are available in 53.3% of the public health facilities, 100% of private pharmacies and 33.3% of central-district warehouses.

*Table 5. Availability of key medicines in public health facilities, private drug outlets and warehouse,.*

	<b>National (Median)</b>	<b>25<sup>th</sup> Percentile</b>	<b>75<sup>th</sup> Percentile</b>
Public health facilities	53.3	36.7	73.3
Private drug outlets	100.00	93.3	100.0
Warehouses supplying the public sector	33.3	30.0	36.7

*b. 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 8% as compared to 14.7% in the private sector. Lowest priced generic equivalents had a mean percent availability of 27.5% in the public sector and 19.7% in the private sector.

*Table 6. Mean availability of medicines (global list) on the day of data collection, public and private sectors.*

	<b>Public sector (n =28 outlets)</b>		<b>Private sector (n = 71 outlets)</b>	
	<b>All medicines (n = 44 medicines)</b>		<b>All medicines (n = 44 medicines)</b>	
	<b>Originator brand</b>	<b>Lowest price generic</b>	<b>Originator brand</b>	<b>Lowest price generic</b>
<b>Mean availability</b>	8%	27.5%	14.7%	19.7%

*c. Stock-out duration and adequate record keeping*

The average stock out duration is another indicator used to describe availability of medicines. The table below shows that the average stock out duration for public health pharmacies was 24.9 days while it was 43.8 days for central-district warehouses. This suggests that the public health pharmacies are securing their stocks from varied sources and are not

dependent on the central warehouses for their stocks. Adequate record keeping was noted in 66.7 % of the public health facility dispensaries and 46.7% of the warehouses supplying the public sector indicating the warehouse stock out duration may even be longer than 43.8 days

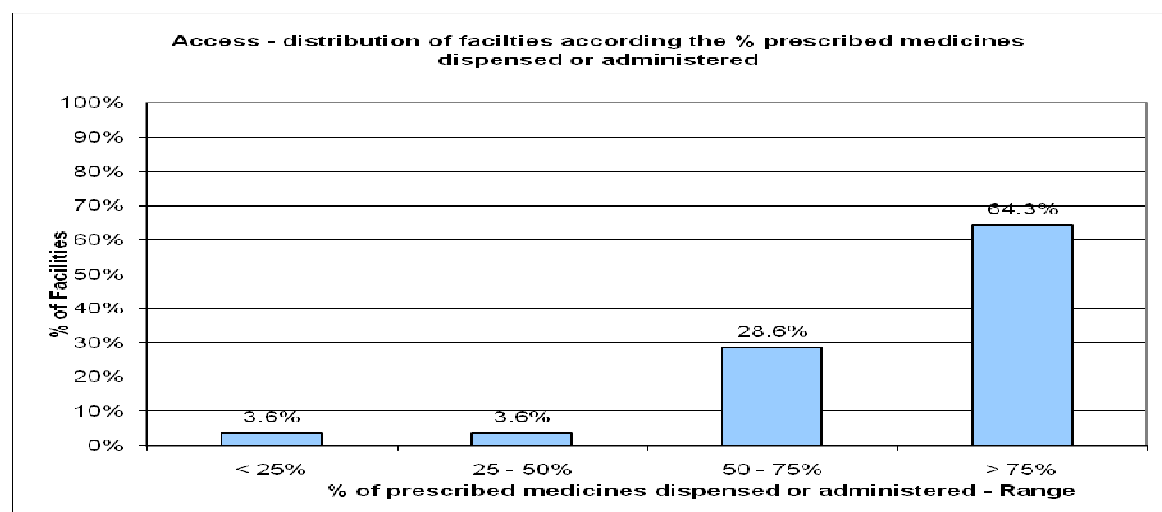
Table 7. Average stock-out duration (in days) and adequate record keeping

Indicator	National (Median)	25 <sup>th</sup> Percentile	75 <sup>th</sup> Percentile
	53.3	36.7	73.3
Average stockout duration (in days) in public health facility dispensaries	24.9	3.5	154
warehouses supplying the public sector	43.8	32.5	85.5
Adequate record keeping in public health facility dispensaries	66.7	53.2	86.7
warehouses supplying the public sector	46.7	43.4	56.7

*d. Proportion of prescribed medicines actually dispensed*

Another indicator for access is the % of prescribed medicines dispensed or administered to patients at public health facility dispensaries. The median for this indicator is 84.8 indicating a high percentage of prescribed medicines dispensed or administered to patients at public health facility dispensaries . Furthermore, the figure below shows that 64.3% of the facilities were able to dispense more than 75% of the prescribed medicines and 28.6% of the facilities were able to dispense 50-74% of the prescribed medicines.

Figure 1. Distribution of facilities according the percentage of prescribed medicines dispensed or administered.



#### 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 private drug outlets and the proportion of transport cost to the minimum daily salary. The data shows that sampled respondents had access to the public health facility dispensaries and private drug outlets and do not have to travel more than one hour to reach the said health facilities. The average transportation cost was computed at PhP 17.20 to reach the public health dispensaries and PhP 12.80 to reach the private drug outlets.

Table 8. Indicators for Geographic Access.

Geographical accessibility			
% patients taking more than one hour to travel to			
public health facility dispensaries	0.0	0.0	0.1
private drug outlets	0.0	0.0	0.0
Average transportation cost (in PhP) to the			
public health facility dispensaries	17.2	12.9	29.3
private drug outlets	12.8	9.3	17.8
Average Transport cost percentage to minimum daily salary to the			
public health facility dispensaries	0.1	0.0	0.1
private drug outlets	0.0	0.0	0.1

#### 4.1.3. Prices and affordability

##### a. Public Sector Procurement prices

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

Table 9. Public sector procurement.

Product type	Median MPR	25 <sup>th</sup> percentile	75 <sup>th</sup> percentile
Originator brand (n= 22 medicines)	<b>26.33</b>	<b>3.1</b>	<b>26.6</b>
Lowest price generic (n= 24 medicines)	<b>7.97</b>	<b>3.0</b>	<b>10.9</b>

Based on the median MPRs, the public sector is procuring generics at 7.97 times their international reference prices, and originator brands at 26.33 times their international reference prices (Table 5). The interquartile range shows substantial variation in median price ratios across individual

medicines. Further investigation is required to identify the determinants of these variations in purchasing efficiency.

*b. Public Sector Patient Prices*

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

*Table 10. Public sector patient prices.*

<b>Product type</b>	<b>Median MPR</b>
Originator brand (n= 9 medicines)	<b>30.23</b>
Lowest price generic (n= 21 medicines)	<b>9.78</b>

The results above indicate that in the public sector, lowest price generic medicines are generally sold at 9.78 times their international reference price. The originator brand are generally sold at 30.23 times their international reference price with substantial variation in MPRs across individual originator and generic medicines in the public sector.

*Table 11. Median MPRs for medicines found in both public procurement and public sector medicine outlets (final patient prices).*

<b>Product type</b>	<b>Median MPR Public Procurement</b>	<b>Median MPR Public Patient Prices</b>	<b>% difference patient prices to procurement</b>
Originator (n= 9 medicines)	<b>27.54</b>	<b>29.76</b>	<b>8%</b>
Lowest price generic (n = 21 medicines)	<b>7.90</b>	<b>9.78</b>	<b>23.8%</b>

In the above 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 23.8% higher than procurement prices for generic equivalents. On the other hand, patient prices for originator branded medicines are 8% higher in public sector medicine outlets compared to public procurement prices.

*c. Private sector patient prices*

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

*Table 12. Ratio of median unit price to MSH international reference price.*

<b>Product type</b>	<b>Median MPR</b>	<b>25<sup>th</sup> percentile</b>	<b>75<sup>th</sup> percentile</b>
Originator brand (n = 24 medicines)	<b>37.10</b>	<b>25.0</b>	<b>79.6</b>
Lowest price generic (n = 23 medicines)	<b>10.76</b>	<b>5.5</b>	<b>18.5</b>

The results above show that in the private sector: Originator brand medicines are generally sold at 37.10 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 10.76 times their international reference price. There is moderate variation in MPRs across individual generic medicines in the private sector.

*d. Comparison of patient prices in the public and private sectors*

*Table 13. Median MPRs for medicines found in both public and private sectors..*

<b>Product type</b>	<b>Median MPR Public sector patient prices</b>	<b>Median MPR Private sector patient prices</b>	<b>% difference private to public</b>
Originator brand (n= 9 medicines)	<b>30.23</b>	<b>36.53</b>	<b>20.8%</b>
Lowest price generic (n = 21 medicines)	<b>9.78</b>	<b>10.76</b>	<b>10.0%</b>

In the above table, 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 show that final patient prices in the private sector are 10% lower than in the public sector for generic equivalents and 20.8% lower in the public sector for branded medicines

The table below 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. However in 2009, it is still purchasing medicines at prices higher than 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 14. Trends in Median Medicine Price Ratios (MPR) 2002, 2005, 2009..

Median Medicine Price Ratios (MPR)				
Year Conducted	Innovator Brand		Generic Equivalent	
	Private	Public	Private	Public
2002*	<b>15.95</b>	<b>18.24</b>	<b>8.36-17.76</b>	
2005**	<b>17.28</b>	<b>15.31</b>	<b>5.64</b>	<b>6.40</b>
2005 Public Procurement**		<b>14.19</b>		<b>5.14</b>
2008/09	<b>37.10</b>	<b>30.23</b>	<b>10.76</b>	<b>9.78</b>
2008/09 Public Procurement		<b>26.33</b>		<b>7.97</b>

\* Health Action Information Network (HAIN), 2002

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

#### e. Affordability of standard treatment regimens

The affordability of treatment for 12 common conditions was estimated as the number of days' wages of the lowest-paid unskilled government worker 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 15. Number of days' wages of the lowest paid government worker needed to purchase standard treatments.

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
Asthma	Salbutamol 100 mcg/dose inhaler	1 inhaler	0.8	0.9	1.3
Diabetes	Glibenclamide 5 mg cap/tab	1 cap/tab x 2 x 30 days = 60	0.7	0.6	2.0

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	Atenolol 50 mg cap/tab	1 cap/tab x 30 days = 30	0.8	0.8	3.0
Hypertension	Captopril 25 mg cap/tab	1 cap/tab x 2 x 30 days = 60	1.1	0.9	6.4
Hypercholesterolaemia	Simvastatin 20 mg cap/tab	1 cap/tab x 30 days = 30	1.4	1.9	3.8
Adult respiratory infection	Ciprofloxacin 500 mg cap/tab	1 cap/tab x 2 for 7 days = 14	0.4	0.5	3.4
Paediatric respiratory infection	Co-trimoxazole 8+40 mg/ml suspension	5ml twice a day for 7 days = 70 ml	10.5	8.1	32.7
Adult respiratory infection	Amoxicillin 500mg cap/tab	1 cap/tab x 3 for 7 days = 21	0.3	0.3	0.7
Adult respiratory infection	Ceftriaxone 1 g/vial injection	1 vial	0.8	0.3	2.5
Arthritis	Diclofenac 50mg cap/tab	1 cap/tab x 2 x 30 days = 60	0.8	0.8	4.2
Pain/ inflammation	Paracetamol 24mg/ml suspension	child 1 year: 120mg (=5ml) x 3 for 3 days = 45ml	4.9	4.2	-
Ulcer	Omeprazole 20mg cap/tab	1 cap/tab x 30 days = 30	1.9	2.1	13.1

The affordability of lowest price generics in the public sector was poor for most conditions, with standard treatment costing a more than three fourths of a days' wage. Treatments costing over a day's wage of the lowest paid government worker include Hypercholesterolaemia [Simvastatin] (1.4 days), Hypertension [Captopril] (1.1 days), and Ulcer [Omeprazole] (1.9 days). Meanwhile, treatments for Arthritis [Diclofenac], Hypertension [Atenolol], and Adult respiratory infection [Ceftriaxone] cost almost a day's wage. The most affordable standard treatments were those for treating chronic/acute conditions like Adult respiratory infection (0.3 day).

When originator brand medicines are prescribed and dispensed in the private sector, several treatments cost well over one days' wage. For example, treating ulcer with Omeprazole costs 13.1 days' of wages, while treating Hypertension with Captopril costs 6.4 days' worth of wages.

It should be noted that treatment costs refer to medicines only and do not include the additional costs of consultation and diagnostic tests. Further, many people in Philippines earn less than the lowest government wage; as such even treatments which appear affordable are too costly for the poorest segments of the population. Finally, even where individual treatments appear affordable, individuals or families who need multiple medications may quickly face unmanageable drug costs.

#### 4.2. Key findings on criteria related to the quality of medicines

The quality of medicines indicators include the presence of expired medicines in the facilities and storage conditions of medicines in the facilities at the time of the survey. The table below shows the findings on the said indicators.

Table 16. General indicators for quality of medicines.

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	80.0	70.0	90.0
dispensing rooms of public health facility dispensaries	90.0	80.0	90.0
storerooms of private drug outlets	85.0	80.0	90.0
dispensing rooms of private drug outlets	80.0	80.0	90.0
storerooms of warehouses supplying the public sector	80.0	70.0	80.0

There were no expired medicines found in the public health facility dispensaries, private drug outlets and warehouses supplying the public sector, respectively. The results for the adequacy of infrastructure for conservation conditions of medicines was found to be good with a median of at least 80 in the storerooms and dispensing rooms in public and private sector facilities.

The best result for the adequacy of infrastructure for conservation conditions of medicines was found in dispensing rooms of public health facility dispensaries, rating 90%. All other types of storage

facilities (storerooms of public health facility dispensaries, private drug outlets and warehouses and the dispensing room of private drug outlets) rated at least 80%. This indicates above average adequacy of storage considers across types of facilities.

### Rational use

The indicators for rational use of medicines include 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 figure and table below shows the results of the study with respect to these indicators.

Figure 2. Rational Use of Medicines.

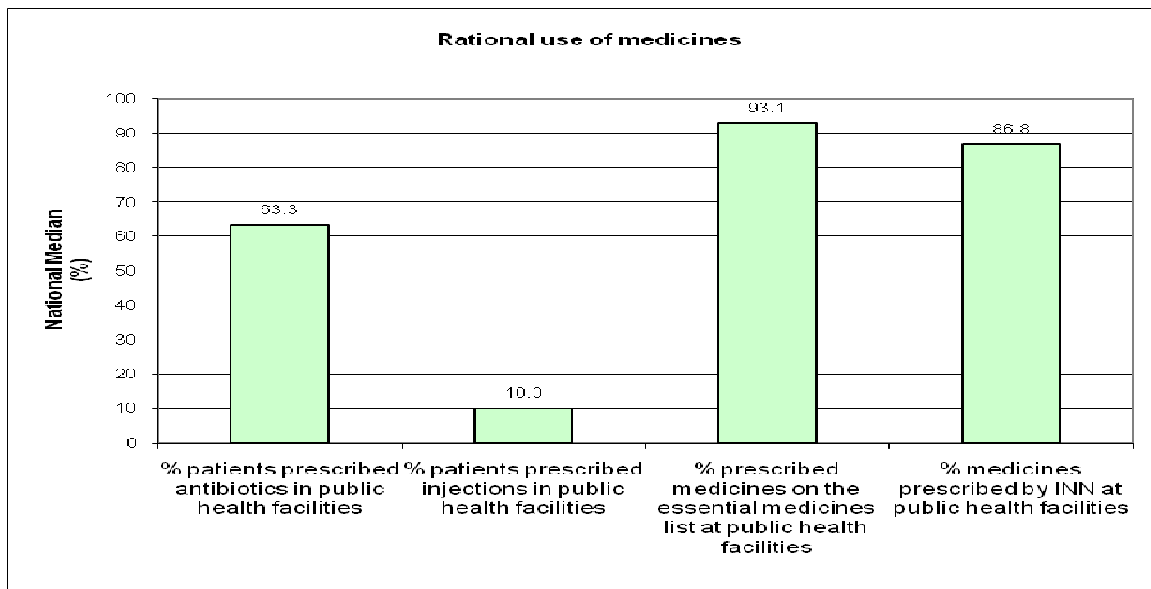


Table 17. General indicators for quality.

Indicator	National (Median)	25th Percentile	75th Percentile
<b>Prescribing indicators</b>			
Average number of medicines per prescription at public health facility dispensaries and public health facilities(SF6)	2.0	1.0	2.0
Average number of medicines per prescription at public health facility dispensaries and public health facilities(SF7)	2.0	1.7	2.4
% patients prescribed antibiotics in public health facilities	63.3	53.7	73.3

Indicator	National (Median)	25th Percentile	75th Percentile
% patients prescribed injections in public health facilities	10.0	0.0	23.3
% prescribed medicines on the essential medicines list at public health facilities	93.1	86.7	97.9
% medicines prescribed by generic name (INN) at public health facilities	86.8	83.7	97.9
<b>Patient care indicators</b>			
% medicines adequately labeled at public health facility dispensaries	97.1	60.4	100.0
private dispensaries	63.9	33.7	100.0
% patients know how to take medicines at public health facility dispensaries	63.3	48.4	82.5
private dispensaries	80.0	60	86.7
Prescription medicines bought without prescription	20.8	4.2	33.3
<b>Facility specific factors for the rational use of medicines</b>			
Availability of standard treatment guidelines at public health facilities	42.9		
Availability of essential medicines list at public health facilities	100.0		

The results of the survey indicate the following:

The EML and the Standard Treatment Guidelines were found in 100% and 42% of the public healthcare facilities respectively, indicating that EML was consistently present in the said facilities while Standard Treatment Guidelines were available in only 42% of the facilities surveyed.

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 63.3 % , which may be considered high and may indicate an irrational prescribing patterns for this group of medicines. The percentage of patients with injections prescribed in the public facilities was 10% which may be considered adequate, indicating adequate prescribing patterns for this group of medicines.

Another variable studied was the adherence of prescribers to recommended treatment regimens. Findings as indicated in table 17 below show that prescribers are likely to not adhere to treatment guidelines since 60% of non bacterial cases of diarrhoea were prescribed antibiotics and 80% of non pneumonia ARI were prescribed also antibiotics.

A median percentage of 93.1% was found for medicines prescribed according to the national Essential Medicines List, indicating good adherence of physicians to this list. 86.8% 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 97.1 % and 63.9 % at public health facility dispensaries and at private pharmacies respectively. However, it was found that percentage of people that know how to take their medicines was higher private pharmacies, 80%, compare to public health facility dispensaries, 63.3%.

*Table 18. Adherence of prescribers to recommended treatment guidelines.*

<b>Indicator</b>	<b>Information source</b>	<b>Median</b>	<b>National Average</b>	<b>Standard Deviation</b>
Non-bacterial diarrhoea in children under age 5	Total number of cases,	10.0		
	% ORS	60.0	60	26.7
	% Antibiotics	60.0	56.4	30.4
	% Antidiarrhoeal and/or Antispasmodic	30.0	34.8	24.5
Mild/moderate pneumonia in children under age 5	Total number of cases	10.0		
	% receiving any one first line antibiotic	70.0	61.2	36.4
	% receiving more than one antibiotic	10.0	26.1	30.0
Non-pneumonia ARI in patients of any age	Total number of cases	10.0		
	% Antibiotics	80.0	81.8	19.4

## 5. CONCLUSIONS

Overall indicators of access show that key essential medicines selected for the country are partially available in public health facilities (53.3%), warehouses that supply public health system (33.3%) and greatly available in private pharmacies (100%). The length of stock out durations at the public procurement and public sector 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 84.8% 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. The data also indicates 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 8% and 27%, while in private sector it was 14.7% and 19.7% respectively. This indicates that generic medicines have become more available in the public and private sector outlets but more in the public sector.

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. However in 2009, it is still purchasing medicines at prices higher than 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.

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. It is however important to consider that this study was conducted before the implementation of the Government Mediated Access Price (GMAP) and the Maximum Drug Retail Price (MDRP) which later on effectively lowered the prices of 6 out of the 44 sampled medicines<sup>2</sup>.

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 Hypertension [Atenolol](0.8 days), Adult Respiratory Infection [Amoxicillin](0.3 days). The affordability of lowest price generics in the public sector is still poor with most conditions costing more than three fourths of a days' wage. Treatments costing over a day's wage of the lowest paid government worker include Hypercholesterolaemia [Simvastatin] (1.4 days), Hypertension [Captopril] (1.1 days). Meanwhile, treatments for Ulcer [Omeprazole], and pediatric respiratory infection [Ceftriaxone] cost more than a day's wage

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<sup>2</sup> Amlodipine, atorvastatine, glicazide, ciprofloxacin, metronidazole, co-amoxiclav

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 the 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 Millennium Development Goals but also within the Universal Health Care strategy.

The Philippines has committed to achieving the United Nations' Millennium Development Goals (MDGs) when it signed the Millennium Declaration in 2000. The MDGs sets benchmarks for human development by 2015. The latest report from NEDA with respect to the 15 MDG targets seem optimistic: the country will likely achieve targets on reducing extreme poverty, child mortality and incidence of malaria, tuberculosis and HIV/AIDS, as well as improving dietary requirement, gender equality in education, and access to safe drinking water. It also showed medium to high probability of meeting targets for maternal health, access to reproductive health services, nutrition, primary education, and reversing losses of environmental resources.<sup>i</sup> There has been questions though in the 'claimed accomplishments' vis-à-vis the actual conditions of the country and the methods of determining the data for the identified indicators.

MDG 8 comes under the banner "Develop a Global Partnership for Development" and for this goal the particular target (target 17) in relation to essential medicines was formulated as follows: "In cooperation with pharmaceutical companies, provide access to affordable essential drugs to developing countries". The specific indicator for this target is defined as follows: "Proportion of population with access to affordable essential drugs on a sustainable basis".<sup>ii</sup> The 2003 Philippine MDG report indicated that the "proportion of population with access to affordable medicines on a sustainable level" was 50-79 % based on the 1999 data<sup>iii</sup>. There have been questions on the validity of this data because it was extrapolated from the data of the 1999 Family Health Income and Expenditures Survey and the items in the survey were not specifically developed to determine the respondents' access to affordable essential medicines. Further, an independent study in 2005 showed that the level of access to affordable essential medicines were much lower than what the 2003 Philippine MDG report indicated. A separate report from the 2004 World Medicines Situation, a publication of the World Health Organization indicated that only 66 percent of the country's population had access to essential medicines. Access was measured based on the estimated percentage of the population with access to at least 20 essential medicines.

The 2007 MDG National Mid-term Progress Report<sup>iv</sup> did not provide specific data on "proportion of population with access to affordable medicines on a sustainable level" but provided updates on the targets for reducing prices of the essential medicines. The Medium Term Development Plan (MTDP) targeted to reduce the prices of essential medicines to half of their 2001 prices. According to the report, DOH data indicated that an estimated average of 60.9 percent price reduction in 2004 was already achieved—a figure above the 50 percent target by the year 2010. In 2006,

the same report indicated that the prices of essential medicines decreased by an average of 41 percent in 2005 and 2006.

A survey conducted in 2005 by Institute of Philippine Culture, Ateneo De Manila University, Health Action International (HAI) and World Health Organization (WHO) showed that for the public sector facilities, the median availability of the medicines surveyed was 7.7% for innovator brand medicines and 15.4% for lowest priced generics. In the private sector, the median availability of the surveyed medicines was 33.3% for branded medicines and 26.5% for lowest price generics indicating a higher availability for the branded medicines. Even the highest figure of 33.3% median availability in the private sector is still way below the 2003 Philippine MDG report figure of 50-70%. The current study showed that the mean percent availability is higher for generic medicines (27.5% for the public sector and 19.7% for the private sector) compared to the branded medicines (8.0% for the public sector and 14.7% for the private sector). The highest mean percent availability figure in the study was 37.10% for branded medicines in the private sector. Using the same methodology for measuring availability of essential medicines in 2005 and 2009, the current study showed that generic medicines availability in the public sector increased from 15.5% (2005) to 27.5% (2009) while branded medicines availability also increased from 33.3% (2005) to 37.10% (2009). 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."

The results of this survey show that, on the sample considered, availability of basic medicines is still an issue. Prices look also very high if compared to international reference price as well as to the poorest ability to pay for it. In a context where outpatient medicines are not covered by the national health insurance and where the enrollement of the poorest people is still an issue, price determinant can be a significant barrier to access. The results from the household survey performed concomitantly tend to come to the same conclusion.

The Philippines are now looking towards Universal Health Care. Strategies to achieve this ambition have to take careful consideration of medicines availability and affordability (price and health insurance coverage) in the country. The definition of adequate policies and mechanisms to tackle these issues will be key components of the realization of Universal Health Care in the Philippines

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<sup>i</sup> National Economic Development Authority. Second Philippines Progress Report on the Millennium Development Goals, 2005

<sup>ii</sup> UNDP, En Route to Equality: A National Review of National MDG Reports. Bureau of Development Policy. UNDP. 2005

<sup>iii</sup> Ibid. 13.

<sup>iv</sup> National Economic Development Authority. Philippines Mid-Term Progress Report on the Millennium Development Goals, 2007