

# **SM2015 – Belize**

## **Baseline Health Facility Survey**

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**Data Quality Report**

**April 2014**



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This Data Quality Report on the Salud Mesoamérica (SM2015)-Belize Facility Survey was produced in agreement with the Inter-American Development Bank (IDB). All analyses and report writing were performed by the Institute for Health Metrics and Evaluation (IHME) at the University of Washington. This report is meant as descriptive analysis to explore the most significant aspects of the information gathered for Salud Mesoamérica 2015. Its purpose is to ensure that collected data is of the highest possible quality.

### **About IHME**

IHME monitors global health conditions and health systems and evaluates interventions, initiatives, and reforms. Our vision is that better health information will lead to more knowledgeable decision-making and higher achievements in health. To that end, we strive to build the needed base of objective evidence about what does and does not improve health conditions and health systems performance. IHME provides high-quality and timely information on health, enabling policymakers, researchers, donors, practitioners, local decision-makers, and others to better allocate limited resources to achieve optimal results.

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### **Acknowledgements**

Thanks to the University of Belize for their participation in data collection for this project.

## Chapter 1 SURVEY METHODOLOGY

### 1.1 Overview

*Salud Mesoamérica 2015 (SM2015)* is a regional public-private partnership that brings together Mesoamerican countries, private foundations, and bilateral and multilateral donors with the purpose of reducing health inequalities affecting the poorest 20% of the population in the region. Funding focuses on supply and demand-side interventions, including changes in policy, evidence-based interventions, expanding proven and cost-effective healthcare packages, and delivering incentives for effective health services. One of its defining features is the application of a results-based financing model (RBF) that relies on serious performance measurement and enhanced transparency in reporting accountability and global impact assessment. The initiative focuses its resources on integrating key interventions aimed at reducing health inequalities resulting from the lack of access to reproductive, maternal, and neonatal health (including immunization and nutrition) for the poorest quintile of the population.

The objectives of the SM2015 evaluation are to assess whether countries are reaching the targeted indicators set by the initiative, and to evaluate the impact of specific interventions. In Belize, data collection is taking place in communities using the Lot Quality Assurance Sampling method (LQAS), and health facilities in intervention areas. The evaluation design includes a baseline data collection prior to the beginning of the intervention, as well as follow-up measures at 18 months (only in health facilities), and again at 36 and 54 months. This document describes the methods and results of the baseline measurement in health facilities.

### 1.2 Health facility survey

The health facility survey is one of two (the other being the LQAS survey) components of the overall data collection method employed in the initiative in Belize. Twinning of both surveys is a defining and innovative feature designed to most accurately capture prevalence estimates of select key indicators. In general terms, the objectives of the health facility survey are assessing facility conditions, evaluating service provision and utilization, and measuring quality of care. The medical record review (MRR) was implemented in order to capture historical data on the facilities' treatment practices by asking about various medical complications that mothers and infants experienced, along with how each case was treated. It also assessed the medical practices of the facilities before, during, and after uncomplicated births. Importantly, the facility survey captures changes made to interventions at the level of the health services access point, the health facility, and predicts changes in population health outcomes. The baseline health facility survey, recounted in this report, measured baseline prevalence estimates of various health indicators with the aim of monitoring future changes in those indicators.

### 1.3 Contents and methods for data collection

#### 1.3.1 Contents of the 2013 baseline Belize health facility survey

The baseline health facility survey includes three components: an interview questionnaire, an observation checklist, and a medical record review. The questionnaire captures information reported by the facility director, manager, or person in charge of the health facility; the checklist captures objective data observed by the surveyors at the time of the survey using an observation checklist, and in the case of some inputs, also reviewing administrative records to identify the presence of stock-outs in the three

months prior to the survey. The medical record review assesses the record-keeping of the facilities and captures the facilities' treatment practices. In each part of the survey, data are collected on general facility characteristics, infrastructure, and human resource composition; supply logistics; infection control; child health care; vaccine availability; family planning; and maternal antenatal, delivery, and postpartum care. For the topics of child and maternal care and family planning, information is collected on the types of services provided, components of the care offered, equipment available, and quality of record keeping.

### **1.3.2 Methods for data collection**

The facility survey is conducted using a computer-assisted personal interview (CAPI). The CAPI was programmed using DatStat Illume and installed into computer netbooks which are used by the surveyors during the entire interview. CAPI supports skip patterns, inter-question-answer consistency, and data-entry ranges. The aims of introducing CAPI to the field were to reduce survey time by prompting only relevant questions, to maintain a logical answering pattern across different questions, and to decrease data-entry errors.

### **1.4 Sampling**

For this evaluation, all Ministry of Health facilities serving the areas covered by the SM2015 Initiative were included. The sample included 39 facilities that offer ambulatory, basic, and complete essential obstetric and neonatal care (EONC), located in the districts of Cayo, Corozal and Orange Walk. This list was constructed according to a referral network outlined by the Ministry of Health.

For the Medical Record Review, a systematic sampling method was used to reach the required sample of complications and delivery records in each facility.

### **1.5 Survey implementation**

#### **1.5.1 Data collection instruments**

All health facility surveys were conducted using computer netbooks equipped with CAPI programs (See section 1.3.2)

#### **1.5.2 Training and supervision of data collectors**

Training sessions and health facility pilot surveys were conducted in Belize March 18-20, 2013, in the facilities of the University of Belize, the agency in charge of data collection. The training covered topics related to the LQAS and health facility survey, with a duration of two days. A total of 11 nurses and two physicians participated in the training. The training included an introduction to the initiative, proper survey conduct, in-depth review of the instrument, and hands-on training on the CAPI software. Training was followed by a one-day pilot of all components of the survey at an actual health facility (the Stan Creek Hospital).

#### **1.5.3 Data collection and management**

As described in section 1.3.2, data were collected using computer netbooks equipped with CAPI software. A lead surveyor monitored the administration of the facility survey and reported feedback.



Data collection using CAPI allowed data to be transferred instantaneously once a survey was completed via a secure link to the Institute for Health Metrics and Evaluation (IHME). IHME monitored collected data on a continuous basis and provided feedback. Suggestions, surveyor feedback, and any modifications were incorporated into the health facility instrument and readily transmitted to the field. The new instrument survey would be ready for use on the following day of data collection.

#### **1.5.4 Data analysis and report writing**

Ongoing data analysis was done at IHME and new data were continuously incorporated. Analysis was done using STATA version 13. Performance indicators were calculated at IHME following the indicator definition provided by IDB. A mid-survey report was submitted to the Inter-American Development Bank with estimates on key for-payment indicators.

## Chapter 2 FACILITY-LEVEL INFRASTRUCTURE, RESOURCES, MANAGEMENT, AND SUPPORT

### 2.1 General description of the facility

#### 2.1.1 Type of health facility

A total of 39 facilities were evaluated. There were 35 ambulatory health units, two basic health units, and two complete health units. The health unit EONC classification is displayed in Table 2.1.1.

**Table 2.1.1** Facilities by EONC level

Facility Type	Intervention
Ambulatory	35
Basic	2
Complete	2
Total	39

#### 2.1.2 Geographical representation

The facilities were located in 11 constituencies within three districts, detailed in Table 2.1.2.

**Table 2.1.2** Geographical representation

District	Constituency	No. of Facilities
Cayo District	Belmopan	3
	Cayo South	5
	Cayo West	5
Corozal District	Corozal Bay	2
	Corozal North	2
	Corozal South East	5
	Corozal South West	3
Orange Walk	Orange Walk Central	2
	Orange Walk East	2
	Orange Walk North	3
	Orange Walk South	7
Total	11	39

#### 2.1.3 Medical record extraction

The health facility survey included a review of 795 medical records. The number and type of medical records reviewed varied depending on the type of facility and the services it provided. Records of maternal and neonatal complications were checked at the basic and complete level. Records for diarrhea were reviewed only in ambulatory facilities (Table 2.1.3).

**Table 2.1.3** Number of medical records by facility classification (EONC level)

Medical records	Ambulatory	Basic	Complete	Total
Antenatal care	136	14	37	187
Delivery	31	28	41	100
Postpartum	24	19	24	67
Maternal complications	0	25	14	39
Neonatal complications	0	12	41	53
Diarrhea	5	0	0	5
Child services	71	4	16	91
Deworming	70	4	15	89
Family planning	72	4	15	91
Low birth weight	54	4	15	73
Total	463	114	218	795

#### 2.1.4 Referrals

In response to “Do you usually receive referred patients from another health facility?” 30.8% of facilities responded affirmatively. Specifically, 22.9% of ambulatory health units, and 100% of basic and complete facilities receive patients referred from other facilities.

#### 2.1.5 Governing authority

All health facilities were public institutions under the jurisdiction of the Ministry of Health.

### 2.2 Basic infrastructure

#### 2.2.1 Electricity and water

For ambulatory health units, 74.3% had functional electricity. Of those, 100% had a central electricity supply and 3.8% had an in-facility generator. All basic and complete health units had functional electricity, and 100% used a central electricity supply. In addition to a central supply of electricity, all basic and complete facilities also had an in-facility generator.

The majority of ambulatory facilities (84.8%) had water piped into the facility as a source of water. All basic and complete facilities had water piped in. Bottled water, tanker trucks, and rain water were important sources as well in basic and complete facilities.

Table 2.2.1 details the sources of electricity and water available at facilities. Interviewers asked facility representatives to indicate all sources of electricity and water for the health unit; therefore representatives could indicate more than one source serving the facility.

**Table 2.2.1** Electricity and water

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Functional electricity	35	74.3	7.4	2	100		2	100	
DK/DR	0			0			0		
Source of electricity									
Central supply	26	100		2	100		2	100	
Private supply	26	0		2	0		2	0	
In-facility generator	26	3.8	3.8	2	100		2	100	
Solar generator	26	0		2	0		2	0	
Other source	26	0		2	0		2	0	
DK/DR	0			0			0		
Source of water									
Piped into facility	33	84.8	6.2	2	100		2	100	
Public well	33	0		2	0		2	0	
Facility well	33	3	3.0	2	0		2	0	
Unprotected well	33	3	3.0	2	0		2	0	
Hand pump	33	3	3.0	2	0		2	0	
Bottled water	33	12.1	5.7	2	100		2	100	
Tanker truck	33	6.1	4.2	2	50	35.4	2	50	35.4
Rain water	33	6.1	4.2	2	50	35.4	2	0	
Other	33	18.2	6.7	2	0		2	50	35.4
DK/DR	2			0			0		

## 2.2.2 Internet access

Only 20.5% of facilities had access to the Internet. Specifically, 11.4% of ambulatory facilities and 100% of basic and complete facilities had Internet access.

## 2.3 Personnel

### 2.3.1 Personnel in ambulatory units

The following table (Table 2.3.1) details the personnel composition in ambulatory health facilities. The mean represents the average number of personnel reported per category. On average, there were 0.3 general physicians, 0.1 pediatricians, 0.5 nurses, 0.1 auxiliary nurses, 0.4 midwives, and 0.6 health promoters per ambulatory facility. A psychiatrist was the other type of personnel reported by a health facility.

**Table 2.3.1** Personnel composition in ambulatory facilities

Personnel type	Ambulatory		
	N	Mean	SE
General physician	35	0.3	0.5
Pediatrician	35	0.1	0.4
Nutritionist	35	0	
Pharmacist	35	0	0.2
Nurse	35	0.5	1.2
Auxiliary nurse	35	0.1	0.4
Midwife	35	0.4	1.1
Social worker	35	0	0.2
Laboratory technician	35	0	0.2
Health promoter	35	0.6	0.7
Pharmacy dispenser	35	0	0.2
Registered nurse/ registered midwife	35	0.1	0.3
Practical nurse/ practical midwife	35	0.6	0.6
Other	33	0.2	0.4
Internist	35	0	
Gynecologist	35	0.1	0.4
Surgeon	35	0	
Anesthesiologist	35	0	
Emergency medical technician	35	0	
Radiology technician	35	0	
Other specialties*	34	0	

\*Missing on other personnel types for one ambulatory facility

### 2.3.2 Personnel in basic and complete facilities

The personnel composition shows a large variation across basic and complete health units. The mean represents the average number of personnel reported per category by facility type (Table 2.3.2). On average there were 8.5 general physicians, 4 nurses, 7.5 midwives, and 2.5 radiology technicians per basic facility. In complete facilities there were an average of 10.5 general physicians, 16.5 nurses, 14 auxiliary nurses, and 11.5 midwives. Basic and complete facilities reported psychiatrists, pharmacy assistants, and infection control when asked about other types of personnel.

**Table 2.3.2** Personnel composition in basic and complete health units

Personnel Type	Basic			Complete		
	N	Mean	SE	N	Mean	SE
General physician	2	8.5	0.7	2	10.5	0.7
Pediatrician	2	1		2	2.5	0.7
Nutritionist	2	0.5	0.7	2	0.5	0.7
Pharmacist	2	1.5	2.1	2	2.5	3.5
Nurse	2	4	5.7	2	16.5	7.8
Auxiliary nurse	2	7	2.8	2	14	1.4
Midwife	2	7.5	0.7	2	11.5	2.1
Social worker	2	0.5	0.7	2	0.5	0.7
Laboratory technician	2	2.5	0.7	2	5.5	0.7
Health promoter	2	0.5	0.7	2	1	
Pharmacy dispenser	2	2	1.4	2	1.5	2.1
Registered nurse/ registered midwife	2	7		2	10	1.4
Practical nurse/ practical midwife	2	4	5.7	2	2.5	0.7
Other*	2	1		1	1	
Internist	2	1		2	2	1.4
Gynecologist	2	1		2	2.5	0.7
Surgeon	2	0.5	0.7	2	2	
Anesthesiologist	2	0		2	2	1.4
Emergency medical technician	2	0		2	0.5	0.7
Radiology technician	2	2.5	0.7	2	3.5	0.7
Other specialties*	2	0.5	0.7	1	1	

\*Missing data on other personnel types for one complete facility

## 2.4 Health information services

### 2.4.1 Patient satisfaction

Health facilities were asked if they carried out patient satisfaction surveys. If they responded “Yes,” surveyors checked for patient satisfaction questionnaires, accessibility of the questionnaires, availability of a pen or pencil, and availability of a mailbox for completed questionnaires (Table 2.4.1).

**Table 2.4.1** Health facilities with mechanism in place to carry out patient satisfaction surveys

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Carries out patient satisfaction survey	35	28.6	7.6	2	50	35.4	2	50	35.4
Patient satisfaction survey observed*	10	0		1	100		1	100	
Questionnaire is accessible**	0			1	0		1	0	
Pen/pencil available*	10	40	15.5	1	0		1	0	
Mailbox available*	10	80	12.6	1	0		1	0	
All requirements met	35	0		2	0		2	0	

\*Asked only if the facility carried out a patient satisfaction survey

\*\*Asked only if the patient satisfaction survey was observed

#### 2.4.2 Connection with Belize Health Information System (BHIS)

Six facilities had the infrastructure to support connection with the Belize Health Information System. Interviewers checked the six eligible facilities for availability of computers, printers, a network connection, and ability to generate a BHIS report dated within the last four weeks.

## Chapter 3 CHILD HEALTH

### 3.1 Child services offered – background

This chapter summarizes key indicators related to child health care. In 97.1% of ambulatory, 100% of basic, and 100% of complete health units, child health service provision was reported.

**Table 3.1.1** Child health care services provision

	Ambulatory			Basic			Complete		
	N	%	SE	N*	%	SE	N*	%	SE
Unit offers child services	35	97.1	2.8	2	100		2	100	
Unit vaccinates children under 5	35	88.6	5.4	2	100		2	100	
Child care room									
Private room with visual and auditory privacy	34	67.6	8.0	2	100		2	100	
Non-private room without auditory or visual privacy	34	2.9	2.9	2	0		2	0	
Visual privacy only	34	2.9	2.9	2	0		2	0	
No privacy	34	23.5	7.3	2	0		2	0	
Don't provide such services	34	2.9	2.9	2	0		2	0	

### 3.2 Child health care equipment

In the health facility survey observation module, interviewers checked availability and functional status of inputs needed for child care among children under 5 years old. The tables below (Tables 3.2.1 and 3.2.2) list medical equipment relating to basic child health care in facilities that provide these services. Items were observed by the surveyors, rather than merely reported by hospital staff.

#### 3.2.1 Ambulatory

According to the indicator related to the continuous availability of supplies and equipment needed for child care, ambulatory facilities should have at least one observed and functional example of the following equipment: pediatric scale, measuring tape, height rod, stethoscope, pediatric stethoscope, oto-ophthalmoscope, hand lamp, and examination table or stretcher. No ambulatory facilities met this requirement.



**Table 3.2.1** Child health care equipment observed and functional in ambulatory facilities

Equipment type	Ambulatory		
	N	%	SE
Pediatric scale	33	57.6	8.6
Measuring tape	33	54.5	8.7
Height rod	33	51.5	8.7
Stethoscope	33	57.6	8.6
Pediatric stethoscope	33	9.1	5.0
Oto-ophthalmoscope*	33	6.1	4.2
Hand lamp	33	18.2	6.7
Examination table or stretcher	33	60.6	8.5
All equipment observed and functional	33	0	

\*Four ambulatory facilities were asked about pantascopes as the alternative in place of the oto-ophthalmoscope

### 3.2.2 Basic and complete

At the basic and complete levels, facilities were considered to have continuous availability of equipment if they had at least one observed and functional example of the following equipment: pediatric scale or Salter scale, height rod, measuring tape, pediatric tensiometer, neonatal tensiometer, pediatric stethoscope, hand lamp, binaural stethoscope for newborns, reflex hammer, negatoscope, pantascopes/oto-ophthalmoscope, and examination table or stretcher. No basic- or complete-level facilities had all necessary equipment observed and functional on the day of the survey.

**Table 3.2.2** Child health care equipment observed and functional in basic- and complete-level health units

Equipment type	Basic			Complete		
	N	%	SE	N	%	SE
Pediatric scale or salter scale	2	100		2	100	
Height rod	2	100		2	100	
Measuring tape	2	100		2	100	
Pediatric tensiometer	2	50	35.4	2	0	
Neonatal tensiometer	2	0		2	0	
Pediatric stethoscope	2	100		2	0	
Hand lamp	2	0		2	0	
Binaural stethoscope for newborns	2	50	35.4	2	0	
Reflex hammer	2	50	35.4	2	0	
Negatoscope	2	0		2	0	
Pantascopes	2	0		2	0	
Examination table or stretcher	2	100		2	50	35.4
All equipment observed and functional	2	0		2	0	

### 3.3 Important drugs and supplements

Interviewers also observed the availability and stock of important drugs and supplements used for basic child health care. For ambulatory facilities, key drugs and supplements were sachets of oral rehydration salts, ferrous sulfate drops or multivitamins, sulfate of zinc or sulfate of gluconate, albendazole or mebendazole, and, in ambulatory facilities that were not health posts or mobile units, antibiotics. Basic and complete facilities are also expected to carry Ringer's lactate, Hartmann's solution, or saline solution. No health posts or mobile units were observed to have all of the required drugs and supplements on the day of the interview, but 66.7% of other ambulatory facilities, 50% of basic facilities and 100% of complete facilities met the criteria.

**Table 3.3.1** Child health care observed drugs and supplements in ambulatory units

Pharmacy inputs*	Health posts and mobile units			Other ambulatory facilities		
	N	%	SE	N	%	SE
Sachets of oral rehydration salts (ORS)	15	20	10.3	6	100	
Ferrous sulfate drops or multivitamins	15	40	12.6	6	100	
Sulfate of zinc/sulfate of gluconate	15	0		6	66.7	19.25
Albendazole/mebendazole	15	40	12.6	6	100	
Antibiotics**	n/a	n/a	n/a	6	100	
Continuous availability of pharmacy inputs in the previous three months***	15	0		6	66.7	19.25

\*Pharmacy data missing for 9 ambulatory facilities

\*\*Antibiotics = amoxicillin / erythromycin trimetropin sulfa / azithromycin / benzatonic penicillin

\*\*\*Overall pharmacy availability including availability of all inputs on the day of the survey and no stock-out in the previous three months of: ORS, zinc sulfate/zinc gluconate + albendazole/mebendazole + antibiotics (in *other* ambulatory facilities)

**Table 3.3.2** Child health care observed drugs and supplements in basic and complete units

Pharmacy inputs	Basic			Complete		
	N	%	SE	N	%	SE
Sachets of oral rehydration salts (ORS)	2	100		2	100	
Ferrous sulfate drops or multivitamins	2	50	35.4	2	100	
Sulfate of zinc/sulfate of gluconate	2	50	35.4	2	100	
Albendazole/mebendazole	2	100		2	100	
Antibiotics*	2	100		2	100	
Ringer's lactate/Hartmann's solution/saline solution	2	100		2	100	
Continuous availability of pharmacy inputs in the previous three months**	2	50	35.4	2	100	

\*Antibiotics = erythromycin trimetropin sulfa / azithromycin / benzatonic penicillin

\*\*Overall pharmacy availability including availability of all inputs on the day of the survey and no stock-out in the previous three months of: ORS, zinc sulfate/zinc gluconate + albendazole/mebendazole

### 3.4 Diarrhea management

In the medical record review section's diarrhea module, records of children who had diarrhea in the last two years were selected systematically. Five such records were identified at the ambulatory level. Table 3.4.1 details the number of records in which oral rehydration solution (ORS) and zinc were given to children with diarrhea.

**Table 3.4.1** Children treated appropriately for diarrhea

Treatment Prescribed	Diarrhea records		
	N	%	SE
ORS*	5	60	21.9
Zinc	5	40	21.9
ORS and zinc prescribed	5	20	17.9

\*Oral rehydraton solution

### 3.5 Deworming treatment

In the medical record review section's deworming module, records of children aged 12 to 59 months were selected systematically. Table 3.5.1 details the number of records in which two doses of deworming treatment were provided in the last year.

**Table 3.5.1** Child health deworming treatment

Treatment	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
One dose	70	94.3	2.8	4	75	21.6	15	93.3	6.4
Two doses	70	35.7	5.7	4	50	25.0	15	86.7	8.8

### 3.6 Management of low weight-for-age

In the medical record review section's underweight module, records of children aged 0 to 23 months with low weight-for-age were selected systematically. Table 3.5.1 details the number of records documenting different aspects of care recommended by medical norms for the management of low weight-for-age. Iron and multivitamin prescription and dosing were only required in basic and complete facilities.

**Table 3.6.1** Care for underweight children

Characteristic	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Weight recorded	54	100		4	100		15	100	
Height/length recorded	54	92.6	3.6	4	100		15	40	12.6
Charting of weight and height on take-home cards	54	16.7	5.1	4	50	25.0	15	20	10.3
Supplements provided	54	20.4	5.5	4	0		15	53.3	12.9
Assess feeding practices of children at-risk or with undernutrition	54	11.1	4.3	4	0		15	13.3	8.8
Counsel mothers and caregivers on prevention of undernutrition	54	14.8	4.8	4	0		15	20	10.3
Counsel mothers and caregivers on hygiene practices	54	14.8	4.8	4	0		15	0	
Counsel mothers and caregivers on how to prepare age-specific meals	54	11.1	4.3	4	0		15	0	
Counsel mothers and caregivers on how to feed the child	54	50	6.8	4	25	21.6	15	13.3	8.8
Iron prescribed	54	5.6	3.1	4	25	21.6	15	0	
Dose of iron is 2-4mg/kg/day	54	0		4	0		15	0	
Age of iron initiation between 2 weeks and 2 months	54	0		4	0		15	0	
Multivitamin prescribed	54	5.6	3.1	4	50	25.0	15	0	
All components performed according to the norm	54	3.7	2.6	4	0		15	0	

### 3.7 Newborn enrollment in child services

In the medical record review section's child services module, records of children born in the last two years were selected systematically. Table 3.7.1 details the number of records in which the newborn was enrolled for child health services within seven days of birth.

**Table 3.7.1** Child health services enrollment

Enrollment	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Children enrolled in child services within 7 days of birth	71	21.1	4.8	4	25	21.6	16	43.8	12.4

## Chapter 4 VACCINES

### 4.1 Vaccination services

When asked about vaccination services, 88.6% of ambulatory and 100% of basic and complete health facilities reported that they do vaccinate children. Interviewers also observed and recorded the setting of the room used for immunization. All basic facilities, 67.6% of ambulatory, and 50% of complete facilities provided a private room with visual and auditory privacy for immunization services (Table 4.1.1).

**Table 4.1.1** Vaccination services

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Unit vaccinates children under 5	35	88.6	5.4	2	100		2	100	
Immunization room									
Private room with visual and auditory privacy	34	67.6	8.0	2	100		2	50	35.4
Non-private room without auditory or visual privacy	34	2.9	2.9	2	0		2	0	
Visual privacy only	34	0		2	0		2	50	35.4
No privacy	34	26.5	7.6	2	0		2	0	
Don't provide such services	34	2.9	2.9	2	0		2	0	

### 4.2 Vaccine logistics

#### 4.2.1 Storage

Only 41.9% of ambulatory level facilities reported storing vaccines within the facility, while 100% of basic and 50% of complete reported in-facility vaccine storage. Of ambulatory facilities, 22.6% reported that they pick up vaccines from other facilities, and 35.5% have vaccines delivered when services are being provided (Table 4.2.2).

#### 4.2.2 Demand and supply

Facilities that store vaccines were asked logistical questions about the supply and demand of vaccines. All facilities reported self-determination in ordering vaccine supplies, and ordering the same quantity each time. Facilities varied in their strategies for timing of vaccine orders. Responses from facility representatives about the time it takes to receive orders and whether or not they received the correct quantity are further detailed in Table 4.2.2.

**Table 4.2.2** Vaccine demand and supply

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
<b>Storage</b>									
Stored in facility	31	41.9	8.9	2	100		2	50	35.4
Picked up from another facility	31	22.6	7.5	2	0		2	50	35.4
Delivered when services are being provided	31	35.5	8.6	2	0		2	0	
None of the above	31	0		2	0		2	0	
<b>Ordering Strategy</b>									
Determines own needs	13	100		2	100		1	100	
Need determined elsewhere	13	0		2	0		1	0	
Both(differ by vaccine)	13	0		2	0		1	0	
<b>Quantity to order strategy</b>									
Order same amount	13	92.3	7.4	2	100		1	100	
Different per vaccine	13	7.7	7.4	2	0		1	0	
<b>Time to order strategy</b>									
Fixed time, => once/week	13	0		2	0		1	0	
Fixed time, < once/week	13	53.8	13.8	2	50	35.4	1	100	
Order when needed	13	46.2	13.8	2	0		1	0	
<b>Time to receive supplies</b>									
< 1 week	13	92.3	7.4	2	50	35.4	1	100	
1-2 weeks	13	7.7	7.4	2	50	35.4	1	0	
> 2 weeks	13	0	0	2	0		1	0	
<b>Reception of quantity ordered</b>									
Always	13	84.6	10.0	2	100		1	100	
Almost always	13	7.7	7.4	2	0		1	0	
Almost never	13	7.7	7.4	2	0		1	0	

### 4.3 Vaccines observed

Table 4.3.1 indicates the percentage of facilities at which at least one unit of a specified vaccine was observed at the time of the survey. DPT, Hep B, and Hib vaccines were only checked if pentavalent vaccine was not in stock.

**Table 4.3.1** Vaccine stocks observed

Vaccine type	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Pentavalent	7	100		2	100		2	100	
MMR*	7	100		2	100		2	100	
Polio	7	100		2	100		2	100	
Influenza	7	100		2	50	35.4	2	100	
BCG	7	85.7	13.2	2	100		2	100	

\*MMR = measles + mumps + rubella

#### 4.4 Cold chain

Facilities that store vaccines, collect vaccines from other health units, or have vaccines delivered to the unit to be immediately applied were asked questions related to cold chain and the type of fridges used to store vaccines. While all facilities had an electric fridge, 57.1% of ambulatory, 50% of basic, and 100% of complete facilities also owned a cold box.

**Table 4.4.1** Fridge availability

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Storage									
Electric fridge	12	100		2	100		2	100	
Kerosene fridge	12	0		2	0		2	0	
Gas fridge	12	0		2	0		2	0	
Solar fridge	12	0		2	0		2	0	
Any of the above	12	100		2	100		2	100	

## Chapter 5 FAMILY PLANNING

### 5.1 Service provision

This chapter summarizes key indicators related to family planning. In the questionnaire component of the survey, facility representatives are asked about service provision and logistics of ordering and receiving supplies. In the observation component of the survey, interviewers observe the stock of certain family planning methods in the last three months.

All basic and complete health units and 88.6% of ambulatory facilities reported providing family planning services in-facility (Table 5.1.1). Interviewers recorded the setting of the room used for family planning services, finding that all complete- and basic-level units offer private rooms for patients seeking family planning services. At the ambulatory level, the majority (67.6%) also offer a private room.

While all basic facilities store contraceptives in-house, only 42.9% of ambulatory and 50% of complete facilities reported storing contraceptives. The remainder of these facilities have contraceptives delivered during service provision (Table 5.1.2).

**Table 5.1.1** Family planning (FP) services provision

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Offers FP services	35	88.6	5.4	2	100		2	100	
FP room									
Private room with visual and auditory privacy	34	67.6	8.0	2	100		2	100	
Non-private room without auditory or visual privacy	34	2.9	2.9	2	0		2	0	
Visual privacy only	34	2.9	2.9	2	0		2	0	
No privacy	34	23.5	7.3	2	0		2	0	
Other	34	0		2	0		2	0	

**Table 5.1.2** Family planning (FP) storage

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
FP Storage									
Yes, stores contraceptives	35	42.9	8.4	2	100		2	50	35.4
No, delivered when services are being provided	35	57.1	8.4	2	0		2	50	35.4



## 5.2 Observed contraception methods and reported family planning services

### 5.2.1 Observed contraception methods and reported family planning services in ambulatory facilities

Table 5.2.1 lists the percent of ambulatory facilities in which the surveyor observed at least one unit of a specific contraception method at the time of the survey. Most prevalent are pills, male condoms, and injectables. The table also shows reported availability of pregnancy tests (100%), and a trained doctor to perform IUD insertion (25%).

**Table 5.2.1** Observed contraception methods and reported services in ambulatory facilities

	Ambulatory		
	N	%	SE
Observed FP methods			
Any pill	15	100	
Combined oral pill	15	80	10.3
Progestin-only pill	15	66.7	12.2
Any injectable	14	78.6	11.0
Combined injectable (1 month)	15	53.3	12.9
Progestin-only injectable (3 months)	15	66.7	12.2
Male condom	15	86.7	8.8
Female condom	15	73.3	11.4
IUD*	15	20	10.3
Spermicide	15	0	
Diaphragm	15	0	
Emergency contraception pill	15	26.7	11.4
Reported Services			
Offers pregnancy tests	15	100	
Trained doctor to perform IUD insertion**	12	25	12.5

\*Intrauterine device

\*\*Data is missing from three ambulatory facilities

### 5.2.2 Observed contraception methods and reported family planning services in basic and complete facilities

Table 5.2.2 details the percent of basic- and complete-level facilities in which the surveyor observed at least one unit of a specific contraception method at the time of the survey. All facilities stocked contraceptive pills and offered pregnancy tests, and 100% of hospitals had a doctor trained to perform tubal ligation.

**Table 5.2.2** Observed contraception methods and reported services in basic and complete facilities

	Basic			Complete			
	N	%	SE	N	%	SE	DK/DTR
<b>Observed FP methods</b>							
Any pill	2	100		2	100		
Combined oral pill	2	100		2	100		
Progestin-only pill	2	100		2	100		
Any injectable	2	100		2	100		
Combined injectable (1 month)	2	50	35.4	2	50	35.4	
Progestin-only injectable (3 months)	2	100		2	100		
Male condom	2	100		2	100		
Female condom	2	100		2	50	35.4	
IUD*	2	100		2	100		
IUD insertion kit	2	50	35.4	2	0		
Spermicide	2	0		2	0		
Diaphragm	2	0		2	0		
Emergency contraception pill	2	50	35.4	2	0		
Implant	2	0		2	0		
<b>Reported services</b>							
Offers pregnancy test	2	100		2	100		0
Trained doctor to perform tubal ligation	2	0		2	100		0
Trained doctor to perform vasectomy	2	0		1	100		1

\*Intrauterine device

### 5.3 Composite family planning indicator

Facilities that meet the requirements of the composite family planning indicator offer family planning services and have, as observed by surveyors at the time of the survey, certain family planning methods and no stock-out of those methods in the last three months. According to the indicator, complete level facilities are also required to have a trained doctor to perform both tubal ligation and vasectomy.

#### 5.3.1 Family planning in ambulatory facilities

According to the country indicator manual, the composite family planning indicator measures continuous availability (no stock-out in the last 3 months) of male condoms, any pill, and any injectable at ambulatory facilities; 66.7% of all ambulatory facilities met these requirements.

**Table 5.3.1** Family planning in ambulatory facilities

	Ambulatory		
	N	%	SE
Composite FP indicator	15	66.7	12.6
Availability of methods on the day of the survey	15	73.3	11.8
Continuous availability of all FP methods in the previous three months*	15	66.7	12.6

\*Overall FP methods availability including availability of all inputs on the day of the survey and no stock-out in the previous three months of condoms, pills & injectables

### 5.3.2 Family planning in basic and complete facilities

According to the country indicator manual, basic-level facilities meet the family planning indicator if they have continuous availability (no stock-out in the last 3 months) of condoms, any pill, and any injectable. In addition to these inputs, the facilities must have an IUD observed on the day of the survey; 100% of basic facilities met this criteria. Complete level facilities have the same criteria, but must also have a doctor trained to perform tubal ligation and a vasectomy. One hospital responded “Don’t know” when asked about staff trained to perform vasectomy. This case was considered missing and the hospital was evaluated based on all other criteria. Both hospitals met the requirements listed for the family planning indicator.

**Table 5.3.2** Family planning in basic and complete facilities

	Basic			Complete		
	N	%	SE	N	%	SE
Composite FP indicator	2	100		2	100	
Availability of methods on the day of the survey	2	100		2	100	
Continuous availability of all FP methods in the previous three months*	2	100		2	100	
Staff trained in tubal ligation & vasectomy available**	n/a	n/a	n/a	1	100	

\*Overall FP methods availability including availability of all inputs on the day of the survey and no stock-out in the previous three months of condoms, pills & injectables

\*\*Only measured at complete facilities

## 5.4 Teaching and awareness

### 5.4.1 Counseling services and educational posters

Table 5.4.1 illustrates the percent of facilities that promote family planning through counseling, teaching, and educational graphics posted in the facility.

**Table 5.4.1** Counseling services and educational posters

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Individual FP counseling*	31	100		2	100		2	100	
Group FP counseling*	31	74.2	7.9	2	50	35.4	2	100	
FP posters on walls of facility**	15	66.7	12.2	2	50	35.4	2	100	
STI/HIV posters on walls of facility**	15	80	10.3	2	50	35.4	2	100	

\*Evaluated only if the health facility provides family planning services

\*\*Evaluated only if the health facility stocks family planning methods

### 5.4.2 Family planning counseling indicator

The indicator related to family planning counseling specifies that health facilities must have educational materials on family planning such as brochures, flip charts, tapes, and videos. Health posts and mobile units require only flip charts and brochures, while all other units must have these in addition to videos and tapes related to family planning. Table 5.4.2 shows the percentage of units that meet these specifications by facility type.

**Table 5.4.2** Family planning counseling

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Sufficient educational materials available	15	13.3	8.8	2	50	35.4	2	0	

### 5.5 Family planning method adoption

Medical records of women who gave birth in the last two years and received postpartum care were reviewed. These records were used to measure rates of family planning method adoption after delivery. Table 5.5 displays whether a woman received a contraceptive after delivery and, more specifically, whether the contraceptive was a condom, injection, IUD, or tubal ligation.

**Table 5.5** Family planning methods adopted during postpartum care

	Basic			Complete		
	N	%	SE	N	%	SE
Woman received a contraceptive	19	5.3	5.1	23	8.7	5.9
Condom	19	0		23	0	
Injection	19	5.3	5.1	23	4.3	4.3
Intrauterine device	19	0		23	0	
Tubal ligation	19	0		23	4.3	4.3
Woman received a contraceptive + contraceptive was condom/injection/IUD/tubal ligation	19	5.3	5.1	23	8.7	5.9

## Chapter 6 MATERNAL HEALTH: ANTENATAL CARE (ANC), DELIVERY, AND POSTPARTUM CARE (PPC)

### 6.1 Service provision

This chapter summarizes key indicators related to maternal health. Interviewers observed the functionality of equipment, the continuous availability of drugs and supplements, and key lab inputs related to the provision of antenatal, delivery, and postpartum care. In addition to the questionnaire and observation component of the survey, interviewers also reviewed antenatal care medical records in all applicable facilities, as well as delivery and postpartum care medical records in facilities at the basic and complete level.

82.9% of ambulatory level facilities reported offering antenatal care services. The antenatal care room, as observed by surveyors, offered auditory and visual privacy in the majority of facilities. However, non-private rooms and rooms with visual privacy only were also observed (Table 6.1.1). Questions about delivery and postpartum care were not asked at the ambulatory level.

All basic-level facilities reported offering antenatal, routine delivery services, and postpartum care services. Interviewers observed private rooms with auditory and visual privacy for antenatal and postpartum care in all basic facilities. All complete facilities also reported offering antenatal care, routine delivery services, and postpartum care. Information about room types for these services is further detailed in Table 6.1.2.

**Table 6.1.1** ANC service provision in ambulatory facilities

	Ambulatory		
	N	%	SE
Offers ANC services	35	82.9	6.4
ANC room			
Private room with auditory and visual privacy	31	74.2	7.9
Non-private room without auditory or visual privacy	31	3.2	3.2
Visual privacy only	31	6.5	4.4
No privacy	31	16.1	6.6

**Table 6.1.2** ANC, delivery, and PPC service provision in basic and complete facilities

	Basic			Complete		
	N	%	SE	N	%	SE
Offers ANC services	2	100		2	100	
Offers routine delivery services (non-urgent)	2	100		2	100	
Offers PPC services	2	100		2	100	
<b>ANC - PPC room</b>						
Private room with auditory and visual privacy	2	100		2	100	
Non-private room without auditory or visual privacy	2	0		2	0	
Visual privacy only	2	0		2	0	
No privacy	2	0		2	0	
<b>Delivery room</b>						
Private room with auditory and visual privacy	2	50	35.4	2	50	35.4
Non-private room without auditory or visual privacy	2	0		2	50	35.4
Visual privacy only	2	50	35.4	2	0	
No privacy	2	0		2	0	

## 6.2 ANC - PPC equipment

Tables 6.2.1 and 6.2.2 indicate the percentage of facilities where specific ANC and PPC equipment was present and observed as functional by a surveyor at the time of the survey. According to the indicator relating to the continuous availability of supplies and equipment necessary for antenatal and postpartum care, certain equipment is required depending on facility classification level.

Ambulatory health units are required to have at least one observed and functional example of the following equipment: scale with measuring rod + gynecological examination table or stretcher + obstetric tape for CLAP + gestogram + swan neck lamp or pelvic examination lamp + sphygmomanometer (tensiometer) + stethoscope + fetoscope (Pinard stethoscope) + oral/axillary thermometer + reflex hammer + perinatal maternal medical history + perinatal maternal card + referral forms + stretcher sheets or robes for patients.

In total, 3.2% of the ambulatory-level facilities met the criteria listed above. This is further detailed in Table 6.2.1.

**Table 6.2.1** Observed and functional ANC - PPC equipment in ambulatory facilities

Equipment type	Ambulatory		
	N	%	SE
Scale with measuring rod	31	54.8	8.9
Oral/axillary thermometer	31	35.5	8.6
Gynecological exam table/stretchers	31	54.8	8.9
Obstetric tape for CLAP	31	51.6	9.0
Gestogram	31	38.7	8.8
Swan neck lamp or pelvic examination lamp	31	41.9	8.9
Sphygmomanometer (tensiometer)	31	41.9	8.9
Stethoscope	31	54.8	8.9
Fetoscope (Pinard stethoscope)	31	25.8	7.9
Reflex hammer	31	6.5	4.4
Perinatal maternal medical history	31	54.8	8.9
Perinatal maternal card	31	54.8	8.9
Referral forms	31	35.5	8.6
Robes for patients*	31	22.6	7.5
Stretcher sheets*	31	38.7	8.8
All equipment observed and functional	31	3.2	3.2

\*Robes for patients & stretcher sheets are used as alternatives in the indicator related to ANC & PPC

According to the country indicator manual, basic and complete health units should have at least one observed and functional piece of the following equipment: scale with measuring rod + gynecological examination table or stretchers + obstetric tape for CLAP/measuring tape + instrument/equipment cart or stand + gestogram + swan neck lamp or pelvic examination lamp + sphygmomanometer (tensiometer) + stethoscope + set for IUD insertion + fetoscope (Pinard stethoscope) + oral/ axillary thermometer + reflex hammer + perinatal maternal medical history + perinatal maternal card + referral forms + stretcher sheets or robes for the patients. None of the basic and complete level facilities met the criteria listed above (Table 6.2.2).



**Table 6.2.2** Observed and functional ANC - PPC equipment in basic and complete facilities

Equipment type	Basic			Complete		
	N	%	SE	N	%	SE
Scale with measuring rod	2	100		2	100	
Oral/axillary thermometer	2	0		2	0	
Gynecological examination table/stretchers	2	100		2	100	
Obstetric tape for CLAP/measuring tape	2	50	35.36	2	100	
Instrument/equipment cart or stand	2	0		2	0	
Gestogram	2	0		2	0	
Swan neck lamp or pelvic examination lamp	2	100		2	100	
Sphygmomanometer (tensiometer)	2	100		2	100	
Stethoscope	2	50	35.36	2	100	
Set for IUD insertion	2	0		2	50	35.4
Fetoscope (Pinard stethoscope)	2	0		2	0	
Reflex hammer	2	0		2	50	35.4
Perinatal maternal medical history	2	100		2	100	
Perinatal maternal card	2	100		2	100	
Referral forms	2	0		2	50	35.4
Robes for patients*	2	0		2	50	35.4
Stretcher sheets*	2	0		2	50	35.4
All equipment observed and functional	2	0		2	0	

\*Robes for patients & stretcher sheets are used as alternatives in the indicator related to ANC & PPC

### 6.3 ANC - PPC medications and lab inputs

Tables 6.3.1 - 6.3.4 indicate the percentage of facilities where specific medications and lab inputs were available at the time of the survey and had no stock-out in the last three months for inputs related to ANC and PPC. According to the indicator related to the continuous availability of supplies and equipment necessary for antenatal and postpartum care, certain medications and lab inputs are required depending on facility classification level. Only basic and complete facilities that had a lab were required to have the specified lab equipment.

#### 6.3.1 ANC - PPC medications in ambulatory facilities

Ambulatory health units are checked for nitrofurantoin + cephalexin + Ayre's spatula (for consideration of cervical cytology)/swabs on the day of the survey as well as continuous availability (no stock-out in the last 3 months) of multivitamin/ (iron + folic acid) + tetanus vaccine.

Most ambulatory facilities did not have the required pharmacy inputs in stock at the time of the survey.

The least common item was nitrofurantoin, which was present in only 13.6% of facilities (Table 6.3.1).

**Table 6.3.1** ANC - PPC pharmacy inputs in ambulatory facilities

Pharmacy inputs*	Ambulatory		
	N	%	SE
(Iron + Folic acid) or multivitamin	22	59.1	10.5
Nitrofurantoin	22	13.6	7.3
Cefalexin	22	31.8	9.9
Tetanus vaccine	22	45.5	10.6
Ayre's spatula (for consideration of cervical cytology)/swabs	22	27.3	9.5
All inputs observed on the day of the survey	22	13.6	7.3
Continuous availability of all inputs in the previous three months**	22	13.6	7.3

\*Pharmacy data missing for 9 ambulatory facilities

\*\*Overall pharmacy availability including availability of all inputs on the day of the survey and no stock-out in the previous three months of (iron + folic acid)/multivitamin + tetanus vaccine

### 6.3.2 ANC - PPC medications and lab inputs in basic and complete facilities

Basic and complete level health facilities are checked for nitrofurantoin + cephalexin + Ayre's spatula (for consideration of cervical cytology)/swabs on the day of the survey as well as continuous availability (no stock-out in the last 3 months) of multivitamin/ (iron + folic acid) + tetanus vaccine. The percentage of facilities that had each of these components is detailed by facility-level classification in Table 6.3.2.a.

None of the basic or complete level facilities had Ayre's spatula on the day of the survey, and therefore, did not meet the requirement for pharmacy inputs listed above.

**Table 6.3.2.a** ANC - PPC pharmacy inputs in basic and complete facilities

Pharmacy inputs	Basic			Complete		
	N	%	SE	N	%	SE
(Iron + Folic acid) or multivitamin	2	100		2	50	35.4
Nitrofurantoin	2	100		2	100	
Cefalexin	2	100		2	50	35.4
Tetanus vaccine	2	0		2	50	35.4
Ayre's spatula (for consideration of cervical cytology)/swabs	2	0		2	0	
All inputs observed on the day of the survey	2	0		2	0	
Continuous availability of all inputs in the previous three months*	2	0		2	0	

\*Overall pharmacy availability including availability of all inputs on the day of the survey and no stock-out in the previous three months of (iron + folic acid)/multivitamin + tetanus vaccine

In addition to important pharmacy inputs, certain laboratory inputs necessary for antenatal and postpartum care were observed in basic and complete facilities that had a lab. According to the country indicator manual, the equipment requirements differed by facility-level classification; these criteria are listed in the tables below.

Surveyors measured basic facilities for stock of the following items on the day of the survey: rapid syphilis test kit or dark field microscope or equipment for enzyme immunoassay + rapid HIV/AIDS test kit or fluorescence microscope + urine protein strips or urinalysis equipment + blood glucose strips or glucose meter + HemoCue or automated cell counter + microcuvettes + pregnancy test kit. The rapid HIV/AIDS kit was also measured for stock-out in the previous three months. Table 6.3.2.b. details the percentage of facilities that had each of the components listed above.

None of basic level facilities met the requirements for laboratory inputs needed for antenatal and postnatal care due to the lack of blood glucose strips or a glucose meter (Table 6.3.2.b).

**Table 6.3.2.b** ANC - PPC laboratory inputs in basic facilities

Laboratory inputs	Basic		
	N	%	SE
Rapid syphilis test/dark field microscope/ equipment for enzyme immunoassay	2	100	
Rapid HIV/AIDS test/fluorescence microscope	2	100	
Urine protein strips/urinalysis equipment	2	100	
Blood glucose strips/glucose meter	2	0	
HemoCue/automated cell counter	2	100	
Microcuvettes	2	100	
Pregnancy test kit	2	100	
All equipment observed and functioning	2	0	
Continuous availability of all inputs in the previous three months*	2	0	

\*Overall laboratory availability including availability of all inputs on the day of the survey and no stock-out in the previous three months of rapid HIV/AIDS test

Surveyors measured complete facilities for stock of the following items on the day of the survey: dark field microscope + equipment for enzyme immunoassay + fluorescence microscope + urinalysis equipment + glucose meter + automated cell counter. The rapid HIV/AIDS kit was also measured for stock-out in the previous three months. Table 6.3.4 details the percentage of facilities that had each of the components listed above.

At the complete level, none of the evaluated facilities had a fluorescence microscope, glucose meter, or automated cell counter; therefore, none met the requirements for laboratory inputs needed for antenatal and postnatal care. Only half had a dark field microscope and equipment for enzyme immunoassay (Table 6.3.2.c).

**Table 6.3.2.c ANC - PPC laboratory inputs in complete facilities**

Laboratory inputs	Complete		
	N	%	SE
Dark field microscope	2	50	35.4
Equipment for enzyme immunoassay	2	50	35.4
Fluorescence microscope	2	0	
Urinalysis equipment	2	100	
Glucose meter	2	0	
Automated cell counter	2	0	
All equipment observed and functioning	2	0	
Continuous availability of all inputs in the previous three months*	2	0	

\*Overall laboratory availability including availability of all inputs on the day of the survey and no stock-out in the previous three months of rapid HIV/AIDS test

#### 6.4 ANC medical record review

Records of women who received antenatal care in health facilities in the last two years are selected systematically and reviewed.

Table 6.4.1 shows the proportion of women who had their first ANC visit attended by a doctor or nurse as well as the proportion of women who had their first ANC visit within 12 weeks of gestation. Gestational age was calculated from the date recorded of last menstrual cycle.

Although all women who delivered in the last two years, for whom we have medical records, had their first visit with a doctor or nurse, less than one-quarter completed an antenatal care visit during the first 12 weeks of gestation (Table 6.4.1).

**Table 6.4.1 ANC visit during the first trimester in all facilities**

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
First ANC visit with a doctor or nurse	23	100		9	100		25	100	
Date of first visit during first 12 weeks of gestation	23	30.4	9.6	9	11.1	10.5	25	20	8.0

#### 6.5 Delivery care medical record review

Records of women who delivered in health facilities in the last two years are selected systematically and reviewed.

##### 6.5.1 Use of partograph during delivery

If a partograph was used during delivery in basic and complete facilities, interviewers were instructed to look for 14 specific items to be properly complete in the partograph record: patient name + curve is

completed until the moment of birth + interpretation of the real curve in respect of warning curve + graphical representation of fetal heart rate + interpretation of changes in fetal heart rate + graph of the frequency of uterine contractions + interpretation of changes in uterine contraction + systolic blood pressure + diastolic blood pressure + pulse + position of the baby + contractions intensity + location of the pain + intensity of the pain.

No complete facilities had delivery records from the past two years with use of partograph. Thus, only basic facilities are presented in Table 6.5.1. Less than one-third of records (which included a partograph) had all components of the partograph required by the standards of care.

**Table 6.5.1** Basic deliveries with proper use of partograph

Items in partograph	N	Basic	
		%	SE
Patient name	15	66.7	12.2
Curve completed until the moment of birth	15	53.3	12.9
Interpretation of real curve in respect to warning curve	15	53.3	12.9
Graph of fetal heart rate	15	33.3	12.2
Interpretation of changes in fetal heart rate	15	26.7	11.4
Graph of uterine contractions	15	40	12.6
Interpretation of changes in uterine contractions	15	40	12.6
Systolic blood pressure	15	66.7	12.2
Diastolic blood pressure	15	66.7	12.2
Pulse	15	66.7	12.2
Position of the baby	15	66.7	12.2
Intensity of contractions	15	66.7	12.2
Location of the pain	15	66.7	12.2
Intensity of the pain	15	66.7	12.2
All components included in the partograph	15	26.7	11.4

### 6.5.2 Births with active management of the third stage

Basic and complete facilities were checked for adherence to the standards of care for active management of the third stage of labor. Among women who delivered during the past two years in a facility, it was determined whether intramuscular oxytocin or another uterotonic was administered after delivery. Data were available only for basic facilities (Table 6.5.2).

**Table 6.5.2** Births with active management of the third stage of labor

Drugs administered	N	Basic	
		%	SE
Oxytocin	15	53.3	12.9
Other uterotonics	15	6.7	6.4
Oxytocin or other uterotonic administered	15	60	12.6

## 6.6 Postpartum care medical record review

Records of women who received postpartum care in health facilities in the last two years were selected systematically and reviewed.

### 6.6.1 Standards of care during postpartum care for neonates

Postpartum care records were reviewed for adherence to the standards of care for neonates. The newborn should have been attended by a doctor, nurse, or midwife, and had each of the following procedures and checkups: administration of vitamin K + application of oxytetracycline ophthalmic prophylaxis / chloramphenicol + evaluation of malformations present + skin color assessment + Apgar score at 1 minute + Apgar score at 5 minutes + pulse + respiratory rate + weight + height. These records were available only in basic and complete facilities.

Most records indicated that a nurse or midwife attended to the neonate for postpartum care. Among the postpartum procedures and checks, height measurements were the least observed in the records (Table 6.6.1).

**Table 6.6.1** Postpartum care for the neonate, according to standards

	Basic			Complete		
	N	%	SE	N	%	SE
<b>Attendant at postpartum care</b>						
Doctor	19	0		24	4.2	4.1
Nurse	19	57.9	11.3	24	91.7	5.6
Midwife	19	36.8	11.1	24	4.2	4.1
<i>Doctor, nurse, or midwife</i>	19	94.7	5.1	24	100	
<b>Procedures and checkups at postpartum care</b>						
Vitamin K	19	63.2	11.1	24	95.8	4.1
Oxytetracycline ophthalmic prophylaxis/ chloramphenicol	19	63.2	11.1	24	91.7	5.6
Evaluation of malformations	19	52.6	11.4	24	91.7	5.6
Skin color assessment	19	84.2	8.4	24	100	
Apgar score at 1 minute	19	63.2	11.1	24	45.8	10.2
Apgar score at 5 minutes	19	63.2	11.1	24	45.8	10.2
Pulse	19	57.9	11.3	24	41.7	10.1
Respiratory rate	19	52.6	11.4	24	41.7	10.1
Weight	19	63.2	11.1	24	41.7	10.1
Height	19	26.3	10.1	24	41.7	10.1
<i>All procedures and checkups observed</i>	19	15.8	8.4	24	33.3	9.6
Necessary attendant and all norms observed at postpartum care	19	15.8	8.37	24	33.3	9.62

## Chapter 7 MATERNAL & NEONATAL HEALTH: COMPLICATIONS

### 7.1 Emergency obstetric and neonatal care service provision

This chapter summarizes key indicators related to the management of maternal and neonatal complications at the basic and complete levels of facilities. Interviewers observed equipment in the room designated for emergency obstetric and neonatal care and certain related drugs in the pharmacy. In addition, interviewers reviewed medical records of women and neonates with complications.

**Table 7.1.1** Essential obstetric and neonatal care service provision in basic and complete facilities

	Basic			Complete		
	N	%	SE	N	%	SE
Emergency room						
Private room with visual and auditory privacy	2	50	35.4	2	0	
Non-private room without auditory or visual privacy	2	0		2	50	35.4
Visual privacy only	2	50	35.4	2	50	35.4
No privacy	2	0		2	0	
Don't provide this service	2	0		2	0	

### 7.2 Supplies and equipment needed for emergency obstetric and neonatal care

In the health facility survey observation module, interviewers checked availability and functionality of inputs related to emergency obstetric and neonatal care. According to the indicator relating to emergency obstetric and neonatal care, surveyors should observe at least one functional piece of the equipment listed in Table 7.2.1, with the exception of neonatal/pediatric stethoscope, equipment for anesthesia, and equipment for C-sections which are required only in complete facilities.

As detailed in table 7.2.1, none of the evaluated facilities had all the required equipment functional on the day of the survey.

**Table 7.2.1** Observed and functional equipment for emergency care

Equipment type	Basic			Complete		
	N	%	SE	N	%	SE
Blood pressure apparatus	2	100		2	100	
Stethoscope	2	100		2	100	
Pinard stethoscope /Portable Doppler	2	50	35.4	2	100	
Autoclave/dry heat sterilizer	2	0		2	0	
Tank of oxygen/central oxygen supply	2	100		2	100	
Adult resuscitation bag	2	100		2	100	
Neonatal resuscitation bag	2	100		2	100	
Laryngoscope	2	0		2	50	35.4
Uterine curettage kit/MVA kit*	2	0		2	0	
Neonatal/pediatric stethoscope	n/a	n/a	n/a	2	50	35.4
Equipment for anesthesia	n/a	n/a	n/a	2	0	
Equipment for C-sections	n/a	n/a	n/a	2	0	
All equipment observed and functional	2	0		2	0	

\*Basic facilities were surveyed for uterine curettage kits while complete facilities were surveyed for MVA kits

### 7.3 Important drugs needed for emergency obstetric and neonatal care

In the health facility survey observation module, interviewers check for the availability of certain drugs related to emergency obstetric and neonatal care, depending on the facility classification. Clindamycin and cefotaxime was not observed in any basic facilities. As detailed in tables 7.3.1 and 7.3.2, none of the evaluated facilities had all specified drugs available on the day of the survey.

**Table 7.3.1** Drugs needed for emergency and neonatal care in basic level facilities

Drug availability	Basic		
	N	%	SE
Dexamethasone/betamethasone	2	100	
Magnesium sulfate	2	100	
Antibiotics*	2	100	
Amikacin sulfate	2	50	35.4
Chloramphenicol	2	100	
Hydralazine ampoules	2	50	35.4
Diazepam	2	100	
Oxytocin/ergonovine maleate	2	100	
Benzylpenicillin G procainic	2	100	
Doxycycline	2	50	35.4
Clindamycin	2	0	
Cefotaxime	2	0	
Gentamicin ampoules	2	100	
Calcium gluconate	2	50	35.4
Atropine/epinephrine	2	100	
All drugs available on the day of the survey	2	0	

\*Antibiotics = penicillin crystals / IV ampicillin / amoxicillin



**Table 7.3.2** Drugs needed for emergency obstetric and neonatal care in complete-level facilities

Drug availability	Complete		
	N	%	SE
Dexamethasone/betamethasone	2	100	
Magnesium sulfate	2	100	
Antibiotics*	2	100	
Amikacin sulfate	2	50	35.4
Chloramphenicol/metronidazole	2	100	
Hydralazine/hydralazine hydrochloride	2	100	
Diazepam/midazolam hydrochloride	2	100	
Oxytocin /ergonovine maleate	2	100	
Succinylcholine (suxamethonium chloride)	2	50	35.4
Sevoflurane	2	50	35.4
Nifedipine	2	50	35.4
Ceftriaxone	2	50	35.4
Furosemide	2	100	
All drugs available on the day of the survey	2	0	

\*Antibiotics = penicillin crystals / IV ampicillin / amoxicillin

## 7.4 Management of obstetric complications

### 7.4.1 Women with obstetric complications (sepsis, hemorrhage, pre-eclampsia and eclampsia) managed according to the norm in the last two years

In the medical record review portion of the survey, records of women who had one of the maternal complications of interest in the last two years were selected systematically and reviewed. In total, interviewers reviewed records of 39 women with one or more maternal complications (Table 7.4.1).

**Table 7.4.1** Distribution of maternal complications by facility classification

	Basic	Complete	Total
Women with sepsis	1	0	1
Women with hemorrhage	4	2	6
Women with pre-eclampsia	19	7	26
Women with eclampsia	1	5	6
Total	25	14	39

### 7.4.2 Sepsis

According to the country indicator manual, sepsis is managed according to the norm if vital signs were checked (temperature + pulse + diastolic and systolic blood pressure) and antibiotics were administered. There was only one record of maternal sepsis, observed in a basic facility; the record did not meet any of the criteria outlined above, and therefore was not managed according to standards.

**Table 7.4.2** Medical record review: sepsis

	Basic		
	N	%	SE
Temperature checked	1	0	
Pulse checked	1	0	
Systolic blood pressure checked	1	0	
Diastolic blood pressure checked	1	0	
Antibiotics administered	1	0	
Sepsis managed according to the norm (meets all above criteria)	1	0	

### 7.4.3 Hemorrhage

Hemorrhage is managed according to the norm at basic-level facilities if vital signs were recorded (pulse + diastolic and systolic blood pressure + respiratory rate + temperature) and oxytocin or another uterotonic was administered. As detailed in Table 7.4.3.a, only one of four hemorrhage records from basic-level facilities was managed according to the standards.

At the complete level, hemorrhage is managed according to the norm if vital signs were checked (pulse + diastolic and systolic blood pressure + respiratory rate + temperature), lab tests were performed (Ht + Hb + PT + PTT + platelet count), and oxytocin or another uterotonic was administered. Neither of the two records at complete-level facilities showed that the patient was managed according to the standards (Table 7.4.3.b).

**Table 7.4.3a** Medical record review at basic level facilities: hemorrhage

	Basic		
	N	%	SE
Vital signs checked	4	25	21.6
Oxytocin/other uterotonic	4	75	21.6
Hemorrhage managed according to the norm (meets all above criteria)	4	25	21.6

**Table 7.4.3.b** Medical record review at complete level facilities: hemorrhage

	Complete		
	N	%	SE
Vital signs checked	2	100	
Oxytocin/other uterotonic	2	50	35.4
Lab tests performed	2	0	
Hemorrhage managed according to the norm (meets all above criteria)	2	0	

#### 7.4.4 Pre-eclampsia and eclampsia

According to the country indicator manual, pre-eclampsia and eclampsia are managed according to the standards if records contain all criteria listed below:

Basic level: Vital signs were checked (diastolic and systolic blood pressure + pulse + respiratory rate), lab tests were performed (urine protein), and correct treatment was administered (magnesium sulfate + hydralazine/ nifedipine if diastolic blood pressure is > 110).

Complete level: Vital signs were checked (diastolic and systolic blood pressure + pulse + respiratory rate + patellar reflex), lab tests performed (urine protein + platelet count + aspartate aminotransferase + alanine aminotransferase + lactate dehydrogenase), correct treatment was administered (magnesium sulfate + hydralazine/ nifedipine if diastolic blood pressure is > 110 + dexamethasone/betamethasone if gestational age is 26-34 weeks), and the outcome of pregnancy is recorded (vaginal delivery or C-section).

As detailed in tables 7.4.4.a and 7.4.4.b, none of the records of women with pre-eclampsia or eclampsia were managed according to the norm. In most cases, the correct lab tests were not done or were not reported on the medical record. At the complete level, none of the records had complete documentation of necessary laboratory tests. Correct treatment was also very rare.

**Table 7.4.4.a** Medical record review: pre-eclampsia

	Basic			Complete		
	N	%	SE	N	%	SE
Vital signs checked	19	68.4	10.66	7	0	
Lab tests performed	19	31.6	10.66	7	0	
Correct treatment	19	5.3	5.12	7	42.9	18.7
Outcome recorded	n/a	n/a	n/a	7	85.7	13.2
Pre-eclampsia managed according to the norm (meets all above criteria)	19	0		7	0	

**Table 7.4.4.b** Medical record review: eclampsia

	Basic			Complete		
	N	%	SE	N	%	SE
Vital signs checked	1	100		5	0	
Lab tests performed	1	0		5	0	
Correct treatment	1	0		5	20	17.9
Outcome recorded	n/a	n/a	n/a	5	100	
Eclampsia managed according to the norm (meets all above criteria)	1	0		5	0	

### 7.4.5 All complications

The proportion of all maternal complications that was managed according to the norm for all basic and complete facilities is displayed in table 7.4.5 below.

**Table 7.4.5** Medical record review: all maternal complications

	Basic and Complete		
	N	%	SE
Any complication managed according to the norm	39	2.6	2.5

### 7.5 Management of neonatal complications

#### 7.5.1 Neonatal complications (low birth weight, prematurity, sepsis and asphyxia) managed according to the norm in the last two years

In the medical record review portion of the survey, records of infants who had one of the neonatal complications of interest in the last two years were selected systematically and reviewed. In total, interviewers reviewed records of 54 neonatal complications (Table 7.5.1).

**Table 7.5.1** Distribution of maternal complications by facility classification

	Basic	Complete	Total
Neonates with low birth weight	2	10	12
Neonates with prematurity	3	0	3
Neonates with sepsis	1	32	33
Neonates with asphyxia	6	0	6
Total	12	42	54

#### 7.5.2 Low birth weight (LBW) and prematurity

According to the country indicator manual, low birth weight and prematurity are managed according to the standards if records contain all criteria listed below.

Basic and complete levels: All checkups and lab tests reported (pulse, respiratory rate, Silverman score, blood glucose level, oxygen saturation level), and neonate was evaluated by a doctor at admission.

None of the evaluated records of neonates with low birth weight or prematurity reported management according to the standards. Although all infants were evaluated by a doctor at admission, none had adequate tests and checks performed (according to the record). For prematurity, no records from complete facilities were identified.

**Table 7.5.2.a** Medical record review: low birth weight

	Basic			Complete		
	N	%	SE	N	%	SE
Evaluated by a doctor at admission	2	100		10	100	
All checks recorded	2	0		10	0	
Managed according to the norm (meets all above criteria)	2	0		10	0	

**Table 7.5.2.b** Medical record review: prematurity

	Basic		
	N	%	SE
Evaluated by a doctor at admission	3	100	
All checks recorded	3	0	
Managed according to the norm (meets all above criteria)	3	0	

### 7.5.3 Sepsis

According to the country indicator manual, sepsis is managed according to the standards if records contain all criteria listed below:

**Basic level:** All checkups reported (temperature + pulse), all lab tests performed (leukocyte count), treatment with antibiotics (ampicillin/gentamicin), and neonate was evaluated by a doctor at admission.

**Complete level:** All checkups reported (temperature + pulse), all lab tests performed (leukocyte count + C-reactive protein + erythrocyte sedimentation rate), treatment with antibiotics (ampicillin/gentamicin), and neonate was evaluated by a doctor at admission.

As detailed in table 7.5.3, none of the evaluated records at complete facilities showed neonates managed according to the norm for sepsis. This is largely due to the absence of laboratory tests.

**Table 7.5.3** Medical record review: infants with sepsis

	Basic			Complete		
	N	%	SE	N	%	SE
Evaluated by a doctor at admission	1	100		32	100	
All checks recorded	1	100		32	0	
Treatment with antibiotics	1	100		32	100	
Sepsis managed according to the norm (meets all above criteria)	1	100		32	0	

#### 7.5.4 Asphyxia

According to the country indicator manual, asphyxia is managed according to the standards if records contain all criteria listed below:

Basic level: All checkups reported (temperature + pulse + respiratory rate + Apgar score at 1 minute + Apgar score at 5 minutes), all lab tests performed (hemoglobin + blood glucose level), treatment with antibiotics (ampicillin/gentamicin), and neonate was evaluated by a doctor at admission.

Complete level: All checkups reported (temperature + pulse + respiratory rate + Silverman score), lab tests performed (oxygen saturation + blood glucose level + hemoglobin + C-reactive protein + erythrocyte sedimentation rate + chest radiograph), treatment with antibiotics (ampicillin/gentamicin), and neonate was evaluated by a doctor at admission.

Similar to the other neonatal complication evaluations, records of asphyxia in basic level facilities did not have all checks reported. Three of the six cases of asphyxia, all found in basic hospitals, were managed according to the standards. No records from complete-level facilities were reviewed.

**Table 7.5.4** Medical record review: infants with asphyxia

	Basic		
	N	%	SE
Evaluated by a doctor at admission	6	100	
All checks recorded	6	50	20.4
Correct treatment	6	100	
Asphyxia managed according to the norm (meets above criteria)	6	50	20.4

#### 7.5.5 All complications

The proportion of all neonatal complications that was managed according to the norm for all basic and complete facilities is displayed in table 7.5.5 below.

**Table 7.5.5** Medical record review: all neonatal complications

	Basic and Complete		
	N	%	SE
Any complication managed according to the norm	53	7.5	3.6

#### 7.6 Caesarian sections

According to review of medical records, caesarian sections represented 36% of total births in the last two years.

## Chapter 8 INFECTION CONTROL

### 8.1 Equipment for disposal and disposal methods

#### 8.1.1 Equipment for disposal

Staff at health facilities were asked about the availability of certain items related to biohazard disposal, including incinerators, manuals that specify decontamination methods, and contracts with other facilities for biohazard disposal (Table 8.1.1).

**Table 8.1.1** Equipment for disposal

	Ambulatory				Basic				Complete			
	N	%	SE	DK/DR	N	%	SE	DK/DR	N	%	SE	DK/DR
Incinerator at facility	35	2.9	2.8	0	2	0		0	2	0		0
Contract with other facility for biohazard disposal	35	71.4	7.6	0	2	0		0	2	0		0
Manual for decontamination	32	40.6	8.7	3	2	50	35.4	0	2	100		0

### 8.2 Decontamination and sterilization

Table 8.2.1 lists the different techniques used for decontaminating and sterilizing equipment.

**Table 8.2.1** Decontamination and sterilization

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
<b>Decontamination methods</b>									
Submerged in disinfectant, then scrubbed with a brush, soap and water	35	31.4	7.8	2	0		2	0	
Scrubbed with a brush, soap and water, then submerged in disinfectant	35	11.4	5.4	2	50	35.4	2	100	
Scrubbed with a brush, soap and water only	35	2.9	2.8	2	0		2	0	
Submerged in disinfectant, without scrubbing with brush	35	0		2	0		2	0	
Cleaned with water and soap, without scrubbing with a brush	35	0		2	0		2	0	
Equipment never reused	35	2.9		2	0		2	0	
Other	35	51.4		2	50	35.4	2	0	
<b>Sterilization methods</b>									
Dry heat	35	2.9		2	100		2	0	
Autoclave	35	22.9		2	100		2	50	35.4
Boiling	35	0		2	0		2	0	
Steam	35	2.9	2.8	2	0		2	50	35.4
Chemical sterilization	35	2.9	2.8	2	0		2	0	
Processed away from facility	35	22.9	7.1	2	0		2	0	
Facility doesn't sterilize	35	0		2	0		2	0	
Other	35	45.7	8.4	2	0		2	0	



## Appendix A: SM2015 Indicators

**Table A.1** Indicator Matrix

Indicator values are displayed in the table below. Corresponding definitions for each indicator can be found in A.2.

SM2015 Indicators	N	%	SE
Number of health facilities with a mechanism in place for carrying out the patient satisfaction surveys	39	0	
Health facilities with continuous availability of supplies needed for child care, immunization and nutrition	37	0	
Diarrhea cases in children 0-59 months that were treated with ORS and zinc in the last two weeks	5	20	17.9
Children (12-59 months) who received two doses of deworming treatment in the last year	89	44.9	5.3
Children (0-23 months) with low weight-for-age managed according to norms in the last two years	73	2.7	1.9
Newborn enrolled for child health services within seven days of birth in the last two years	91	25.3	4.6
Health facilities that have supplies of modern family planning methods (oral, injectable, barrier, IUD)	19	73.7	10.1
Health facilities with continuous availability of supplies and equipment needed for antenatal and postpartum care	35	2.9	2.8
Women of reproductive age (15-49 years) who had their first antenatal care visit by a doctor or nurse before 12 weeks of gestation in the last two years	57	22.8	5.6
Number of institutional deliveries for which oxytocin was administered	15	60	12.6
Neonates who received care according to standards from medical personnel within the first 48 hours after birth in the last 2 years	43	25.6	6.7
Health facilities with continuous availability of supplies and equipment needed for emergency obstetric and neonatal care	4	0	
Women with obstetric complications (sepsis, hemorrhage, severe pre-eclampsia and eclampsia) managed according to the norm in the last two years	39	2.6	2.5
Neonates with complications (low birth weight, prematurity, birth asphyxia and sepsis) managed according to standards in the last two years	53	7.5	3.6
Proportion of women who received family planning (sterilization, IUD, condoms, injectable) after birth in the last two years	42	7.1	4.0

## A.2 Indicator Definitions

### 1. Number of health facilities with a mechanism in place for carrying out the patient satisfaction surveys:

Denominator:

Total number of health facilities in the sample.

Formula:

*All facilities:* health facility reports carrying out a patient satisfaction survey + questionnaire for patient satisfaction survey is observed + questionnaires is in an easily accessible place + pen/pencil is available + mailbox for filled questionnaire is available

### 2. Health facilities with continuous availability of supplies and equipment needed for child care, immunization and nutrition:

Denominator:

Total number of health facilities that offer child services and vaccines (if vaccines are stored) in the sample.

Formula:

*Ambulatory (mobile clinics and health posts):* Observed on the day of the survey: pediatric scale + measuring tape + height rod + stethoscope + pediatric stethoscope + oto-ophthalmoscope + hand lamp + examination table or stretcher + pentavalent/ (HepB + Hib + DPT) vaccine + polio vaccine + influenza vaccine + ferrous sulfate drops/multivitamin. No break in supply of the following inputs in the last three months (including the day of the survey): MMR vaccine + BCG vaccine + sachets of oral rehydration salt + albendazole/mebendazole + sulfate of zinc/gluconate of zinc.

*Ambulatory:* Observed on the day of the survey: pediatric scale + measuring tape + height rod + stethoscope + pediatric stethoscope + oto-ophthalmoscope + hand lamp + examination table or stretcher + pentavalent/ (HepB + Hib + DPT) vaccine + polio vaccine + influenza vaccine + ferrous sulfate drops/multivitamin. No break in supply of the following inputs in the last three months (including the day of the survey): MMR vaccine + BCG vaccine + sachets of oral rehydration salt + albendazole/mebendazole + sulfate of zinc/gluconate of zinc + antibiotics (amoxicillin/benzathine penicillin/erythromycin trimetropin sulfa/azithromycin).

*Basic:* Observed on the day of the survey: pediatric scale + measuring tape + height rod + pediatric blood pressure apparatus + neonatal tensiometer + pediatric stethoscope + hand lamp + binaural stethoscope for newborns + reflex hammer + negatoscope + pantoscope + examination table or stretcher + pentavalent/ (HepB + Hib + DPT) vaccine + polio vaccine + influenza vaccine + ferrous sulfate drops/multivitamin + antibiotics (benzathine penicillin/erythromycin trimetropin sulfa/azithromycin) + scalp vein set + Ringer's lactate/Hartmann's solution/saline solution. No break in supply of the following inputs in the last three months (including the day of the survey): MMR vaccine + BCG vaccine + sachets of oral rehydration salt + albendazole/mebendazole + sulfate of zinc/gluconate of zinc.

*Complete:* Observed on the day of the survey: pediatric scale + measuring tape + height rod + pediatric blood pressure apparatus + neonatal tensiometer + pediatric stethoscope + hand lamp + binaural

stethoscope for newborns + reflex hammer + negatoscope + pantoscope + examination table or stretcher + pentavalent/ (HepB + Hib + DPT) vaccine + polio vaccine + influenza vaccine + ferrous sulfate drops/multivitamin + antibiotics (benzathine penicillin/erythromycin trimetropin sulfa/azithromycin) + scalp vein set + Ringer's lactate/Hartmann's solution/saline solution. No break in supply of the following inputs in the last three months (including the day of the survey): MMR vaccine + BCG vaccine + sachets of oral rehydration salt + albendazole/mebendazole + sulfate of zinc/gluconate of zinc.

**3. Number of diarrhea cases in children 0-59 months that were treated with oral rehydration solution (ORS) and zinc in the last two weeks:**

Denominator:

Total number of diarrhea cases in children 0-59 months in the last two weeks in the sample.

Formula:

*Diarrhea medical record:* ORS and zinc was prescribed and recorded

**4. Children (12-59 months) who received two doses of de-worming treatment in the last year:**

Denominator:

Total number of deworming records in the sample.

Formula:

*Deworming medical record:* Two doses of albendazole/mebendazole were prescribed. The combination or only one drug is required.

**5. Children (0-23 months) with low weight-for-age managed according to norms in the last two years:**

Denominator:

Total number of records of children 0-23 months in the sample.

Formula:

*Ambulatory:* weight recorded in each visit + height/length recorded in each visit + charting of weight and height on take home cards + provide supplements + assess feeding practices of children at risk or with under nutrition + counsel mothers and caregivers on prevention of under nutrition + counsel mothers and caregivers on hygiene practices + counsel mothers and caregivers on how to prepare age-specific meals + counsel mothers and caregivers on how to feed the child

*Basic:* weight recorded in each visit + height/length recorded in each visit + charting of weight and height on take home cards + provide supplements + assess feeding practices of children at risk or with under nutrition + counsel mothers and caregivers on prevention of under nutrition + counsel mothers and caregivers on hygiene practices + counsel mothers and caregivers on how to prepare age-specific meals + counsel mothers and caregivers on how to feed the child + iron prescribed + dose or iron 2-4mg/kg/day + multivitamin is prescribed

*Complete:* weight recorded in each visit + height/length recorded in each visit + charting of weight and height on take home cards + provide supplements + assess feeding practices of children at risk or with under nutrition + counsel mothers and caregivers on prevention of under nutrition + counsel mothers and caregivers on hygiene practices + counsel mothers and caregivers on how to prepare age-specific meals + counsel mothers and caregivers on how to feed the child + iron prescribed + dose or iron 2-4mg/kg/day + multivitamin is prescribed

#### **6. Newborn enrolled for child health services within seven days of birth in the last two years:**

Denominator:

Total number of records of newborns in the sample.

Formula:

*Newborn medical record:* Date of birth – date of enrollment for child services <= 7 days

#### **7. Health facilities that have supplies of modern family planning methods (oral, injectable, barrier, IUD):**

Denominator:

Total number of health facilities that store family planning methods in the sample.

Formula:

*Ambulatory:* No break in supply of the following inputs in the last three months (including the day of the survey): male condom + any oral pill + any injectable

*Basic:* Observed on the day of the survey: IUD. No break in supply of the following inputs in the last three months (including the day of the survey): male condom + any oral pill + any injectable

*Complete:* Reported by the facility: trained staff in tubal ligation + trained staff to perform vasectomy. Observed on the day of the survey: IUD. No break in supply of the following inputs in the last three months (including the day of the survey): male condom + any oral pill + any injectable

#### **8. Health facilities with continuous availability of supplies and equipment needed for antenatal and postpartum care:**

Denominator:

Total number of health facilities that provide antenatal and postnatal services (and laboratory equipment for basic and complete facilities) in the sample.

Formula:

*Ambulatory:* Observed on the day of the survey: scale with measuring rod + gynecological examination table or stretcher + obstetric tape for CLAP + gestogram + swan neck lamp or pelvic examination lamp + sphygmomanometer (tensiometer) + stethoscope + fetoscope (Pinard stethoscope) + oral/axillary thermometer + reflex hammer + perinatal maternal medical history + perinatal maternal card + referral forms + stretcher sheets or robes for patients + nitrofurantoin + cephalexin + Ayre 's spatula (for

consideration of cervical cytology) / swabs + . No break in supply of the following inputs in the last three months (including the day of the survey): multivitamin/(iron + folic acid) + tetanus

*Basic:* Observed on the day of the survey: scale with measuring rod + gynecological examination table or stretcher + obstetric tape for CLAP/measuring tape + Instrument/equipment cart or stand + gestogram + swan neck lamp or pelvic examination lamp + sphygmomanometer (tensiometer) + stethoscope + set for IUD insertion + fetoscope (Pinard stethoscope) + oral/axillary thermometer + reflex hammer + perinatal maternal medical history + perinatal maternal card + referral forms + stretcher sheets or robes for patients + nitrofurantoin + cephalexin + Ayre's spatula (for consideration of cervical cytology) / swabs + rapid syphilis test/dark field microscope/equipment for enzyme immunoassay + rapid HIV/AIDS test/fluorescence microscope + urine protein strips/urinalysis equipment + blood glucose strips/glucose meter + HemoCue/automated cell counter + microcuvettes + pregnancy test kit + No break in supply of the following inputs in the last three months (including the day of the survey): multivitamin/(iron + folic acid) + tetanus + rapid HIV/AIDS test

*Complete:* Observed on the day of the survey: scale with measuring rod + gynecological examination table or stretcher + obstetric tape for CLAP/measuring tape + Instrument/equipment cart or stand + gestogram + swan neck lamp or pelvic examination lamp + sphygmomanometer (tensiometer) + stethoscope + set for IUD insertion + fetoscope (Pinard stethoscope) + oral/axillary thermometer + reflex hammer + perinatal maternal medical history + perinatal maternal card + referral forms + stretcher sheets or robes for patients + nitrofurantoin + cephalexin + Ayre's spatula (for consideration of cervical cytology) / swabs + dark field microscope + equipment for enzyme immunoassay + fluorescence microscope + urinalysis equipment + glucose meter + automated cell counter. No break in supply of the following inputs in the last three months (including the day of the survey): multivitamin/(iron + folic acid) + tetanus + rapid HIV/AIDS test

### 9. Women of reproductive age (15-49) who received their first prenatal visit by a doctor or nurse before 12 weeks gestation in the last two years:

Denominator:

Total number of antenatal care records in the sample.

Formula:

*Ambulatory:* First ANC visit performed by a doctor/nurse + (date of 1<sup>st</sup> ANC visit – date of last menstrual period = before 12 weeks gestation)

*Basic:* First ANC visit performed by a doctor/nurse + (date of 1<sup>st</sup> ANC visit – date of last menstrual period = before 12 weeks gestation)

*Complete:* First ANC visit performed by a doctor/nurse + (date of 1<sup>st</sup> ANC visit – date of last menstrual period = before 12 weeks gestation)

### 10. Number of institutional deliveries for which oxytocin was administered immediately after birth:

Denominator:

Total number of delivery records in the sample.

Formula:

*Basic:* Oxytocin/other uterotonic was administered after delivery

*Complete:* Oxytocin/other uterotonic was administered after delivery

**11. Neonates who received care according to standards from medical personnel within the first 48 hours after birth in the last 2 years:**

Denominator:

Total number of postpartum care records in the sample.

Formula:

*Basic:* Newborn was attended by doctor/nurse/midwife + all procedures and checkups recorded (administration of vitamin K + application of oxytetracycline ophthalmic prophylaxis/chloramphenicol + evaluation of malformation presence + skin color assessment + Apgar score + pulse + respiratory rate + weight + height)

*Complete:* Newborn was attended by doctor/nurse/midwife + all procedures and checkups recorded (administration of vitamin K + application of oxytetracycline ophthalmic prophylaxis/chloramphenicol + evaluation of malformation presence + skin color assessment + Apgar score + pulse + respiratory rate + weight + height)

**12. Health facilities with continuous availability of supplies and equipment needed for essential obstetric and neonatal care:**

Denominator:

Total number of basic and complete health facilities in the sample that provide emergency care.

Formula:

*Basic:* Observed on the day of the survey: blood pressure apparatus + stethoscope + Pinard stethoscope/Portable Doppler + autoclave/dry heat sterilizer + tank of oxygen/central oxygen supply + adult resuscitation bag + neonatal resuscitation bag + laryngoscope + uterine curettage kit + Dexamethasone ampoules/betamethasone + magnesium sulfate + antibiotics (penicillin crystals/IV ampicillin/amoxicillin) + amikacin + chloramphenicol + hydralazine ampoules 20mg + diazepam + oxytocin 5IU/10 IU/ergonovine maleate 0.2mg + Benzylpenicillin G procainic 800,000 UI + Doxycycline 100mg + clindamycin + cefotaxime + gentamicin ampoules 80mg + calcium gluconate + atropine 1mg/ml/epinephrine

*Complete:* Observed on the day of the survey: blood pressure apparatus + stethoscope + pediatric stethoscope/neonatal stethoscope + Pinard stethoscope/Portable Doppler + autoclave/dry heat sterilizer + tank of oxygen/central oxygen supply + adult resuscitation bag + neonatal resuscitation bag + laryngoscope + MVA kit + equipment for anesthesia + equipment for C-sections + Dexamethasone ampoules/betamethasone + magnesium sulfate + antibiotics (penicillin crystals/IV ampicillin/amoxicillin) + amikacin sulfate 100mg + chloramphenicol 1 gr IV/metronidazole 500mg IV + hydralazine 50 mg/hydralazine hydrochloride 20 mg IM-IV + diazepam 10mg IM\_IV/midazolam hydrochloride 5mg/5ml +

oxytocin 5IU/10 IU/ergonovine maleate 0.2mg + succinylcholine (suxamethonium chloride) + sevoflurane 100% Fco 250ml + nifedipine 10 mg + ceftriaxone 1gr IV + furosemide

#### 14. Women with obstetric complications (sepsis, hemorrhage, severe pre-eclampsia and eclampsia) managed according to the norm in the last two years

##### Denominator:

Total number of maternal complications records in the sample.

##### Formula:

##### Hemorrhage:

*Basic:* Observe the following in the record: vital signs checked (pulse + diastolic blood pressure + systolic blood pressure + respiratory rate + temperature) + oxytocin/other uterotonic administered

*Complete:* Observe the following in the record: vital signs checked (pulse + diastolic blood pressure + systolic blood pressure + respiratory rate + temperature) + lab tests performed (Ht + Hb + PT + PTT + platelet count) + oxytocin/other uterotonic administered

##### Pre-eclampsia:

*Basic:* Observe the following in the record: vital signs checked (systolic blood pressure + diastolic blood pressure + pulse + respiratory rate) + lab tests performed (urine protein) + medication was administered (magnesium sulfate + hydralazine/nifedipine (if diastolic blood pressure is >110))

*Complete:* Observe the following in the record: vital signs check (systolic blood pressure + diastolic blood pressure + pulse + respiratory rate + patellar reflex) + lab tests performed (urine protein + platelet count + aspartate aminotransferase + alanine aminotransferase + lactate dehydrogenase) + medication was administered (magnesium sulfate + hydralazine/nifedipine (if diastolic blood pressure is >110) + dexamethasone/betamethasone (if gestational age is 26-34 weeks)) + outcome of pregnancy (C-section/vaginal delivery/other)

##### Eclampsia:

*Basic:* Observe the following in the record: vital signs checked (systolic blood pressure + diastolic blood pressure + pulse + respiratory rate) + lab tests performed (urine protein) + medication was administered (magnesium sulfate + hydralazine/nifedipine (if diastolic blood pressure is >110))

*Complete:* Observe the following in the record: vital signs check (systolic blood pressure + diastolic blood pressure + pulse + respiratory rate + patellar reflex) + lab tests performed (urine protein + platelet count + aspartate aminotransferase + alanine aminotransferase + lactate dehydrogenase) + medication was administered (magnesium sulfate + hydralazine/nifedipine (if diastolic blood pressure is >110) + dexamethasone/betamethasone (if gestational age is 26-34 weeks)) + outcome of pregnancy (C-section/vaginal delivery/other)

##### Sepsis:

*Basic:* temperature + pulse + systolic blood pressure + diastolic blood pressure + antibiotic administration

*Complete:* temperature + pulse + systolic blood pressure + diastolic blood pressure + antibiotic

administration

**15. Neonates with complications (low birth weight, prematurity, birth asphyxia and sepsis) managed according to standards in hospitals in the last two years**

Denominator:

Total number of neonatal complication records in the sample.

Formula:

Low birth weight:

*Basic:* Observe the following in the record: pulse + respiratory rate + oxygen saturation + Silverman score + blood glucose level + baby was evaluated by a doctor at admission

*Complete:* Observe the following in the record: pulse + respiratory rate + oxygen saturation + Silverman score + blood glucose level + baby was evaluated by a doctor at admission

Prematurity:

*Basic:* Observe the following in the record: pulse + respiratory rate + oxygen saturation + Silverman score + blood glucose level + baby was evaluated by a doctor at admission

*Complete:* Observe the following in the record: pulse + respiratory rate + oxygen saturation + Silverman score + blood glucose level + baby was evaluated by a doctor at admission

Asphyxia:

*Basic:* Observe the following in the record: temperature + pulse + respiratory rate + Apgar score in 1 minute + Apgar score in 5 minutes + blood glucose level + Hb + antibiotic treatment + baby was evaluated by a doctor at admission

*Complete:* Observe the following in the record: temperature + pulse + respiratory rate + oxygen saturation + Silverman score + blood glucose level + Hb + c-reactive protein + erythrocyte sedimentation rate + chest radiograph + antibiotic treatment + baby was evaluated by a doctor at admission

Sepsis:

*Basic:* Observe the following in the record: temperature + pulse + leukocyte count + baby was evaluated by a doctor at admission + treatment with antibiotics

*Complete:* Observe the following in the record: temperature + pulse + leukocyte count + c-reactive protein + erythrocyte sedimentation rate + baby was evaluated by a doctor at admission + treatment with antibiotics

**16. Proportion of women who received family planning (sterilization, IUD, condoms, injectable) after birth in the last two years for monitoring purposes:**

Denominator:

Total number of postpartum care records in the sample.



Formula:

*Basic:* Woman received contraception + contraception method recorded was one of the following:  
condom/injectable/IUD/sterilization

*Complete:* Woman received contraception + contraception method recorded was one of the following:  
condom/injectable/IUD/sterilization