SURVEY ON AVAILABILITY OF ESSENTIAL MATERNAL AND CHILD HEALTH CARE SUPPLIES IN PUBLIC HEALTH FACILITIES IN THE PHILIPPINES

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ACRONYMS

BNB - Botica ng Barangay
CHO - City Health Officers
ComPack - Complete Treatment Pack
DOH - Department of Health
EPI - Expanded Program on Immunization
HAI - Health Action for Information
HC - Health Centers
IMCI - Integrated Management of Childhood Illness
MAP - Medicines Access Programs
MCH – Maternal and Child Health
MHO - Municipal Health Officers
MS - Micronutrient Supplementation
NCR – National Capital Region
PD - Pharmaceutical Division
PHO - Provincial Health Officers
PHTL - Public Health Team Leaders
PNF - Philippine National Formulary
PPS - Probabilities Proportionate to Size
PSU - Primary Sampling Unit
RHU - Rural Health Units
SSU - Secondary Sampling Unit
TB - Tuberculosis
WHO - World Health Organization

INTRODUCTION

According to WHO, worldwide, more than 8 million children under 5 years die annually while an estimated 1,000 women die from complications of pregnancy and childbirth daily. The availability and access to essential medicines for women and children could have prevented many of these deaths. However, availability of the essential medicines for children has been found to be poor in developing countries.

Previous drug availability surveys in primary care public health facilities in the Philippines covered a few essential medicines for maternal and child care. These surveys point out that for these drugs, availability was also low in these facilities. For instance, the 2012 Drug Availability Survey found that oxytocin and oral rehydration solution were available in only 38.5% and 51.5%, respectively. These drugs were available in 46.8% and 52.9%, respectively in the last survey for 2013.

In order to achieve greater reductions in maternal and children deaths, the availability of essential supplies for maternal and child care must be improved. A survey that focuses on these supplies is needed to determine whether there are problems in the availability of these in rural health units and health centers in the Philippines.

SURVEY OBJECTIVES

The general objective of this survey was to determine the extent of availability of supplies for maternal and child health care in public health facilities in the Philippines in 2016.

Specifically, the study aimed to determine the percentage availability of the following supplies for maternal and child health care in rural health units and health centers in the Philippines in 2016:

1. Maternal care including family planning commodities
2. Micronutrient supplementation (MS)
3. Integrated management of childhood illnesses (IMCI)
4. Expanded program for immunization

METHODOLOGY

Study Population

Public health facilities in this survey referred to the rural health units and city health centers which were recipients of supplies for maternal and child care from trhe Department of Health. The percentage of available supplies for maternal and child health care was collected from each of these facilities in the sample by using a checklist.

Sampling Design: Stratified Two-Stage Cluster Sampling Design

A stratified two-stage cluster sampling design was employed in this survey. The income level classification of the province was used as the stratification variable. The provinces were the

primary sampling unit (PSU) while the health care facilities were the secondary sampling units (SSU). For purposes of this survey, health facilities in a city were considered part of the province where the city was found. For instance, public health facilities in Cebu City were included in Cebu province in the selection of PSUs and SSUs. Because of its population size, the National Capital Region was treated as a separate stratum.

Stratification of provinces was based on average annual income level of the province. Provinces were grouped according to the prescribed classification by the Department of Finance (Department Order D.O. No.23-08: Prescribing the New Income Brackets for the Re-classification of Provinces, Cities and Municipalities - Effective July 29, 2008).

Class	Average Annual Income
1st	P 450M or more
2nd	P 360M or more but less than P 450M
3rd	P 270M or more but less than P 360M
4th	P 180M or more but less than P 270M
5th	P 90M or more but less than P 180M
6th	Below P90M

Since there were few provinces that belonged to the 3rd to 6th Classes, these categories were lumped together as one stratum. Furthermore, NCR was considered as separate stratum in the sampling design. Thus the strata were as follows: 1) Income Level 1 provinces; 2) Income Level 2 Provinces; 3) Income Level 3-6 Provinces; and 4) NCR.

Selection of Primary Sampling Units (Provinces)

There was a total of 19 provinces in the sample. Except for NCR, the number of provinces allocated per stratum was proportional to the total number of primary level public health care facilities in the stratum. Primary level care facilities included rural health units, health centers and Level 1 hospitals.

Primary sampling units were chosen using the tabulated data for estimated number of primary level health facilities. Selection of provinces within stratum was according to probabilities proportionate to size (PPS), where size was the estimated number of primary level health facilities in the province. A systematic procedure was employed in selecting provinces using PPS.

Selection of Secondary Sampling Units in Provinces

Sampling of primary care public health facilities was done within the randomly selected provinces. A sample of 15 primary level care public health facilities was obtained. From this list, the rural health units and health centers were identified for inclusion in the study.

Sampling Design for NCR Facilities

National Capital Region (NCR) was considered separate stratum for this survey. A list of all health centers in NCR was obtained. From this list, 30 health centers were selected by simple random sampling for inclusion in the survey. Adjustments for possible non-response was done.

Data Collection

Survey Team

The team was composed of the Principal Investigator, Co-investigator and 8 research assistants. This team had undergone training on the survey data collection procedures before being deployed in the field. A pretest of the data collection tools was carried out in Mandaluyong health centers.

Visits to the different provinces randomly selected in the study were coordinated with the Pharmaceutical Division of the Department of Health. Courtesy calls to local government officials (governors and mayors), directors of the DOH Regional Centers for Health Development, provincial health officers (PHOs), city/municipal health officers (CHOs/MHOs), public health team leaders (PHTLs) and Botica ng Barangay (BNB) coordinators were done by the survey team before proceeding with the data collection.

Data Collected

Survey questions such as name of the health facility, location, and the designated pharmacist or person-in-charge of dispensing medicines were indicated in the data collection form. Along with this is a printed copy of a list of supplies for maternal and child health, including family planning commodities and EPI prepared by Pharmaceutical Division. The forms are shown in the Appendix.

The data collection process was carried out as follows: The person-in-charge of keeping and dispensing these supplies was asked to bring out samples of these supplies. Then, the availability and expiry of the drugs presented was recorded by the data collector.

Data Processing

The data collection forms were checked for completeness and errors upon completion. All forms were encoded and entered into a database. A special program that calculated percent drug availability for each health facility was written after all the forms have been encoded.

Data Analysis

Tabulation of the availability of each drug item in the health facilities was done. The percentage and confidence intervals of availability were obtained. To account for the different sampling probabilities in selection of health facilities, weighted analysis was performed for the calculation of percent availability and its confidence interval. Statistical analyses were generated using the software STATA Ver 10.1.

RESULTS

Coverage of Survey

There were 201 rural health units and 54 health centers in the sample. The number of health facilities for each province in shown in Table 1.

Table 1. Actual sample sizes of rural health units and health centers by province

Stratum	Province	Primary level care facilities
Income Level 1	Albay	12
	Bohol	12
	Bulacan	15
	Cavite	12
	Cebu	9
	Iloilo	10
	Isabela	12
	La Union	14
	Misamis Oriental	14
	Pampanga	10
	Quezon	11
	Sultan Kudarat	10
	Zamboanga del Norte	13
Income Level 2	Benguet	14
	Sorsogon	12
	Zamboanga Sibugay	13
Income Level 3 to 6	Abra	15
	Southern Leyte	14
National Capital Region	National Capital Region	33
	Total	255

Availability of Supplies for Maternal Care Including Family Planning

The availability of supplies for maternal care and family commodities is shown in Table 2. Maternal care supplies were available in less than 60% of the RHUs and HCs. There were 58.9% of these facilities that had Oxytocin, used during delivery to induce contraction of the uterus to start or increase speed of labor and to stop bleeding after delivery. A similar percentage (58.1%) had Vitamin K injections. Magnesium sulfate injection was available in 42.7%. Most of those facilities where these supplies were not available were not birthing facilities. Erythromycin eye ointment and dexamethasone were present in 37.2% and 33.9% of the facilities, respectively, while only 8.5% had chlorhexidine.

Family planning commodities were more readily available in the RHUs and HCs. More than 90% of these facilities had both low dose COC and progestin only pills and DMPA. Three-

fourths had intreuterine devices. Cycle beads for standard days method were also present in 65.3% of the facilties.

Table 2. Percentage of rural health units and health centers wherein specific item of maternal care supplies was available (n=255)

Key item	Availability	
	Weighted percentage	Std error
Oxytocin	58.9	4.5
Magnesium sulphate injection	42.7	4.4
Chlorhexidine	8.5	3.1
Povidone iodine	84.0	2.7
Erythromycin eye ointment	37.2	4.9
Dexamethasone	33.9	3.4
Vitamin K injection	58.1	4.8
Pills (Low dose COC)	95.7	1.5
Pills (Progestin only)	92.7	1.7
Injectables (DMPA)	96.7	1.1
IUD TCU380A	75.2	3.1
SDM cycle beads	65.3	4.3

Table 3 shows the availability of supplies for micronutrient supplementation (MS) and integrated management of childhood illnesses (IMCI). Vitamin A 200,000 IU soft gel capsule was mostly available (85.1%) in the RHUs and HCs. However, Vitamin A 100,000 soft gel capsule was only present in less than half of these facilities. When asked for the reason for non- availability of Vitamin A 100,000 soft gel, a common answer was the preference for the Vitamin A 200 IU soft gel. Ferrous sulfate plus folic acid was present in 56.9% while ferrous salt solution drops was available in a smaller percentage (42.0%). Zinc syrup was found in around half (52.2%) of these facilities. Oral rehydration salt was widely available with 84.3%. However, supplies of micronutrient powder and iodine soft gel were very low, wth 6.3% and 9.4%, respectively.

Table 3. Percentage of rural health units and health centers wherein specific item of supplies for micronutrient Supplementation (MS) and integrated management of childhood Illnesses was available (n=255)

Key item	Availability	
	Weighted percentage	Std error
Vitamin A 100, 000 IU soft gel capsule	41.6	4.2
Vitamin A 200, 000 IU soft gel capsule	85.1	2.1
Ferrous Salt Solution Drops	42.0	4.7
Ferrous Sulfate + Folic Acid	56.9	6.4
Micronutrient Powder	6.3	1.7
Iodine soft gel	9.4	3.3
Zinc syrup	52.2	4.2

Oral Rehydration Salts	84.3	3.5

Large percentages of rural health units and health centers had sufficient stocks of vaccinations for BCG, hepatitis B, DPT-HepB-HiB (pentavalent), measles-mumps-rubella (MMR), measles and tetanus toxoid. These were available in more than 90% of these facilities. Bivalent oral polio vaccine was also in stock in 8 out of 10 facilities. A lower percentage had pneumococcal conjugate vaccine (PCV13) (65.6%) and measles rubella (51.8%).

These vaccines were less commonly found in the RHUs and HCs: pneumococcal polysaccharide vaccine (PCV23), inactivated polio vaccine (IPV) and tetanus diphtheria (Td). Less than half of these facilities had those vaccines in stock.

Table 4. Percentage of rural health units and health centers wherein specific immunization was available (n=255)

Key item	Availability	
	Weighted percentage	Std error
BCG	96.4	1.2
Hepatitis B	91.7	1.8
DPT-HepB-HiB (Pentavalent)	94.9	1.8
Bivalent Oral Polio Vaccine	80.2	3.5
Pneumococcal Conjugate Vaccine (PCV13)	65.6	5.1
Inactivated Polio Vaccine (IPV)	42.3	9.3
Measles Mumps and Rubella (MMR)	91.3	2.6
Measles	91.7	3.1
Tetanus Toxoid (TT)	95.3	2.4
Measles Rubella (MR)	51.8	3.4
Tetanus diphtheria (Td)	31.2	5.2
Pneumococcal Polysaccharide Vaccine (PPV23)	48.2	5.4

APPENDIX

Availability of Supplies for Maternal Care, Micronutrient Supplementation (MS) and Integrated Management of Childhood Illness (IMCI)

(SURVEY FORM 5 - For RHUs and HCs)

Availability of Supplies for Maternal Care

No	Drug	Available?	Expiry date (MM/YYYY) NA – if drug not available)	If not available, reasons for unavailability 1 –drug no longer requested 2 – limited stocks of drug delivered 3 – out of stock due to fast-moving 4 – transferred to other units 5 – returned to PHO, CHD or DOH 6 – cannot be found 7 – others, specify NA –if drug is available	Remarks
1	Oxytocin for Basic Emergency Maternal Obstetrics and Neo-natal Care (BEMONC)	YES NO	_____ NA	1 2 3 4 5 6 7 DK NA _____	
2	Magnesium sulphate injection	YES NO	_____ NA	1 2 3 4 5 6 7 DK NA _____	
3	Chlorhexidine	YES NO	_____ NA	1 2 3 4 5 6 7 DK NA _____	
4	Povidone iodine	YES NO	_____ NA	1 2 3 4 5 6 7 DK NA _____	
5	Erythromycin eye ointment (newborn care package)	YES NO	_____ NA	1 2 3 4 5 6 7 DK NA _____	
6	Dexamethasone (for prematurity)	YES NO	_____ NA	1 2 3 4 5 6 7 DK NA _____	
7	Vitamin K injection (newborn care package)	YES NO	_____ NA	1 2 3 4 5 6 7 DK NA _____	

	Other medicines	YES NO	_____ NA	1 2 3 4 5 6 7 DK NA _____	
8	Pills (Low dose COC)	YES NO	_____ NA	1 2 3 4 5 6 7 DK NA _____	
9	Pills (Progestin only)	YES NO	_____ NA	1 2 3 4 5 6 7 DK NA _____	
10	Injectables (DMPA)	YES NO	_____ NA	1 2 3 4 5 6 7 DK NA _____	
11	IUD TCU380A	YES NO	_____ NA	1 2 3 4 5 6 7 DK NA _____	
12	SDM cycle beads	YES NO	NA	1 2 3 4 5 6 7 DK NA _____	

Availability of Drugs for Micronutrient Supplementation (MS) and Integrated Management of Childhood Illness (IMCI)

No	Drug	Available?	Expiry date (MM/YYYY) NA – if drug not available)	If not available, are the medicines available in different formulations? If yes, specify the formulation.	If not available, reasons for unavailability 1 –drug no longer requested 2 – limited stocks of drug delivered 3 – out of stock due to fast-moving 4 – transferred to other units 5 – returned to PHO, CHD or DOH 6 – cannot be found 7 – others, specify NA –if drug is available	Remarks
1	Vitamin A 100, 000 IU soft gel capsule	Yes No	_____ NA		1 2 3 4 5 6 7 DK NA _____	
2	Vitamin A 200, 000 IU soft gel capsule	Yes No	_____ NA		1 2 3 4 5 6 7 DK NA _____	
3	Ferrous Salt Solution Drops (equivalent to 15 mg elemental iron/0.6ml drops, 15 ml)	Yes No	_____ NA		1 2 3 4 5 6 7 DK NA _____	
4	Ferrous Sulfate + Folic Acid (60 mg elemental iron + 400 mcg folic acid per tablet/ capsule/film coated tablet)	Yes No	_____ NA		1 2 3 4 5 6 7 DK NA _____	
5	Micronutrient Powder (15 vitamins & minerals - Vit. A (400 µg RE), C (30 mg), D (5.0 µg), E (5 mg a-TE), B1 (0.5 mg), B2 (0.5mg), B6 (0.5mg), B12 (0.9µg), folic acid (150 µg), niacin (6 mg), iron (10 mg), zinc (4.1 mg), copper	Yes No	_____ NA		1 2 3 4 5 6 7 DK NA _____	

	(0.56 mg), iodine (90 µg), selenium (17.0 µg))					
6	Iodine (500 mg (equiv. to 200 mg elemental iodine) soft gel capsule)	Yes No	_____ NA		1 2 3 4 5 6 7 DK NA _____	
7	Zinc syrup (Oral: 55mg/ml (equiv. to 20 mg elemental zinc), 60 ml syrup, (as sulfate monohydrate))	Yes No	_____ NA		1 2 3 4 5 6 7 DK NA _____	
8	Oral Rehydration Salts (ORS 75-Replacement) Sodium Chloride – 2.6 g, Trisodium Citrate Dehydrate – 2.9 g, Potassium Chloride – 1.5 g, Glucose Anhydrous – 13.5 g, Total weight: - 20.5 g (Sodium 75 mmol/L, chloride 65 mmol/L,	Yes No	_____ NA		1 2 3 4 5 6 7 DK NA _____	

Availability of Vaccines for EPI

No	Vaccine	Available?	Expiry date (MM/YYYY) NA – if drug not available)	If not available, are the medicines available in different formulations? If yes, specify the formulation.	If not available, reasons for unavailability 1 –drug no longer requested 2 – limited stocks of drug delivered 3 – out of stock due to fast-moving 4 – transferred to other units 5 – returned to PHO, CHD or DOH 6 – cannot be found 7 – others, specify NA –if drug is available	Remarks
1	BCG	Yes No	_____ NA			
2	Hepatitis B	Yes No	_____ NA			
3	DPT-HepB-HiB (Pentavalent)	Yes No	_____ NA			
4	Bivalent Oral Polio Vaccine	Yes No	_____ NA			
5	Pneumococcal Conjugate Vaccine (PCV13)	Yes No	_____ NA			
6	Inactivated Polio Vaccine (IPV)	Yes No	_____ NA			
7	Measles Mumps and Rubella (MMR)	Yes No	_____ NA			
8	Measles	Yes No	_____ NA			

9	Tetanus Toxoid (TT)	Yes No	_____ NA			
10	Measles Rubella (MR)	Yes No	_____ NA			
11	Tetanus diphtheria (Td)	Yes No	_____ NA			
12	Pneumococcal Polysaccharide Vaccine (PPV23)	Yes No	_____ NA			