# SM2015 – Guatemala

# 18-Month Health Facility

# San Marcos and Huehuetenango

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**Final Report**

**December 2014**

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This Final Report on the SM2015-Guatemala 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.

**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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# 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 percent of the population in the region. Funding will focus on supply and demand-side interventions, including changes in policy, evidence-based interventions, the expansion of proven and cost-effective healthcare packages, and the delivery of 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 will focus 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 Guatemala, data collection is taking place at households and health facilities in intervention and control 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 in intervention areas), and again at 36 and 54 months later. 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 a household survey) components of the overall data collection method employed in the initiative. Twining 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 will capture changes made by interventions at the level of the health services access point, the health facility, and predict 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 2014 Guatemala health facility survey

The health facility survey includes 3 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 3 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 is 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 at all times of the interview. CAPI supports skip patterns, inter-question answer consistency, and data entry ranges. The aim of introducing CAPI to the field was 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, a sample of 60 health facilities was selected from a list of all facilities serving the seventeen intervention municipalities in San Marcos and Huehuetenango. This list was constructed according to a referral network outlined by the Ministry of Health. All complete and basic facilities serving SM2015 areas were included in the sample, due to the small number of these facilities operating in the area. Among ambulatory facilities, 50% of the remaining sample was drawn randomly from the list of ambulatory health facilities located in SM2015 intervention areas that were included in the baseline evaluation. The other 50% were drawn from ambulatory facilities in SM2015 areas that were not visited at baseline. A simple random sample was drawn from each ambulatory strata to meet the quota of 60 intervention facilities.

For the medical record review, a systematic sampling method was used to select complications and delivery records in each facility. Records for specific conditions (maternal and neonatal complications, deliveries, antenatal and postpartum care, and child care) were selected according to a quota set considering the Essential Obstetric and Neonatal Care (EONC) level that each facility provides.

## 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 Guatemala June 30 – July 4 2014. The 6 surveyors had medical backgrounds (physicians and nurses) and underwent four days of training. The training included an introduction to the initiative, proper conduct of the survey, in-depth review of the instrument, and hands-on training with the CAPI software. Training was followed by a two-day pilot of all components of the survey at currently operating health facilities.

### 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 implementation 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 IHME. IHME monitored collected data on a continuous basis and provided feedback. Suggestions, surveyor feedback, and any modifications were incorporated into the health facility instruments and readily transmitted to the field.

### 1.5.4 Data analysis and report writing

Ongoing data analysis was done at IHME and new data was continuously incorporated. Analysis was done using STATA version 13.1. Performance indicators were calculated at IHME following the indicator definitions provided by IDB. A mid-survey report was submitted to IDB with estimates on key performance indicators. This final 18-month report includes information from facilities in intervention areas and comparisons to baseline intervention-area numbers. An appendix showing updated baseline performance and monitoring indicators is included (Appendix A).

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

The main body of this report refers to facilities surveyed for the 18-month evaluation in intervention areas only, and compares intervention-area data at the 18-month follow-up to intervention-area data from the baseline evaluation when detailing performance indicators. Appendix A compares performance and monitoring indicator values from baseline to follow-up.

## 2.1 General description of the facility

### 2.1.1 Type of health facility

A total of 60 facilities were included in the 18-month evaluation: 41 ambulatory health units, 15 basic health units, and 4 complete health units. The classification of ambulatory includes health centers, community health centers, health posts and other minimal health units. Basic level facilities include permanent health care centers (CAP) and comprehensive maternal and child health care centers (CAIMI). All hospitals are classified as complete level facilities. These health units are further broken down by facility classification and geographical representation in Tables 2.1.1 and 2.1.2.

**Table 2.1.1** Facilities by EONC level

| | BASELINE | 18-MONTH |
|---|---|---|
| Ambulatory | 47 | 41 |
| Basic | 13 | 15 |
| Complete | 4 | 4 |
| Total | 64 | 60 |

**Table 2.1.2** Facilities by facility type

| | BASELINE |
|---|---|
| Centro comunitario de Salud / Puesto de Salud y Unidad mínima de Salud | 46 |
| Centro de salud | 1 |
| CAP/CAIMI | 13 |
| Hospital | 4 |
| Total | 64 |
| | 18-MONTH |
| Centro comunitario | 1 |
| Centro de salud | 1 |
| Puesto de salud | 21 |
| Unidad mínima de Salud | 9 |
| Centro de convergencia | 9 |
| CAP | 14 |
| CAIMI | 1 |
| Hospital | 4 |
| Total | 60 |

### 2.1.3 Geographical representation

Facilities surveyed for the 18-month evaluation were located in 20 municipalities in a total of 2 departments. Table 2.1.3 includes facilities in intervention areas, as well as referral hospitals in three additional municipalities that receive patients from intervention areas.

**Table 2.1.3** Geographical representation

| Department | Municipality* | No. of facilities |
|---|---|---|
| HUEHUETENANGO | Colotenango | 2 |
| | Huehuetenango | 1 |
| | San Gaspar Ixchil | 2 |
| | San Idelfonso Ixtahuacan | 3 |
| | San Juan Atitan | 2 |
| | San Mateo Ixtatan | 4 |
| | San Miguel Acatan | 2 |
| | San Pedro Necta | 2 |
| | San Rafael Petzal | 1 |
| | San Sebastian Huehuetenango | 1 |
| | Santa Barbara | 3 |
| | Todos Santos Cuchumatan | 2 |
| | TOTAL | 25 |
| SAN MARCOS | Comitancillo | 5 |
| | Concepcion Tutuapa | 7 |
| | Ixchiguan | 9 |
| | Malacatan | 1 |
| | San Jose Ojetenam | 5 |
| | San Marcos | 1 |
| | Sibinal | 4 |
| | Tajumulco | 3 |
| | TOTAL | 35 |

*Intervention area covers 17 municipalities; including referral hospitals, data were captured in 20 municipalities

### 2.1.4 Medical record extraction

The health facility survey included a review of 2,304 medical records. The number and type of medical records reviewed varied depending on the type of facility and the services it provided. Records of antenatal care and child growth charts were evaluated in all facilities. In addition, records of delivery, postpartum care, maternal complications and neonatal complications were reviewed at the basic and complete level of facility.

**Table 2.1.4** Number of medical records by facility classification (EONC level)

| **Medical records** | Ambulatory | Basic | Complete | Total |
|---|---|---|---|---|
| Antenatal care | 420 | 151 | 40 | 611 |
| Delivery | 0 | 218 | 88 | 306 |
| Postpartum | 0 | 193 | 94 | 287 |
| Maternal complications | 0 | 168 | 110 | 278 |
| Neonatal complications | 0 | 133 | 114 | 247 |
| Growth | 419 | 146 | 10 | 575 |
| Total | 839 | 1009 | 456 | 2304 |

### 2.1.5 Referrals

In response to the question, "Do you usually receive referred patients from another health facility?" 24.4% of ambulatory facilities and 89.5% of basic and complete facilities reported receiving referred patients from other facilities. All facilities reported sending or referring patients to other health units.

### 2.1.6 Governing authority

All health facilities were public institutions governed by the Ministry of Health (Ministerio de Salud).

## 2.2 Basic infrastructure

### 2.2.1 Electricity and Water

All complete health units, 92.7% of ambulatory units, and 93.3% of basic health units had functional electricity. Of the ambulatory health units that had functional electricity, 62.2% used a central electricity supply and 21.6% used a private supply. None of the evaluated facilities owned an in-facility generator. Those facilities that reported using an "other source" of electricity tended to name a local company or other non-municipal source of electricity.

Of all ambulatory facilities, the majority (92.7%) had water piped into the facility. Most basic and facilities reported having water piped into the facility (80%), while the majority of complete facilities used a private well for water (75%).

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 | 41 | 92.7 | 4.1 | 15 | 93.3 | 6.4 | 4 | 100 | |
| Source of electricity | | | | | | | | | |
| Central supply (Comisión Federal de Electricidad) | 37 | 62.2 | 8.0 | 14 | 57.1 | 13.2 | 4 | 75 | 21.6 |
| Private supply | 37 | 21.6 | 6.8 | 14 | 21.4 | 11.0 | 4 | 50 | 25.0 |
| In-facility generator | 37 | 0 | | 14 | 0 | | 4 | 0 | |
| Solar generator | 37 | 2.7 | 2.7 | 14 | 0 | | 4 | 0 | |
| Other source | 37 | 24.3 | 7.1 | 14 | 42.9 | 13.2 | 4 | 25 | 21.6 |
| DK/ DR | 1 | | | 0 | | | 0 | | |
| Source of water | | | | | | | | | |
| Piped into facility | 41 | 92.7 | 4.1 | 15 | 80 | 10.3 | 4 | 50 | 25.0 |
| Public well | 41 | 2.4 | 2.4 | 15 | 0 | | 4 | 0 | |
| Facility well | 41 | 0 | | 15 | 6.7 | 6.4 | 4 | 75 | 21.6 |
| Unprotected well | 41 | 0 | | 15 | 0 | | 4 | 0 | |
| Hand pump | 41 | 0 | | 15 | 0 | | 4 | 0 | |
| Bottled water | 41 | 0 | | 15 | 6.7 | 6.4 | 4 | 0 | |
| Tanker truck | 41 | 2.4 | 2.4 | 15 | 6.7 | 6.4 | 4 | 0 | |
| Rain water | 41 | 0 | | 15 | 0 | | 4 | 0 | |
| Other | 41 | 14.6 | 5.5 | 15 | 13.3 | 8.8 | 4 | 0 | |
| DK/ DR | 0 | | | 0 | | | 0 | | |

### 2.2.2 Internet access

Only 21.7% of facilities had access to the internet. More specifically, 2.4%, 53.3%, and 100% of ambulatory, basic, and complete facilities respectively had internet access.

### 2.2.3 Report generation

CAP and CAIMI health facilities were evaluated on their ability to access data and generate regular reports on immunization as well as maternal, newborn, and child care. During the observation checklist component of the survey, interviewers observed the presence of graphs or analysis on maternal and neonatal health topics in designated situational rooms. Municipal Health Districts meet the indicator if they have available at least one graph or analysis on maternal care and neonatal care and at least one graph or analysis on infant care. In total, 92.9% of Municipal Health Districts met the requirements for this indicator.

**Table 2.2.3** Municipal Health District report generation

| BASIC EONC | | | |
|---|---|---|---|
| | 18-MONTH | | |
| | N | % | SE |
| At least one graph or analysis on infant care | 14 | 92.9 | 6.9 |
| Graph or analysis on vaccination coverage | 14 | 92.9 | 6.9 |
| Graph or analysis on micronutrient supplementation | 14 | 78.6 | 11 |
| At least one graph or analysis on maternal and neonatal care | 14 | 100 | |
| Graph or analysis on distribution of family planning methods | 14 | 100 | |
| Graph or analysis on coverage of prenatal care | 14 | 85.7 | 9.4 |
| Graph or analysis on coverage of birth | 14 | 85.7 | 9.4 |
| Graph or analysis on coverage of postpartum care | 14 | 64.3 | 12.8 |
| Graph or analysis on community visits | 14 | 57.1 | 13.2 |

## 2.3 Personnel

### 2.3.1 Personnel in ambulatory units

Ambulatory health units are further categorized by those that do and those that do not have a doctor on staff. The following table (Table 2.3.1) details the personnel composition in ambulatory health facilities. Personnel are limited in health units without a doctor, with only health promoters, nurses, auxiliary nurses, and midwives reported. The mean represents the average number of personnel reported per category. On average, there were 0.1 health promoters, 0.3 nurses, 1.7 auxiliary nurses, and 0.9 midwives per ambulatory facility without a doctor.

Ambulatory health units that do have a doctor report a greater variety of personnel and, in general, a larger number of staff working at the facility. On average there were 1.7 general physicians, 1.7 nurses, 5.7 auxiliary nurses, 0.7 nutritionists, 0.3 laboratory technicians, and 0.7 social workers per ambulatory facility with a doctor.

**Table 2.3.1** Personnel composition in ambulatory facilities

| Personnel type | Ambulatory without doctor | | | Ambulatory with doctor | | |
|---|---|---|---|---|---|---|
| | N | mean | SE | N | mean | SE |
| General physician | 38 | 0 | | 3 | 1.7 | 1.1 |
| Pediatrician | 38 | 0 | | 3 | 0 | |
| Nutritionist | 38 | 0 | 0.2 | 3 | 0.7 | 1.1 |
| Pharmacist | 38 | 0 | | 3 | 0 | |
| Nurse | 38 | 0.3 | 0.5 | 3 | 1.7 | 1.1 |
| Auxiliary nurse | 38 | 1.7 | 1.1 | 3 | 5.7 | 3.8 |
| Midwife | 38 | 0.9 | 2.3 | 3 | 0 | |
| Social worker | 38 | 0 | | 3 | 0.7 | 0.6 |
| Laboratory technician | 38 | 0 | | 3 | 0.3 | 0.6 |
| Health promoter | 38 | 0.1 | 0.3 | 3 | 0 | |
| Other | 38 | 0.9 | 3.3 | 3 | 0.3 | 0.6 |

### 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).

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

| Personnel type | Basic | | | Complete | | |
|---|---|---|---|---|---|---|
| | N | mean | SE | N | mean | SE |
| General physician | 15 | 2.6 | 1.5 | 4 | 13.8 | 7.2 |
| Pediatrician | 15 | 0 | | 4 | 4 | 2.5 |
| Nutritionist | 15 | 0.6 | 0.5 | 4 | 1 | 0.8 |
| Pharmacist | 15 | 0.1 | 0.3 | 4 | 0.8 | 0.5 |
| Nurse | 15 | 3.7 | 1.3 | 4 | 24.8 | 13.9 |
| Auxiliary nurse | 15 | 12.1 | 3.4 | 4 | 96.5 | 54.1 |
| Midwife | 15 | 0 | | 4 | 0.3 | 0.5 |
| Social worker | 15 | 0.5 | 0.5 | 4 | 1.5 | 0.6 |
| Laboratory technician | 15 | 0.7 | 0.9 | 4 | 8.8 | 5.1 |
| Health promoter | 15 | 0.3 | 1.0 | 4 | 4.8 | 9.5 |
| Internist | 15 | 0 | | 4 | 2 | 1.1 |
| Gynecologist | 15 | 0.3 | 1.0 | 4 | 5.8 | 1.7 |
| Surgeon | 15 | 0 | | 4 | 3.8 | 3.2 |
| Anesthesiologist | 15 | 0.2 | 0.8 | 4 | 1.5 | 1.7 |
| Emergency medical technician | 15 | 0 | | 4 | 1 | 2.0 |
| Radiology technician | 15 | 0 | | 4 | 4.8 | 1.0 |
| Ambulance driver/polyvalent | 15 | 2.1 | 0.8 | 4 | 5 | 0.8 |
| Other specialties | 15 | 0.5 | 1.1 | 4 | 0.5 | 0.6 |

# Chapter 3 CHILD HEALTH

### 3.1 Child services offered – a background

This chapter summarizes key indicators related to child health care. In the questionnaire component of the survey, facility representatives were asked about service provision and logistics of ordering and receiving supplies. In the observation component, interviewers observed the setting of the room in which child services are provided, functionality of equipment, stock of pharmacy inputs, stock of vaccines, and related educational materials. All health units report child health service provision, with the exception of one hospital.

**Table 3.1.1** Child health care services provision

| | Ambulatory | | | Basic | | | Complete | | |
|---|---|---|---|---|---|---|---|---|---|
| | N | % | SE | N | % | SE | N | % | SE |
| Unit offers child services | 41 | 100 | | 15 | 100 | | 4 | 75 | 21.6 |
| Unit vaccinates children under 5 | 41 | 100 | | 15 | 100 | | 4 | 50 | 25 |

### 3.2 Composite indicator for child care and nutrition

According to the indicator related to the continuous availability of supplies and equipment needed for child care, facilities that offer child services are evaluated for observed and functional equipment, continuous availability of pharmacy inputs, and continuous availability of vaccines (in facilities that store vaccines). Table 3.2.1 presents these three broad components of the indicator. Equipment and pharmacy inputs for child care will be further detailed in sections 3.3 and 3.4. Vaccines will be further detailed in chapter 4.

**Table 3.2.1** Continuous availability of supplies and equipment needed for child care

| | Ambulatory | | | Basic | | | Complete | | |
|---|---|---|---|---|---|---|---|---|---|
| | N | % | SE | N | % | SE | N | % | SE |
| Observed and functional equipment | 37 | 94.6 | 3.7 | 14 | 14.3 | 9.4 | 4 | 25 | 21.6 |
| All pharmacy inputs observed on the day of the survey | 37 | 73 | 7.3 | 14 | 78.6 | 11.0 | 4 | 50 | 25 |
| No stock out of pharmacy inputs in the previous 3 months | 37 | 56.8 | 8.1 | 14 | 57.1 | 13.2 | 4 | 0 | |
| Continuous availability of vaccines* | 29 | 3.4 | 3.4 | 13 | 30.8 | 12.8 | 2 | 0 | |
| Meets all criteria listed above | 37 | 5.4 | 3.7 | 14 | 0 | | 4 | 0 | |

*Only applicable if facility stores vaccines

### 3.3 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 3.3.1 and 3.3.2) 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.

### 3.3.1 Child health care equipment in ambulatory facilities

According to indicator 7010, ambulatory facilities should have at least one observed and functional of the following equipment: standing balance/scale for children, tallimeter, stethoscope, and thermometer. Ambulatory facilities with a doctor were also required to have a pediatric stethoscope. In total, 94.6% of ambulatory facilities met these requirements.

**Table 3.3.1a** Child health care equipment observed and functional in ambulatory facilities without a doctor

| | AMBULATORY WITHOUT DOCTOR | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| | N | % | SE | N | % | SE |
| Standing balance/scale for children | 42 | 61.9 | 7.5 | 35 | 100 | |
| Tallimeter | 42 | 54.8 | 7.7 | 35 | 100 | |
| Stethoscope | 42 | 26.2 | 6.8 | 35 | 100 | |
| Oral/Axillary thermometer | 42 | 85.7 | 5.4 | 35 | 94.3 | 3.9 |
| All equipment observed and functional | 42 | 4.8 | 3.3 | 35 | 94.3 | 3.9 |

**Table 3.3.1b** Child health care equipment observed and functional in ambulatory facilities with a doctor

| | AMBULATORY WITH DOCTOR | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| | N | % | SE | N | % | SE |
| Standing balance/scale for children | 5 | 60 | 21.9 | 2 | 100 | |
| Tallimeter | 5 | 60 | 21.9 | 2 | 100 | |
| Stethoscope | 5 | 60 | 21.9 | 2 | 100 | |
| Pediatric stethoscope | 1* | 0 | | 2 | 100 | |
| Oral/Axillary thermometer | 5 | 100 | | 2 | 100 | |
| All equipment observed and functional | 5 | 60 | 21.9 | 2 | 100 | |

*Data missing for pediatric stethoscope in 4 baseline facilities

### 3.3.2 Child health care equipment in basic and complete facilities

At basic and complete levels, facilities were considered to have met the equipment component of the child services indicator if they had at least one observed and functional of the following equipment: standing balance/scale for children, pediatric balance/scale, tallimeter, pediatric tensiometer, and pediatric stethoscope. Only six basic facilities had a pediatric stethoscope or pediatric tensiometer, but this is a significant increase from the baseline evaluation.

While facilities were generally much better equipped at the 18-month evaluation, the overall percentage of facilities that met all requirements is driven down by the fact that each health unit tended to be missing a different input. This means that the low percentage meeting the indicator cannot be attributed to the lack of any individual input.

**Table 3.3.2a** Child health care equipment observed and functional in basic level health facilities

| | BASIC EONC LEVEL | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| | N | % | SE | N | % | SE |
| Standing balance/scale for children | 12 | 91.7 | 8 | 14 | 100 | |
| Pediatric scale* | 12 | 100 | | 7 | 100 | |
| Tallimeter | 12 | 66.7 | 13.6 | 14 | 100 | |
| Pediatric tensiometer | 12 | 8.3 | 8 | 14 | 42.9 | 13.2 |
| Pediatric stethoscope | 12 | 8.3 | 8 | 14 | 42.9 | 13.2 |
| All equipment observed and functional | 12 | 8.3 | 8 | 14 | 14.3 | 9.4 |

*Pediatric scale not included in calculation at baseline. Due to program error, data missing in 7 facilities at follow-up. Indicator value is not affected by this, as another required input is missing in each of these 7 facilities

**Table 3.3.2b** Child health care equipment observed and functional in complete level health facilities

| | COMPLETE EONC LEVEL | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| | N | % | SE | N | % | SE |
| Standing balance or scale for children | 4 | 100 | | 4 | 100 | |
| Pediatric scale* | 4 | 100 | | 2 | 100 | |
| Tallimeter | 4 | 75 | 21.7 | 4 | 100 | |
| Pediatric tensiometer | 4 | 25 | 21.7 | 4 | 50 | 25 |
| Pediatric stethoscope | 4 | 50 | 25 | 4 | 25 | 21.7 |
| All equipment observed and functional | 4 | 25 | 21.7 | 4 | 25 | 21.7 |

*Pediatric scale not included in calculation at baseline. Due to program error, data missing in 2 facilities at follow-up. Indicator value is not affected by this, as another required input is missing in each of these 2 facilities

### 3.4 Important drugs and supplements

Interviewers also observed the availability and stock of important drugs and supplements used for basic child health care in the pharmacy section, namely packets or envelopes of oral rehydration salts (ORS), ferrous sulfate drops/micronutrients, zinc sulfate/zinc gluconate, and albendazole/mebendazole.

In order to measure continuous availability of pharmacy inputs needed for basic child care, interviewers were instructed to check the stock of certain drugs for the previous three months in facilities that had all required drugs on the day of the survey. The stocks of oral rehydration packets/envelopes, abendazole, mebendazole, and zinc were checked at each facility level.

At the 18-month evaluation, most ambulatory facilities without a doctor had availability of ferrous sulfate (97.1%), ORS (91.4%), and either albendazole or mebendazole (97.1%) on the day of the survey. When taking into account the availability of these pharmacy inputs in the previous three months, over one-half of ambulatory facilities without a doctor surveyed had continuous availability of ORS, ferrous sulfate, zinc, and albendazole/ mebendazole. All ambulatory facilities with a doctor had all drugs

available on the day of the survey, and all had continuous availability in the previous three months.

**Table 3.4.1a** Child health care observed drugs and supplements in ambulatory facilities without a doctor

| | AMBULATORY WITHOUT DOCTOR | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| **Availability on the day of the survey** | N | % | SE | N | % | SE |
| Packets/Envelopes of oral rehydration salt | 42 | 78.6 | 6.3 | 35 | 91.4 | 4.7 |
| Ferrous sulfate drops/Micronutrients* | 42 | 76.2 | 6.6 | 35 | 97.1 | 2.8 |
| Zinc sulfate/Zinc gluconate | 42 | 100 | | 35 | 77.1 | 7.1 |
| Albendazole/Mebendazole | 42 | 57.1 | 7.6 | 35 | 97.1 | 2.8 |
| All drugs available on the day of the survey | 42 | 35.7 | 7.4 | 35 | 71.4 | 7.6 |
| All drugs available with no stockouts in past three months** | 42 | 33.3 | 7.3 | 35 | 57.1 | 8.4 |
| *At baseline, micronutrients not considered | | | | | | |
| **At baseline, stock outs of ORS, albendazole/mebendazole, and zinc considered | | | | | | |

**Table 3.4.1b** Child health care observed drugs and supplements in ambulatory facilities with a doctor

| | AMBULATORY WITH DOCTOR | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| **Availability on the day of the survey** | N | % | SE | N | % | SE |
| Packets / Envelopes of oral rehydration salt | 5 | 100 | | 2 | 100 | |
| Ferrous sulfate drops / Micronutrients* | 5 | 60 | 21.9 | 2 | 100 | |
| Zinc sulfate / Zinc gluconate | 5 | 100 | | 2 | 100 | |
| Albendazole / Mebendazole | 5 | 60 | 21.9 | 2 | 100 | |
| Antibiotics** | 1 | 100 | | 2 | 100 | |
| All drugs available on the day of the survey | 5 | 60 | 21.9 | 2 | 100 | |
| All drugs available with no stockouts in past three months*** | 5 | 60 | 21.9 | 2 | 100 | |
| *At baseline, micronutrients not considered | | | | | | |
| **Erythromicin, amoxicilin, or pencilin benzathine; data missing in 4 facilities | | | | | | |
| ***At baseline, stock outs of ORS, albendazole/mebendazole, and zinc considered | | | | | | |

In basic facilities, there was a general increase in the availability of drugs and supplements for child care on the day of the survey, compared to baseline. Ferrous sulfate/micronutrients, ORS, and albendazole/ mebendazole were not observed in all facilities. When considering the stock out in the past three months, 57.1% of basic facilities met necessary availability.

Only one-half of complete-level facilities had present at the time of the survey the drugs and supplements for child care. Ferrous sulfate/micronutrients, zinc sulfate/zinc gluconate, and albendazole/mebendazole were not observed in all facilities. When considering the stock out in the past three months, no complete facilities met necessary availability.

**Table 3.4.2a** Child health care observed drugs and supplements in basic facilities

| | BASIC EONC LEVEL | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| **Availability on the day of the survey** | N | % | SE | N | % | SE |
| Packets / Envelopes of oral rehydration salt | 12 | 100 | | 14 | 92.9 | 6.9 |
| Ferrous sulfate drops/ Micronutrients* | 12 | 83.3 | 10.8 | 14 | 92.9 | 6.9 |
| Zinc sulfate / Zinc gluconate | 12 | 100 | | 14 | 100 | |
| Albendazole / Mebendazole | 12 | 75 | 12.5 | 14 | 92.9 | 6.9 |
| Antibiotics** | 12 | 100 | | 14 | 100 | |
| Ringer lactate/ Hartman solution/ Saline solution | 12 | 100 | | 14 | 100 | |
| All drugs available on the day of the survey | 12 | 58.3 | 14.2 | 14 | 78.6 | 11 |
| All drugs available with no stockouts in past three months*** | 12 | 50 | 14.4 | 14 | 57.1 | 13.2 |
| *At baseline, micronutrients not considered | | | | | | |
| **Erythromicin, amoxicilin, or pencilin benzathine | | | | | | |
| ***At baseline, stock outs of ORS, albendazol/mebendazol, and zinc considered | | | | | | |

**Table 3.4.2b** Child health care observed drugs and supplements in basic and complete units

| | COMPLETE EONC LEVEL | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| **Availability on the day of the survey** | N | % | SE | N | % | SE |
| Packets / Envelopes of oral rehydration salt | 4 | 100 | | 4 | 100 | |
| Ferrous sulfate drops / Micronutrients* | 4 | 50 | 25 | 4 | 75 | 21.7 |
| Zinc sulfate / Zinc gluconate | 4 | 100 | | 4 | 75 | 21.7 |
| Albendazole / Mebendazole | 4 | 100 | | 4 | 75 | 21.7 |
| Antibiotics** | 4 | 100 | | 4 | 100 | |
| Ringer lactate/ Hartman solution/ Saline solution/ Dextrose | 4 | 100 | | 4 | 100 | |
| All drugs available on the day of the survey | 4 | 50 | 25 | 4 | 50 | 25 |
| All drugs available with no stockouts in past three months*** | 4 | 25 | 21.7 | 4 | 0 | |
| *At baseline, micronutrients not considered | | | | | | |
| **Erythromicin, amoxicilin, pencilin benzathine | | | | | | |
| ***At baseline, stock outs of ORS, albendazol/mebendazol, and zinc considered | | | | | | |

### 3.5 Education material

Table 3.5.1 lists some educational material observed either as cards handed to the caretaker or as illustration of disease management hung on the unit walls.

**Table 3.5.1** Child health education and awareness

| Education material | Ambulatory | | | Basic | | | Complete | | |
|---|---|---|---|---|---|---|---|---|---|
| | N | % | SE | N | % | SE | N | % | SE |
| Printed materials on child growth and child development | 37 | 78.4 | 6.8 | 14 | 42.9 | 13.2 | 4 | 75 | 21.6 |
| Printed materials on danger signs and symptoms in children | 37 | 83.8 | 6.1 | 14 | 57.1 | 13.2 | 4 | 75 | 21.6 |

### 3.6 Child growth monitoring

According to the indicator related to child growth monitoring, records of children aged 0-23 months should have record of weight and height measurements and counseling during their most recent visit in 2014. In the medical record review portion of the survey, records of children 0-23 months were selected systematically from the book "Weight and Height" Growth Monitoring (Monitoreo del Crecimiento "Peso y Longitud") and reviewed.

Facilities generally performed extremely well on this indicator, with almost all records containing information about the child's height and weight, and most records containing information about counseling given during the child's visit (Tables 3.6.1a-3.6.1c).

**Table 3.6.1a** Child growth monitoring in ambulatory facilities

| AMBULATORY EONC | | | |
|---|---|---|---|
| | 18-MONTH | | |
| | N | % | SE |
| Weight recorded | 412 | 99.8 | 0.2 |
| Height recorded | 412 | 98.8 | 0.5 |
| Counseling recorded | 412 | 78.6 | 2 |
| Indicator 8610 | 412 | 78.4 | 2 |

**Table 3.6.1b** Child growth monitoring in basic facilities

| BASIC EONC | | | |
|---|---|---|---|
| | 18-MONTH | | |
| | N | % | SE |
| Weight recorded | 146 | 100 | |
| Height recorded | 146 | 100 | |
| Counseling recorded | 146 | 88.4 | 2.7 |
| Indicator 8610 | 146 | 88.4 | 2.7 |

**Table 3.6.1c** Child growth monitoring in complete facilities

| COMPLETE EONC | | | |
|---|---|---|---|
| | 18-MONTH | | |
| | N | % | SE |
| Weight recorded | 10 | 100 | |
| Height recorded | 10 | 100 | |
| Counseling recorded | 10 | 100 | |
| Indicator 8610 | 10 | 100 | |

# Chapter 4 VACCINES

## 4.1 Vaccination services

When asked about vaccination services, all health facilities reported that they do vaccinate children, with the exception of two hospitals. Interviewers observed and recorded the setting of the room used for immunization; while most basic and complete level facilities provide a private room with visual and auditory privacy, 12.2% of ambulatory health facilities offer no privacy during immunization (Table 4.1.1).

**Table 4.1.1** Vaccination services

| | Ambulatory | | | Basic | | | Complete | | |
|---|---|---|---|---|---|---|---|---|---|
| | N | % | SE | N | % | SE | N | % | SE |
| Unit vaccinates children under 5 | 41 | 100 | | 15 | 100 | | 4 | 50 | 25 |
| Immunization room | | | | | | | | | |
| Private room with visual and auditory privacy | 41 | 80.5 | 6.2 | 15 | 93.3 | 6.4 | 4 | 50 | 25 |
| No privacy | 41 | 12.2 | 5.1 | 15 | 0 | | 4 | 0 | |
| Don't provide such services | 41 | 7.3 | 4.1 | 15 | 6.7 | 6.4 | 4 | 50 | 25 |

## 4.2 Vaccine logistics

### 4.2.1 Storage

In the questionnaire component of the survey, interviewers asked facility representatives about vaccine storage. Among ambulatory facilities, three quarters of the units store vaccines in facility, while 24.4% pick up vaccines from other facilities. All basic and complete facilities report storing vaccines within the facility (Table 4.2.1).

**Table 4.2.1** Vaccine storage

| | Ambulatory | | | Basic | | | Complete | | |
|---|---|---|---|---|---|---|---|---|---|
| | N | % | SE | N | % | SE | N | % | SE |
| Storage | | | | | | | | | |
| Stored in facility | 41 | 75.6 | 6.7 | 15 | 100 | | 3 | 100 | |
| Picked up from another facility | 41 | 24.4 | 6.7 | 15 | 0 | | 3 | 0 | |
| Delivered when services are being provided | 41 | 0 | | 15 | 0 | | 3 | 0 | |
| None of the above | 41 | 0 | | 15 | 0 | | 3 | 0 | |

### 4.2.2 Demand and supply

Facilities that store vaccines were asked logistical questions about the supply and demand of vaccines. The majority of ambulatory and basic facilities reported self-determination in ordering vaccine supplies, and ordering the same quantity each time. Responses from facility representatives about the time it takes to receive orders and whether they received the correct quantity are further detailed in Table

4.2.2.

**Table 4.2.2** Vaccine supply and demand

| | Ambulatory | | | Basic | | | Complete | | |
|---|---|---|---|---|---|---|---|---|---|
| | N | % | SE | N | % | SE | N | % | SE |
| Ordering Strategy | | | | | | | | | |
| Determines own needs | 31 | 87.1 | 6.0 | 15 | 100 | | 3 | 100 | |
| Need determined elsewhere | 31 | 0 | | 15 | 0 | | 3 | 0 | |
| Both(differ by vaccine) | 31 | 12.9 | 6.0 | 15 | 0 | | 3 | 0 | |
| Quantity to order strategy | | | | | | | | | |
| Order same amount | 31 | 100 | | 15 | 100 | | 3 | 100 | |
| Different per vaccine | 31 | 0 | | 15 | 0 | | 3 | 0 | |
| Time to order strategy | | | | | | | | | |
| Fixed time, > once/week | 31 | 93.5 | 4.4 | 15 | 100 | | 3 | 33.3 | 27.2 |
| Fixed time, < once/week | 31 | 3.2 | 3.2 | 15 | 0 | | 3 | 33.3 | 27.2 |
| Order when needed | 31 | 0 | | 15 | 0 | | 3 | 33.3 | 27.2 |
| Time to receive supplies | | | | | | | | | |
| < 1 week | 31 | 58.1 | 8.9 | 15 | 100 | | 3 | 100 | |
| 1-2 weeks | 31 | 41.9 | 8.9 | 15 | 0 | | 3 | 0 | |
| > 2 weeks | 31 | 0 | | 15 | 0 | | 3 | 0 | |
| Reception of quantity ordered | | | | | | | | | |
| Always | 31 | 16.1 | 6.6 | 15 | 6.7 | 6.4 | 3 | 33.3 | 27.2 |
| Almost always | 31 | 71 | 8.1 | 15 | 66.7 | 12.2 | 3 | 66.7 | 27.2 |
| Almost never | 31 | 12.9 | 6.0 | 15 | 26.7 | 11.4 | 3 | 0 | |

**4.3 Vaccines observed**

Tables 4.3.1a-c indicate the percentage of facilities at which at least one unit of a specified vaccine was observed by the surveyors at the time of the survey (if the facility stores vaccines). Vaccine stocks were generally lower at the 18-month evaluation.

**Table 4.3.1a** Vaccine stocks observed in ambulatory facilities

| | AMBULATORY EONC LEVEL | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| **Vaccine type** | N | % | SE | N | % | SE |
| Pentavalent*/(HepB + DPT) | 24 | 100 | | 29 | 65.5 | 8.8 |
| Polio | 24 | 95.8 | 4.1 | 29 | 44.8 | 9.2 |
| MMR* | 24 | 100 | | 29 | 37.9 | 9.0 |
| Rotavirus | 24 | 95.8 | 4.1 | 29 | 44.8 | 9.2 |
| Pneumococcal conjugate | 24 | 100 | | 29 | 31.0 | 8.6 |
| BCG | 24 | 95.8 | 4.1 | 29 | 31.0 | 8.6 |

* Pentavalent = DPT + HepB + Hib; MMR = Measles + Mumps + Rubella

**Table 4.3.1b** Vaccine stocks observed in basic facilities

| | BASIC EONC LEVEL | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| **Vaccine type** | N | % | SE | N | % | SE |
| Pentavalent*/(HepB + DPT) | 10 | 100 | | 13 | 76.9 | 11.7 |
| Polio | 10 | 100 | | 13 | 69.2 | 12.8 |
| MMR* | 10 | 100 | | 13 | 53.8 | 13.8 |
| Rotavirus | 10 | 100 | | 13 | 69.2 | 12.8 |
| Pneumococcal conjugate | 10 | 90 | 9.5 | 13 | 38.5 | 13.5 |
| BCG | 10 | 100 | | 13 | 69.2 | 12.8 |

* Pentavalent = DPT + HepB + Hib; MMR = Measles + Mumps + Rubella

**Table 4.3.1c** Vaccine stocks observed in complete facilities

| | COMPLETE EONC LEVEL | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| **Vaccine type** | N | % | SE | N | % | SE |
| Pentavalent*/(HepB + DPT) | 3 | 33.3 | 27.2 | 2 | 50 | 35.4 |
| Polio | 3 | 33.3 | 27.2 | 2 | 50 | 35.4 |
| MMR* | 3 | 33.3 | 27.2 | 2 | 50 | 35.4 |
| Rotavirus | 3 | 33.3 | 27.2 | 2 | 50 | 35.4 |
| Pneumococcal conjugate | 3 | 33.3 | 27.2 | 2 | 0 | |
| BCG | 3 | 100 | | 2 | 100 | |

* Pentavalent = DPT + HepB + Hib; MMR = Measles + Mumps + Rubella

### 4.4 Cold chain

Facilities that either 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. Interviewers observed the type of fridges used to store vaccines. Table 4.4.1 details the percent of facilities that have each type of fridge observed and functional at the time of the survey. Electric fridges and cold boxes were most common at all facility levels.

**Table 4.4.1** Cold chain input availability

| | Ambulatory | | | Basic | | | Complete | | |
|---|---|---|---|---|---|---|---|---|---|
| | N | % | SE | N | % | SE | N | % | SE |
| Storage | | | | | | | | | |
| Electric fridge | 36 | 94.4 | 3.8 | 15 | 86.7 | 8.8 | 3 | 100 | |
| Kerosene fridge | 36 | 0 | | 15 | 0 | | 3 | 0 | |
| Gas fridge | 36 | 8.3 | 4.6 | 15 | 0 | | 3 | 0 | |
| Solar fridge | 36 | 0 | | 15 | 0 | | 3 | 0 | |
| Cold box | 36 | 83.3 | 6.2 | 15 | 86.7 | 8.8 | 3 | 66.7 | 27.2 |
| Any of the above | 36 | 97.2 | 2.7 | 15 | 100 | | 3 | 100 | |
| Thermometers | | | | | | | | | |
| Digital thermometers | 36 | 38.9 | 8.1 | 13 | 38.5 | 13.5 | 3 | 0 | |
| Alcohol thermometers | 35 | 42.9 | 8.4 | 13 | 53.8 | 13.8 | 3 | 66.7 | 27.2 |
| Other thermometers | 22 | 36.4 | 10.3 | 5 | 60 | 21.9 | 2 | 0 | |
| Any of the above | 36 | 91.7 | 4.6 | 15 | 86.7 | 8.8 | 3 | 66.7 | 27.2 |

# Chapter 5 FAMILY PLANNING

## 5.1 Service provision and storage

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 previous 3 months.

All health facilities reported providing family planning services in-facility, and all facilities store contraceptives, with the exception of one ambulatory facility (Tables 5.1.1-5.1.2). Interviewers recorded the setting of the room used for family planning services, finding that the majority of facilities offer rooms with visual and auditory privacy for patients seeking family planning services.

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

| | Ambulatory | | | Basic | | | Complete | | |
|---|---|---|---|---|---|---|---|---|---|
| | N | % | SE | N | % | SE | N | % | SE |
| Offers FP services | 41 | 100 | | 15 | 100 | | 4 | 100 | |
| FP room | | | | | | | | | |
| Private room with visual and auditory privacy | 41 | 73.2 | 6.9 | 15 | 100 | | 4 | 50 | 25 |
| Non-private room without auditory nor visual privacy | 41 | 0 | | 15 | 0 | | 4 | 0 | |
| Visual privacy only | 41 | 0 | | 15 | 0 | | 4 | 0 | |
| No privacy | 41 | 14.6 | 5.5 | 15 | 0 | | 4 | 25 | 21.6 |
| Other | 41 | 2.4 | 2.4 | 15 | 0 | | 4 | 25 | 21.6 |

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

| | Ambulatory | | | Basic | | | Complete | | |
|---|---|---|---|---|---|---|---|---|---|
| | N | % | SE | N | % | SE | N | % | SE |
| FP Storage | | | | | | | | | |
| Yes, stores contraceptives | 41 | 97.6 | 2.4 | 15 | 100 | | 4 | 100 | |
| No, delivered when services are being provided | 41 | 2.4 | 2.4 | 15 | 0 | | 4 | 0 | |

## 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 facilities in which the surveyor observed at least one unit of a specific contraception method at the time of the survey. Most popular are the male condoms, pills, and injectables. The table also shows reported availability of pregnancy tests; less than half of all ambulatory units without a doctor offer pregnancy tests, while both ambulatory units with a doctor offer these.

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

| | Ambulatory | | | Ambulatory with | | |
|---|---|---|---|---|---|---|
| | N | % | SE | N | % | SE |
| Observed FP methods | | | | | | |
| Any pill | 35 | 97.1 | 2.8 | 2 | 100 | |
| Combined oral pill | 35 | 97.1 | 2.8 | 2 | 100 | |
| Progestin only pill | 35 | 8.6 | 4.7 | 2 | 0 | |
| Any injectable | 35 | 100 | | 2 | 100 | |
| Combined injectable (1 month) | 35 | 85.7 | 5.9 | 2 | 100 | |
| Progestin only injectable (3 months) | 35 | 91.4 | 4.7 | 2 | 100 | |
| Male condom | 35 | 91.4 | 4.7 | 2 | 100 | |
| IUD* | 35 | 5.7 | 3.9 | 2 | 100 | |
| Reported services | | | | | | |
| Offers pregnancy test | 35 | 42.9 | 8.4 | 2 | 100 | |

*Intrauterine device

### 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. Most prevalent at the basic level were injectables and male condoms. At complete-level facilities, male condoms and IUDs were the most common available family planning methods.

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

| | Basic | | | Complete | | |
|---|---|---|---|---|---|---|
| | N | % | SE | N | % | SE |
| Observed FP methods | | | | | | |
| Any pill | 15 | 86.7 | 8.8 | 4 | 50 | 25 |
| Combined oral pill | 15 | 86.7 | 8.8 | 4 | 50 | 25 |
| Progestin only pill | 15 | 6.7 | 6.4 | 4 | 0 | |
| Any injectable | 15 | 100 | | 4 | 75 | 21.6 |
| Combined injectable (1 month) | 15 | 100 | | 4 | 75 | 21.6 |
| Progestin only injectable (3 months) | 15 | 100 | | 4 | 75 | 21.6 |
| Male condom | 15 | 100 | | 4 | 100 | |
| IUD* | 15 | 93.3 | 6.4 | 4 | 100 | |
| IUD insertion kit | 15 | 93.3 | 6.4 | 4 | 100 | |
| Reported services | | | | | | |
| Offers pregnancy tests | 15 | 86.7 | 8.8 | 4 | 100 | |
| Trained doctor to perform IUD insertion | 15 | 80 | 10.3 | 4 | 100 | |
| Trained doctor to perform tubal ligation | 15 | 20 | 10.3 | 4 | 100 | |
| Trained doctor to perform vasectomy | 15 | 6.7 | 6.4 | 4 | 75 | 21.6 |

*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 country indicator manual, the composite family planning indicator requires ambulatory level facilities to have continuous availability (no stock out in the last 3 months) of condoms, any pill, and any injectable. Basic and complete level facilities meet the family planning indicator if they have continuous availability of condoms, any pill, any injectable, and IUD.

Ambulatory and basic-level facilities performed better on the family planning indicator at 18 months than at baseline, with an improvement of about 10 percentage points at ambulatory units and almost 15 percentage points at basic units. All hospitals at 18 months stocked condoms and IUDs on the day of the survey, but did not have continuous availability of all required inputs in the three months before the survey.

The components of this indicator are further detailed by facility classification in Tables 5.3.1a-5.3.1c.

**Table 5.3.1a** Composite family planning indicator in ambulatory facilities

| | AMBULATORY EONC | | | | | |
|---|---|---|---|---|---|---|
| | Baseline | | | 18-Month | | |
| | N | % | SE | N | % | SE |
| Male condom | 45 | 80 | 6.0 | 37 | 91.9 | 4.5 |
| Any pill | 45 | 68.9 | 7.0 | 37 | 97.3 | 2.7 |
| Any injectable | 45 | 97.8 | 2.2 | 37 | 100 | |
| Availability of all above methods on the day of the survey | 45 | 62.2 | 7.3 | 37 | 91.9 | 4.5 |
| Continuous availability of all methods in the previous three months* | 45 | 62.2 | 7.3 | 37 | 73 | 7.3 |

* Includes availability on the day of the survey

**Table 5.3.1b** Composite family planning indicator in basic facilities

| | BASIC EONC | | | | | |
|---|---|---|---|---|---|---|
| | Baseline | | | 18-Month | | |
| | N | % | SE | N | % | SE |
| Male condom | 13 | 92.3 | 7.7 | 15 | 100 | |
| Any pill | 13 | 100 | | 15 | 86.7 | 8.8 |
| Any injectable | 13 | 100 | | 15 | 100 | |
| IUD | 13 | 53.8 | 14.4 | 15 | 93.3 | 6.4 |
| Availability of all above methods on the day of the survey | 13 | 53.8 | 14.4 | 15 | 80 | 10.3 |
| Continuous availability of all methods in the previous three months* | 13 | 46.2 | 14.4 | 15 | 60 | 12.6 |

* Includes availability on the day of the survey

**Table 5.3.1c** Composite family planning indicator in complete facilities

| | COMPLETE EONC | | | | | |
|---|---|---|---|---|---|---|
| | Baseline | | | 18-Month | | |
| | N | % | SE | N | % | SE |
| Male condom | 4 | 100 | | 4 | 100 | |
| Any pill | 4 | 75 | 21.7 | 4 | 50 | 25 |
| Any injectable | 4 | 100 | | 4 | 75 | 21.7 |
| IUD | 4 | 75 | 21.7 | 4 | 100 | |
| Availability of all above methods on the day of the survey | 4 | 75 | 21.7 | 4 | 50 | 25 |
| Continuous availability of all methods in the previous three months* | 4 | 75 | 21.7 | 4 | 25 | 21.7 |

* Includes availability on the day of the survey

### 5.4 Teaching and awareness

Table 5.4.1 illustrates the percent of facilities that promote family planning through counseling, teaching, and educational graphics in the local language posted in the facility. Posters were only sought out in facilities that administer contraceptive methods.

**Table 5.4.1** Teaching and awareness on family planning and STIs

| | Ambulatory | | | Basic | | | Complete | | |
|---|---|---|---|---|---|---|---|---|---|
| | N | % | SE | N | % | SE | N | % | SE |
| Individual FP counseling | 41 | 100 | | 15 | 100 | | 4 | 100 | |
| Group FP counseling | 41 | 100 | | 15 | 100 | | 4 | 100 | |
| FP posters on walls of facility | 37 | 75.7 | 7.1 | 15 | 100 | | 4 | 100 | |
| STI/HIV posters on walls of facility | 37 | 64.9 | 7.8 | 15 | 66.7 | 12.2 | 4 | 75 | 21.6 |

# 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.

All ambulatory facilities reported offering antenatal care services. The setting of the room used for antenatal care had either auditory and visual privacy or visual privacy only for all ambulatory facilities with the exception of two (Table 6.1.1). Questions about delivery and postpartum care were not asked at the ambulatory level.

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

| | Ambulatory without doctor | | | Ambulatory with doctor | | |
|---|---|---|---|---|---|---|
| | N | % | SE | N | % | SE |
| Offers ANC services | 38 | 100 | | 3 | 100 | |
| ANC room | | | | | | |
| Private room with auditory and visual privacy | 36 | 91.7 | 4.61 | 2 | 100 | |
| Non-private room without auditory nor visual privacy | 36 | 0 | | 2 | 0 | |
| Visual privacy only | 36 | 2.8 | 2.74 | 2 | 0 | |
| No privacy | 36 | 5.6 | 3.82 | 2 | 0 | |
| DK/DR | 2 | | | 1 | | |

All basic level facilities reported offering antenatal, and postpartum care services. In total, 93.3% of basic facilities also offered routine delivery services. Interviewers observed private rooms with auditory and visual privacy for all basic facilities. 100% of hospitals offered antenatal care, routine delivery service, and postpartum care services in rooms with visual privacy (Table 6.1.2).

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

| | Basic | | | Complete | | |
|---|---|---|---|---|---|---|
| | N | % | SE | N | % | SE |
| Offers ANC services | 15 | 100 | | 4 | 100 | |
| Offers routine delivery services (non-urgent) | 15 | 93.3 | 6.4 | 4 | 100 | |
| Offers PPC services | 15 | 100 | | 4 | 100 | |
| ANC - PPC room | | | | | | |
| Private room with auditory and visual privacy | 15 | 100 | | 4 | 100 | |
| Non-private room without auditory nor visual | 15 | 0 | | 4 | 0 | |
| Visual privacy only | 15 | 0 | | 4 | 0 | |
| No privacy | 15 | 0 | | 4 | 0 | |
| Delivery room | | | | | | |
| Private room with auditory and visual privacy | 14 | 100 | | 4 | 100 | |
| Non-private room with neither auditory nor visual privacy | 14 | 0 | | 4 | 0 | |
| Visual privacy only | 14 | 0 | | 4 | 0 | |
| No privacy | 14 | 0 | | 4 | 0 | |
| DK/DR | 1 | | | | | |

### 6.2 ANC - PPC equipment

Tables 6.2.1-6.2.3 indicate the percentage of facilities where a surveyor observed functional ANC and PPC equipment 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, facilities are required to observe at least one functional piece of the following equipment: standing scales + gynecological exam table + obstetric tape + gooseneck or hand lamp + sphygmomanometer + stethoscope + perinatal maternal medical history. There are two ambulatory units in the sample which are mobile and therefore not required to have a gynecological exam table to meet the indicator.

### 6.2.1 ANC - PPC equipment in ambulatory facilities

In total, 39.5% of all ambulatory level facilities met the criteria listed above. This is further detailed by ambulatory facilities that do and do not have a doctor on staff in Tables 6.2.1a-6.2.1b.

**Table 6.2.1a** Observed and functional ANC - PPC equipment in ambulatory facilities without a doctor

| | AMBULATORY WITHOUT DOCTOR | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| **Equipment type** | N | % | SE | N | % | SE |
| Standing scales | 42 | 59.5 | 7.6 | 36 | 94.4 | 3.8 |
| Gynecological exam table* | 42 | 81 | 6.1 | 34 | 64.7 | 8.2 |
| CLAP obstetrical tape | 42 | 71.4 | 7.0 | 36 | 91.7 | 4.6 |
| Gooseneck lamp/ hand lamp | 42 | 42.9 | 7.6 | 36 | 63.9 | 8.0 |
| Sphygmomanometer | 42 | 78.6 | 6.3 | 36 | 100 | |
| Stethoscope | 42 | 83.3 | 5.8 | 36 | 97.2 | 2.7 |
| Perinatal maternal medical history | 42 | 92.9 | 3.9 | 36 | 100 | |
| All equipment observed and functional | 42 | 21.4 | 6.3 | 36 | 36.1 | 8.0 |

*Does not apply to mobile units

**Table 6.2.1b** Observed and functional ANC - PPC equipment in ambulatory facilities with a doctor

| | AMBULATORY WITH DOCTOR | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| **Equipment type** | N | % | SE | N | % | SE |
| Standing scales | 5 | 60 | 21.9 | 2 | 100 | |
| Gynecological exam table | 5 | 80 | 17.9 | 2 | 100 | |
| CLAP obstetrical tape | 5 | 60 | 21.9 | 2 | 100 | |
| Gooseneck lamp/hand lamp | 5 | 80 | 17.9 | 2 | 100 | |
| Sphygmomanometer | 5 | 100 | | 2 | 100 | |
| Stethoscope | 5 | 100 | | 2 | 100 | |
| Perinatal maternal medical history | 5 | 100 | | 2 | 100 | |
| All equipment observed and functional | 5 | 20 | 17.9 | 2 | 100 | |

### 6.2.2 ANC - PPC equipment in basic and complete facilities

In general, basic and complete level facilities were better equipped than ambulatory facilities for antenatal and postpartum care. About half of the basic and complete facilities had the necessary functional equipment on the day of the survey. Tables 6.2.2a-6.2.2b detail the percentage of basic and complete facilities where specific ANC and PPC equipment was present and observed and functional, in comparison to the baseline.

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

| | BASIC EONC LEVEL | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| **Equipment type** | N | % | SE | N | % | SE |
| Standing scales | 13 | 100 | | 15 | 73.3 | 11.4 |
| Gynecological exam table | 13 | 84.6 | 10.0 | 15 | 80 | 10.3 |
| CLAP obstetrical tape | 13 | 84.6 | 10.0 | 15 | 93.3 | 6.4 |
| Gooseneck lamp/hand lamp | 13 | 84.6 | 10.0 | 15 | 100 | |
| Sphygmomanometer | 13 | 84.6 | 10.0 | 15 | 100 | |
| Stethoscope | 13 | 84.6 | 10.0 | 15 | 100 | |
| Perinatal maternal medical history | 13 | 100 | | 15 | 93.3 | 6.4 |
| All equipment observed and functional | 13 | 38.5 | 13.5 | 15 | 46.7 | 12.9 |

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

| | COMPLETE EONC LEVEL | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| **Equipment type** | N | % | SE | N | % | SE |
| Standing scales | 4 | 100 | | 4 | 100 | |
| Gynecological exam table | 4 | 75 | 21.7 | 4 | 100 | |
| CLAP obstetrical tape | 4 | 75 | 21.7 | 4 | 75 | 21.7 |
| Gooseneck lamp/hand lamp | 4 | 100 | | 4 | 100 | |
| Sphygmomanometer | 4 | 75 | 21.7 | 4 | 100 | |
| Stethoscope | 4 | 75 | 21.7 | 4 | 75 | 21.7 |
| Perinatal maternal medical history | 4 | 75 | 21.7 | 4 | 100 | |
| Perinatal maternal card | n/a | n/a | n/a | 4 | 100 | |
| All equipment observed and functional | 4 | 75 | 21.7 | 4 | 50 | 25 |

### 6.3 ANC - PPC laboratory inputs

#### 6.3.1 ANC - PPC laboratory inputs in ambulatory facilities

Certain laboratory inputs needed for antenatal and postpartum care were observed in facilities that had a lab. Ambulatory units with a doctor were required to have a rapid test for glycemia, which was available in both facilities with a lab that were surveyed.

**Table 6.3.1** Laboratory inputs in ambulatory facilities

| | AMBULATORY WITH DOCTOR | | |
|---|---|---|---|
| | 18-MONTH | | |
| **Laboratory inputs** | N | % | SE |
| Rapid glycemia test | 2 | 100 | |
| Availability of all lab inputs | 2 | 100 | |

### 6.3.2 ANC - PPC laboratory inputs in basic and complete facilities

The lab equipment required for ANC and PPC services in basic level facilities that provide lab services are as follows: centrifuge; test tubes; glucometer/blood glucose strips; hemocue and microcuvettes, or equipment for traditional hematocrit method; sharps guards; and lab reagents for hemoglobin and blood glucose. 60% of basic level facilities met these criteria (Table 6.3.2a).

In complete level facilities, the lab equipment requirements are as follows: microscope; centrifuge; test tubes; glucometer; hematology equipment; basic blood chemistry equipment; equipment for STI tests; and lab reagents for hemoglobin and blood glucose. Table 6.3.2b shows that no complete facilities met all requirements for the indicator; however, the only missing requirements were glucometer and basic blood chemistry (present in 75% of facilities) and equipment for STI tests (present in 0% of facilities).

**Table 6.3.2a** Laboratory inputs in basic facilities

| | BASIC EONC LEVEL | | |
|---|---|---|---|
| | 18-MONTH | | |
| **Laboratory inputs** | N | % | SE |
| Centrifuge | 11 | 63.6 | 15.2 |
| Test tubes | 11 | 81.8 | 12.2 |
| Glucometer or blood glucose strips | 11 | 100 | |
| (Hemocue + microcuvettes) or (Capillary and measuring rule for traditional hematocrit method) | 11 | 63.6 | 15.2 |
| Sharps guards | 11 | 100 | |
| Lab reagents (hemoglobin and blood glucose)* | 10 | 70 | 15.3 |
| Availability of all lab inputs | 10 | 60 | 16.3 |

*Data missing in one facility

**Table 6.3.2b** Laboratory inputs in complete facilities

| | COMPLETE EONC LEVEL | | |
|---|---|---|---|
| | 18-MONTH | | |
| **Laboratory inputs** | N | % | SE |
| Microscope* | 4 | 100 | |
| Centrifuge | 4 | 100 | |
| Test tubes | 4 | 100 | |
| Glucometer | 4 | 75 | 25 |
| Hematology equipment** | 4 | 100 | |
| Basic blood chemistry (Creatinine, N urea) | 4 | 75 | 25 |
| Equipment for STI tests (syphillis + HIV + VDRL)*** | 4 | 0 | |
| Lab reagents (hemoglobin and blood glucose)* | 4 | 100 | |
| Availability of all lab inputs | 3 | 0 | |

*Data missing in 1 facility

**Automized or traditional hematologic measurement or (equipment for platelet, white blood cell, and red blood cell count + equipment for prothrombin and thromboplastin time)

***Includes microscope, enzyme immunoassay, and VDRL test

### 6.4 ANC - PPC medications

Tables 6.4.1 - 6.4.4 indicate the percentage of facilities that had availability of specific medications at the time of the survey and no stock out in the last 3 months. According to the indicator related to the continuous availability of supplies and equipment necessary for antenatal and postpartum care, certain medications are required depending on facility classification level.

### 6.4.1 ANC - PPC medications in ambulatory facilities

Ambulatory health units are required to have continuous availability (no stock out in the last 3 months) of the following pharmacy inputs: A combination of (iron & folic acid)/multivitamin + tetanus vaccine (if the facility stores vaccines).

**Table 6.4.1a** ANC - PPC pharmacy inputs in ambulatory facilities without a doctor

| | AMBULATORY WITHOUT DOCTOR | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| **Pharmacy inputs** | N | % | SE | N | % | SE |
| (Iron + Folic acid)/Multivitamin | 42 | 83.3 | 5.8 | 36 | 91.7 | 4.6 |
| Tetanus vaccine* | 42 | 54.8 | 7.7 | 28 | 82.1 | 7.2 |
| All drugs available on the day of the survey | 42 | 45.2 | 7.7 | 36 | 83.3 | 6.2 |
| Continuous availability in the previous three months | 42 | 38.1 | 7.5 | 36 | 41.7 | 8.2 |

* Only in facilities that store vaccines

**Table 6.4.1b** ANC - PPC pharmacy inputs in ambulatory facilities with a doctor

| | AMBULATORY WITH DOCTOR | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| **Pharmacy inputs** | N | % | SE | N | % | SE |
| (Iron + Folic acid)/Multivitamin | 5 | 80 | 17.9 | 2 | 100 | 0 |
| Tetanus vaccine* | 5 | 80 | 17.9 | 2 | 100 | 0 |
| All drugs available on the day of the survey | 5 | 80 | 17.9 | 2 | 100 | 0 |
| Continuous availability in the previous three months | 5 | 80 | 17.9 | 2 | 0 | 0 |

* Only in facilities that store vaccines

### 6.4.2 ANC - PPC medications in basic and complete facilities

Basic and complete health units are required to have continuous availability (no stock out in the last 3 months) of the following pharmacy inputs: A combination of (iron & folic acid)/multivitamin + tetanus vaccine (if the facility stores vaccines). The percentage of facilities that had each of these components is detailed by facility level classification in Tables 6.4.2a-6.4.2b.

**Table 6.4.2a** ANC - PPC pharmacy inputs in basic facilities

| | BASIC EONC LEVEL | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| **Pharmacy inputs** | N | % | SE | N* | % | SE |
| (Iron + Folic acid)/Multivitamin | 13 | 100 | | 14 | 100 | |
| Tetanus vaccine** | 13 | 92.3 | 7.4 | 15 | 86.7 | 8.8 |
| All drugs available on the day of the survey | 13 | 61.5 | 13.5 | 14 | 85.7 | 9.4 |
| Continuous availability in the previous three months | 13 | 38.5 | 13.5 | 14 | 42.9 | 13.2 |

* Pharmacy not present in 1 facility

** Only in facilities that store vaccines

**Table 6.4.2b** ANC - PPC pharmacy inputs in complete facilities

| | COMPLETE EONC LEVEL | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| **Pharmacy inputs** | N | % | SE | N | % | SE |
| (Iron + Folic acid)/Multivitamin | 4 | 75 | 21.7 | 4 | 100 | |
| Tetanus vaccine* | 4 | 100 | | 3 | 33.3 | 27.2 |
| All drugs available on the day of the survey | 4 | 75 | 21.7 | 4 | 50 | 25 |
| Continuous availability in the previous three months | 4 | 50 | 25 | 4 | 50 | 25 |

* Only in facilities that store vaccines

### 6.5 ANC medical record review

#### 6.5.1 Antenatal care according to the norm for births in the past two years

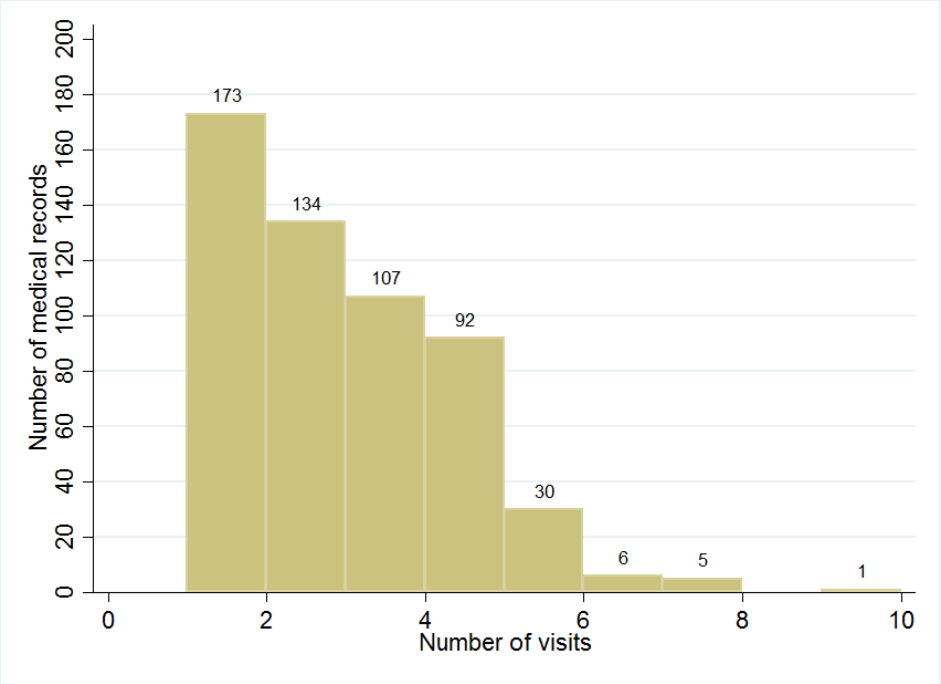
Records of antenatal care were reviewed in all applicable facilities. In order to demonstrate antenatal care according to the standards, each woman must have had at least 4 visits with a doctor or nurse during her pregnancy, and her weight, blood pressure, and fundal height must have been recorded at each visit. In addition, any visit after 20 weeks' gestation must have included a check of fetal heart rate and fetal movement. In order to meet indicator requirements, a variety of laboratory tests must have been performed at least once during the pregnancy, as detailed in Table 6.5.1.

**Table 6.5.1** Antenatal care according to the norm for births in the past two years

| | Ambulatory | | | Basic | | | Complete | | |
|---|---|---|---|---|---|---|---|---|---|
| | N | % | SE | N | % | SE | N | % | SE |
| At least 4 ANC visits | 395 | 24.3 | 2.2 | 115 | 20.9 | 3.8 | 38 | 36.8 | 7.8 |
| At least 4 ANC visits according to the norm | 395 | 6.1 | 1.2 | 115 | 9.6 | 2.7 | 38 | 28.9 | 7.4 |
| Lab tests | | | | | | | | | |
| Blood glucose | 395 | 62.3 | 2.4 | 115 | 44.3 | 4.6 | 38 | 86.8 | 5.5 |
| VDRL | 395 | 59 | 2.5 | 115 | 47 | 4.7 | 38 | 89.5 | 5.0 |
| Hb | 395 | 60.8 | 2.5 | 115 | 46.1 | 4.7 | 38 | 92.1 | 4.4 |
| Blood group | 395 | 58.2 | 2.5 | 115 | 45.2 | 4.6 | 38 | 81.6 | 6.3 |
| Urinalysis | 395 | 61.5 | 2.5 | 115 | 47 | 4.7 | 38 | 92.1 | 4.4 |
| Rh factor | 395 | 54.4 | 2.5 | 115 | 45.2 | 4.6 | 38 | 78.9 | 6.6 |
| HIV | 395 | 62.8 | 2.4 | n/a | n/a | n/a | n/a | n/a | n/a |
| Uric acid in blood | 395 | 2.8 | 0.8 | n/a | n/a | n/a | n/a | n/a | n/a |
| Urinalysis | 395 | 28.9 | 2.3 | n/a | n/a | n/a | n/a | n/a | n/a |
| Platelet count | 395 | 37.7 | 2.4 | n/a | n/a | n/a | n/a | n/a | n/a |
| All lab tests performed at least once during pregnancy | 395 | 0 | | 115 | 39.1 | 4.6 | 38 | 76.3 | 6.9 |
| Antenatal care given according to the norm | 395 | 0 | | 115 | 6.1 | 2.2 | 38 | 23.7 | 6.9 |

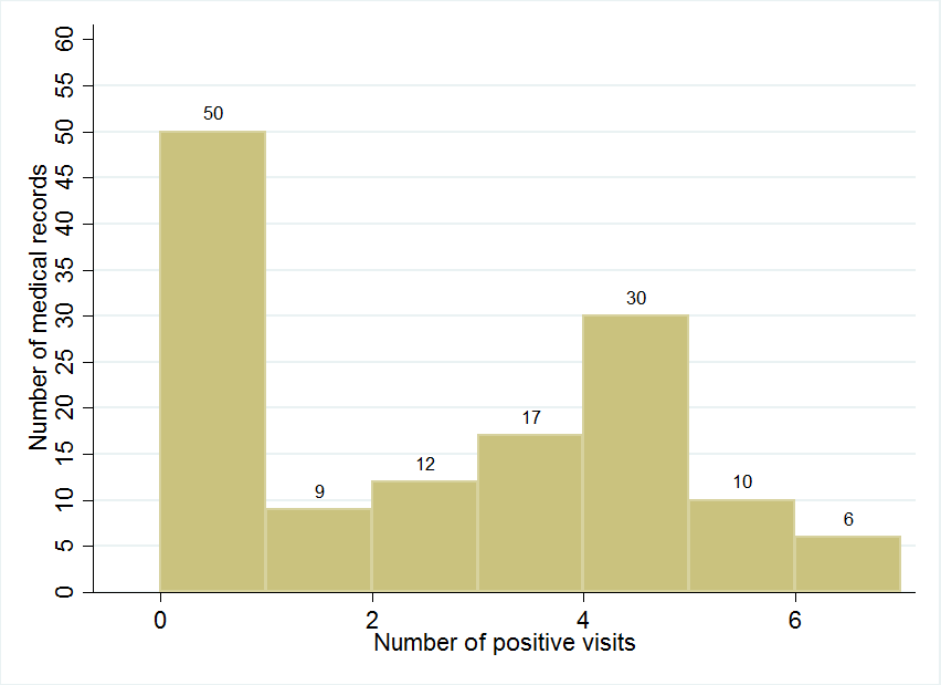
The histogram below (Figure 6.5.1a) displays the number of ANC visits in the medical records reviewed. Of all ANC records reviewed, 31.6% had only one visit, 24.5% had two visits, 19.5% had three visits, and 24.5% had four visits or more.

**Figure 6.5.1a** Number of antenatal care visits for births in the past two years




The histogram below (Figure 6.5.1b) displays the number of positive ANC visits, excluding the laboratory component, for women who had a minimum of four ANC visits in their medical record. If a woman's visit was positive, it means that it included a doctor/nurse, physical checkups (weight + blood pressure + fundal height), and fetal checkups (if the gestational age was >20 weeks).

**Figure 6.5.1b** Number of antenatal care visits according to the norm for births in the past two years




*Only women with 4 or more ANC visits are included in this diagram

### 6.5.2 Antenatal care before twelve weeks gestation in the past two years

For the indicator related to early catchment for antenatal care, a woman's first antenatal care visit must have been with a doctor or nurse and have occurred before 12 weeks' gestation. Gestational age was calculated by subtracting the date of woman's last menstrual period from the date of her first ANC visit. While half of all records indicated that a doctor or nurse attended the woman's first visit, only 20.4% showed that the woman's first visit occurred within the first trimester. In combination, only 10.6% of all ANC records met both these requirements.

**Table 6.5.2** Antenatal care before 12 weeks' gestation in the past two years

| | Ambulatory | | | Basic | | | Complete | | |
|---|---|---|---|---|---|---|---|---|---|
| | N | % | SE | N | % | SE | N | % | SE |
| Doctor or nurse attended first ANC visit | 382 | 36.6 | 2.5 | 112 | 78.6 | 3.9 | 36 | 100 | |
| First ANC visit before 12 weeks gestation | 382 | 20.7 | 2.1 | 112 | 22.3 | 3.9 | 36 | 11.1 | 5.2 |
| First ANC visit according to the norm | 382 | 8.4 | 1.4 | 112 | 17.9 | 3.6 | 36 | 11.1 | 5.2 |

*Using stated gestational age, 12.2% of all records meet indicator; using calculated gestational age, 10.6% meet indicator

### 6.6 Delivery medical record review

### 6.6.1 Births attended in CAPs and CAIMIs managed according to the norm

In the health facility survey medical record review module, interviewers systematically selected records of women who delivered in permanent health care centers (CAP) and comprehensive maternal and child health care centers (CAIMI) in the previous two years. According to the country indicator manual, births are considered managed according to the norm if they are attended by a doctor/nurse/obstetrician/ midwife + oxytocin/other uterotonic is administered + partograph is included in the medical record + there is record of cord clamping within 90 seconds. In total, 57.7% of women who gave births in CAPs or CAIMIs were managed according to the standards.

**Table 6.6.1** Births attended in CAPs and CAIMIs managed according to the norm

| | Basic | | |
|---|---|---|---|
| **Items checked** | N | % | SE |
| Birth attended by doctor/nurse/ obstetrician/midwife | 215 | 93 | 1.7 |
| Cord clamping within 90 seconds | 215 | 72.1 | 3.1 |
| Oxytocin/other uterotonic administration | 215 | 92.6 | 1.8 |
| Partograph included in the medical record | 215 | 91.2 | 1.9 |
| Birth managed according to the norm | 215 | 57.7 | 3.4 |

### 6.6.2 Partograph revision

Delivery records of women who gave birth in hospitals in the previous two years were selected

systematically and reviewed. There are three ways in which the indicator was calculated as met:

1. No partograph observed + woman arrived with imminent birth or elected C-section
2. Partograph observed and filled out + Fetal Heart Rate (FHR) and alert curve recorded if dilation was greater than 4.5 cm + nothing further required if FHR > 120 beats per minute (bpm) or alert curve was not surpassed
3. Partograph observed and filled out + Fetal Heart Rate (FHR) and alert curve recorded if dilation was greater than 4.5 cm + a note within 30 minute if FHR < 120 beats per minute (bpm) or alert curve was surpassed.

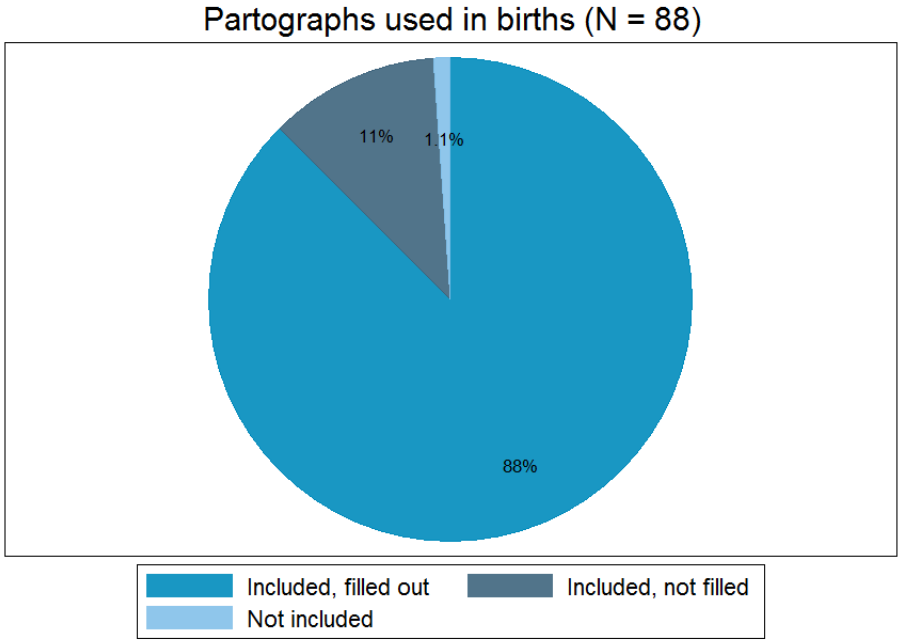
Table 6.6.2 details the findings of partograph record review in hospitals.

**Table 6.6.2** Partograph revision

| | Complete | | |
|---|---|---|---|
| **Partograph revision in Hospitals** | N | % | SE |
| Partograph included and filled out or woman arrived in imminent birth or elective C-section | 88 | 89.8 | 3.2 |
| Women with dilation > 4.5 cm | 77 | 59.7 | 5.6 |
| Fetal heart rate and alert curve are recorded if dilation > 4.5 cm | 46 | 93.5 | 3.7 |
| Women with alert curve surpassed | 77 | 14.3 | 4.0 |
| There exists a note within 30 minutes if alert curve surpassed | 11 | 9.1 | 9.1 |
| Fetal heart rate < 120 bpm | 76 | 4.0 | 2.2 |
| There exists a note within 30 minutes if FHR < 120 bpm | 3 | 0 | |
| Partograph according to the norm | 88 | 73.9 | 4.7 |

Figure 6.6.2 indicates that 88% of delivery records had a partograph included and filled out. Accounting for women who arrived in imminent birth and C-section, 73.9% of records met the indicator according to the norm.

**Figure 6.6.2** Partograph use during birth




## 6.7 Postnatal care medical record review

### 6.7.1 Checks after birth performed according to the norm

Birth records were reviewed to determine whether postnatal care in the first hours after birth was adequately given. In order to meet this indicator, women should have the following checks performed and recorded 4 times in the first hour after birth, 2 times in the second hour, and once at discharge: systolic and diastolic blood pressure + temperature + pulse. The results of this review are presented in Table 6.7.1.

**Table 6.7.1** Postnatal care according to the norm

| | Basic | | | Complete | | |
|---|---|---|---|---|---|---|
| | N | % | SE | N | % | SE |
| Checks performed 4 times in 1st hour | 181 | 49.7 | 3.7 | 85 | 55.3 | 5.4 |
| Checks performed 2 times in 2nd hour | 181 | 62.4 | 3.6 | 85 | 55.3 | 5.4 |
| Checks performed at discharge | 181 | 87.3 | 2.5 | 85 | 89.4 | 3.3 |
| Postnatal care according to the norm | 181 | 45.3 | 3.7 | 85 | 54.1 | 5.4 |

# 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 level 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 one or more complication.

**Table 7.1.1** Emergency 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 | 15 | 66.7 | 12.2 | 4 | 75 | 21.6 |
| Non-private room without auditory nor visual privacy | 15 | 0 | | 4 | 0 | |
| Visual privacy only | 15 | 0 | | 4 | 0 | |
| No privacy | 15 | 0 | | 4 | 0 | |
| Don't provide this service | 15 | 33.3 | 12.2 | 4 | 25 | 21.6 |

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

According to the indicator related to emergency obstetric and neonatal care, all basic and complete level facilities should have at least one functional piece of equipment observed on the day of the survey: blood pressure apparatus + stethoscope + portable doppler/Pinard stethoscope+ autoclave/dry heat sterilizer + oxygen tank + resuscitation bag for adults + neonatal resuscitation bag + laryngoscope + Manual vacuum aspiration (MVA) kit/curettage kit. In addition, complete level facilities should have observed at least one functional neonatal/pediatric stethoscope, equipment for anesthesia, and a kit for C-sections. The 18-month evaluation includes 10 basic facilities and 3 complete facilities that indicated that they offer emergency care services.

The percentage of basic and complete facilities with availability of functional equipment related to emergency obstetric and neonatal care is further detailed in Tables 7.2.1a-7.2.1b. Both types of facilities saw general increases in the availability of functional equipment for this indicator. Laryngoscopes were the least-prevalent items in basic facilities.

**Table 7.2.1a** Observed and functional equipment for emergency care in basic level units

| | BASIC EONC LEVEL | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| **Equipment type** | N | % | SE | N | % | SE |
| Autoclave/Dry heat sterilizer* | 13 | 69.2 | 12.8 | 9 | 88.9 | 10.5 |
| Blood pressure apparatus | 13 | 76.9 | 11.7 | 10 | 80 | 12.6 |
| Laryngoscope | 13 | 23.1 | 11.7 | 10 | 60 | 15.5 |
| MVA kit | 13 | 7.7 | 7.4 | 10 | 50 | 15.8 |
| Oxygen tank | 13 | 53.8 | 13.8 | 10 | 90 | 9.5 |
| Portable doppler/Pinard stethoscope | 13 | 84.6 | 10.0 | 10 | 90 | 9.5 |
| Reanimation resuscitation bag for adult | 13 | 61.5 | 13.5 | 10 | 100 | |
| Neonatal resuscitation bag | 13 | 46.2 | 13.8 | 10 | 90 | 9.5 |
| Stethoscope | 13 | 100 | | 10 | 80 | 12.6 |
| All equipment observed and functional* | 13 | 7.7 | 7.39 | 10 | 10 | 9.5 |

*Presence and functionality of dry heat sterilizer not captured in 1 facility in which autoclave was not present; indicator value is not affected by this, as another required input is missing in this facility

**Table 7.2.1b** Observed and functional equipment for emergency care in hospitals

| | COMPLETE EONC LEVEL | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| **Equipment type** | N | % | SE | N | % | SE |
| Anesthesia equipment | 4 | 75 | 21.7 | 3 | 66.7 | 27.2 |
| Autoclave/Dry heat sterilizer | 4 | 75 | 21.7 | 3 | 100 | |
| Blood pressure apparatus | 4 | 25 | 21.7 | 3 | 100 | |
| Kit for C-sections | 4 | 75 | 21.7 | 3 | 66.7 | 27.2 |
| Laryngoscope | 4 | 50 | 25 | 3 | 100 | |
| MVA kit/Curettage kit | 4 | 75 | 21.7 | 3 | 66.7 | 27.2 |
| Neonatal/Pediatric stethoscope | 4 | 50 | 25 | 3 | 66.7 | 27.2 |
| Oxygen tank | 4 | 100 | | 3 | 100 | |
| Portable doppler/Pinard stethoscope | 4 | 100 | | 3 | 66.7 | 27.2 |
| Reanimation resuscitation bag for adult | 4 | 75 | 21.7 | 3 | 100 | |
| Neonatal resuscitation bag | 4 | 75 | 21.7 | 3 | 100 | |
| Stethoscope | 4 | 100 | | 3 | 100 | |
| All equipment observed and functional | 4 | 0 | | 3 | 33.3 | 27.2 |

### 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. According to the indicator, basic facilities should have continuous availability of the following drugs: penicillin benzathine/ampicillin + calcium gluconate + dexamethasone/betamethasone + gentamicin/amikacin +

hydralazine + magnesium sulfate + metronidazole/clindamycin + oxytocin/metilergovina.

If a facility did not have a drug on the day of the survey, three-month stock of that drug was not evaluated. The figures detailing pharmacy stocks below show only the stocks of each drug in facilities that had that drug on the day of the survey.

Only 22.2% of basic level facilities had the necessary drugs available on the day of the survey. When looking at the stock of all necessary drugs in the previous three months, 11.1% of basic-level facilities passed this component of the indicator (Table 7.3.1a).

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

| | BASIC EONC LEVEL | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| **Drug availability** | N | % | SE | N | % | SE |
| Penicillin benzathine/Ampicillin | 13 | 84.6 | 10.0 | 9 | 100 | |
| Calcium gluconate | 13 | 30.8 | 12.8 | 9 | 55.6 | 16.6 |
| Dexamethasone/Betamethasone | 13 | 76.9 | 11.7 | 9 | 77.8 | 13.9 |
| Gentamicin/Amikacin | 13 | 69.2 | 12.8 | 9 | 88.9 | 10.5 |
| Hydralazine ampoule | 13 | 23.1 | 11.7 | 9 | 77.8 | 13.9 |
| Magnesium sulfate | 13 | 84.6 | 10.0 | 9 | 100 | |
| Metronidazole/Clindamycin | 13 | 84.6 | 10.0 | 9 | 77.8 | 13.9 |
| Oxytocin/Metilergonovina* | 13 | 84.6 | 10.0 | 9 | 100 | |
| All drugs available on the day of the survey | 13 | 0 | | 9 | 22.2 | 13.9 |
| Continuous availability in the previous three months | 13 | 0 | | 9 | 11.1 | 10.5 |

* Baseline measures only oxytocin

Complete level facilities were checked for the continuous availability of the following drugs: penicillin benzathine/ampicillin + calcium gluconate + dexamethasone/betamethasone + gentamicin/amikacin + hydralazine + magnesium sulfate + metronidazole/clindamycin + oxytocin/metilergovina + ceftriaxone + chloramphenicol + hydralazine hydrochloride + nifedipine + diazepam + diphenylhydantoin.

At the 18-month evaluation, complete facilities had almost all drugs available on the day of the survey, with the exception of chloramphenicol, diphenylhydantoin, and nifedipine in some facilities. When considering the stock of required drugs in the previous three months, no facilities met the pharmacy component of the indicator; the one hospital with nifedipine on the day of the survey had no stock of it in the three months before the survey (Table 7.3.1b).

**Table 7.3.1b** Drugs needed for emergency and neonatal care in hospitals

| | COMPLETE EONC LEVEL | | | | | |
|---|---|---|---|---|---|---|
| | BASELINE | | | 18-MONTH | | |
| **Drug availability** | N | % | SE | N | % | SE |
| Penicillin benzathine/Ampicillin | 4 | 100 | | 3 | 100 | |
| Calcium gluconate | 4 | 75 | 21.7 | 3 | 100 | |
| Ceftriaxona | 4 | 100 | | 3 | 100 | |
| Chloramphenicol | 4 | 25 | 21.7 | 3 | 66.7 | 27.2 |
| Dexamethasone/Betamethasone | 4 | 100 | | 3 | 100 | |
| Diazepam | 4 | 100 | | 3 | 100 | |
| Diphenylhydantoin | 4 | 50 | 25 | 3 | 33.3 | 27.2 |
| Gentamicin/Amikacin | 4 | 100 | | 3 | 100 | |
| Hydralazine hydrochloride | 4 | 75 | 21.7 | 3 | 100 | |
| Magnesium sulfate | 4 | 100 | | 3 | 100 | |
| Metronidazole/Clindamycin | 4 | 100 | | 3 | 100 | |
| Nifedipine | 4 | 25 | 21.7 | 3 | 33.3 | 27.2 |
| Oxytocin/Metilergovina* | 4 | 100 | | 3 | 100 | |
| All drugs available on the day of the survey | 4 | 0 | | 3 | 33.3 | 27.2 |
| Continuous availability in the previous three months | 4 | 0 | | 3 | 0 | |

* Baseline measures only oxytocin

### 7.4 Distribution of obstetric and neonatal complications

This section summarizes key indicators related to the management of maternal and neonatal complications in hospitals. Interviewers reviewed records of women with complications of sepsis, hemorrhage, pre-eclampsia and eclampsia and neonates with sepsis, asphyxia, prematurity, and low birth weight. These records were evaluated for vital signs, laboratory tests, correct treatment, and appropriate procedural actions.

Records of women and infants who had one of the maternal or neonatal complications of interest in the last two years were selected systematically and reviewed. In total, interviewers reviewed the records of 278 women and 246 infants with one or more complications (Tables 7.4.1-7.4.2). Because a woman or child could have experienced more than one complication, the total number of records below exceeds the number of women or children with complications.

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

| | Basic | Complete |
|---|---|---|
| Women with sepsis | 13 | 7 |
| Women with hemorrhage | 113 | 66 |
| Women with pre-eclampsia | 43 | 30 |
| Women with eclampsia | 2 | 8 |
| Total | 171 | 111 |

**Table 7.4.2** Distribution of neonatal complications by facility classification

| | Basic | Complete |
|---|---|---|
| Neonates with low birth weight | 79 | 19 |
| Neonates with prematurity | 19 | 36 |
| Neonates with sepsis | 19 | 48 |
| Neonates with asphyxia | 33 | 26 |
| Total | 150 | 129 |

## 7.5 Management of obstetric complications (sepsis, hemorrhage, pre-eclampsia and eclampsia) in the last two years

### 7.5.1 Sepsis in basic facilities

According to the country indicator manual, sepsis is managed according to the norm at basic level facilities if vital signs were checked (temperature + pulse + diastolic and systolic blood pressure), antibiotics were administered, a leukocyte count was performed, and the woman was referred to another health facility.

There were 13 records of maternal sepsis at the basic level and none noted that a leukocyte count had been performed (Table 7.5.1). Correct treatment entails that antibiotics are administered and the woman is referred to another facility, but only 5 records indicated both of these.

**Table 7.5.1** Medical record review at basic level facilities: sepsis

| | Basic | | |
|---|---|---|---|
| | N | % | SE |
| Temperature + pulse + blood pressure checked | 13 | 69.2 | 12.8 |
| Leukocyte count performed | 13 | 0 | |
| Antibiotics administered | 13 | 38.5 | 13.5 |
| Woman referred to another facility | 13 | 84.6 | 10.0 |
| Sepsis managed according to the norm (meets all above criteria) | 13 | 0 | |

### 7.5.2 Sepsis in hospitals

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), a leukocyte count was performed, antibiotics were administered, and correct treatment was recorded.

Correct treatment is evaluated as follows:

- Manual vacuum aspiration or revision of uterus if septic abortion
- Hysterectomy if uterine perforation
- Laparotomy if perforation or abscesses or infected ectopic pregnancy
- Surgical repair if tears of cervical canal or uterus

There were seven records of maternal sepsis at the complete level and all had the appropriate vital signs checked and correct treatment recorded (Table 7.5.2). Only one did not indicate that antibiotics had been administered.

**Table 7.5.2** Medical record review at complete level facilities: sepsis

| | Complete | | |
|---|---|---|---|
| | N | % | SE |
| Temperature + pulse + blood pressure checked | 7 | 100 | |
| Leukocyte count performed | 7 | 100 | |
| Antibiotics administered | 7 | 85.7 | 13.2 |
| Correct treatment | 7 | 100 | |
| Sepsis managed according to the norm (meets all above criteria) | 7 | 85.7 | 13.2 |

### 7.5.3 Hemorrhage in basic facilities

Hemorrhage is managed according to the norm if vital signs were checked (pulse + diastolic and systolic blood pressure), medication was administered (oxytocin + Ringer's lactate), the decision (transfer to another establishment) was recorded, and the woman was referred elsewhere.

Most of the evaluated records had noted that appropriate vital signs were checked, but only 30.1% indicated oxytocin administration. Those records that indicated medication administration tended not to include a referral to another unit, and therefore these cases were not managed according to the standards (Table 7.5.3).

**Table 7.5.3.** Medical record review at basic level facilities: hemorrhage

| | Basic | | |
|---|---|---|---|
| | N | % | SE |
| Pulse + blood pressure checked | 113 | 85 | 3.4 |
| Referral/transfer to another facility | 113 | 58.4 | 4.6 |
| Oxytocin + Ringer's lactate administered | 113 | 27.4 | 4.2 |
| Hemorrhage managed according to the norm (meets all above criteria) | 113 | 5.3 | 2.1 |

### 7.5.4 Hemorrhage in hospitals

Hemorrhage is managed according to the norm if vital signs were checked (diastolic and systolic blood pressure), lab tests were performed (Ht + Hb + PT + PTT + platelet count), oxytocin or other uterotonic was administered, the cause for the hemorrhage was recorded, and correct treatment was given.

Correct treatment is evaluated as follows:

- Manual vacuum aspiration or revision of uterus if complicated abortion or retained placenta

- Caesarian section or hysterectomy if placenta previa or placenta abruption or uterine rupture or uterine atony
- Laparotomy if ectopic pregnancy or uterine atony
- Surgical repair if tears of cervical canal or uterus.

Only eight of the evaluated records had prothrombin time (PT) recorded, and all others therefore were not managed according to the standards (Table 7.5.4).

**Table 7.5.4** Medical record review at complete level facilities: hemorrhage

| | Complete | | |
|---|---|---|---|
| | N | % | SE |
| Blood pressure checked | 66 | 98.5 | 1.5 |
| Lab tests performed | 66 | 12.1 | 4.0 |
| Oxytocin/other uterotonic administered | 66 | 71.2 | 5.6 |
| Cause recorded | 66 | 100 | |
| Correct treatment | 66 | 84.8 | 4.4 |
| Hemorrhage managed according to the norm (meets all above criteria) | 66 | 6.1 | 2.9 |

**7.5.5 Pre-eclampsia & eclampsia in basic facilities**

According to the country indicator manual, pre-eclampsia and eclampsia are managed according to the standards if vital signs were checked (diastolic and systolic blood pressure), lab tests were performed (urine protein), and correct treatment was given.

Correct treatment is evaluated as follows:

- If diastolic blood pressure is greater than 110, then administration of hydralazine/nifedipine
- Administration of magnesium sulfate

As detailed in Tables 7.5.5a-7.5.5b, only one record of a woman with pre-eclampsia managed according to the norm was found; all others did not include a urine protein test. Neither case of eclampsia at the basic facility level was managed according to the norm, as neither had proper treatment or lab tests performed.

**Table 7.5.5a** Medical record review at basic level facilities: pre-eclampsia

| | Basic | | |
|---|---|---|---|
| | N | % | SE |
| Blood pressure checked | 43 | 95.3 | 3.2 |
| Urine protein test performed | 43 | 2.3 | 2.3 |
| Correct treatment | 43 | 100 | |
| Pre-eclampsia managed according to the norm (meets all above criteria) | 43 | 2.3 | 2.3 |

**Table 7.5.5b** Medical record review at basic level facilities: eclampsia

| | Basic | | |
|---|---|---|---|
| | N | % | SE |
| Blood pressure checked | 2 | 100 | |
| Urine protein test performed | 2 | 0 | |
| Correct treatment | 2 | 0 | |
| Pre-eclampsia managed according to the norm (meets all above criteria) | 2 | 0 | |

### 7.5.6 Pre-eclampsia & eclampsia in hospitals

According to the country indicator manual, pre-eclampsia and eclampsia are managed according to the standards if vital signs were checked (diastolic and systolic blood pressure + pulse + respiratory rate + patellar reflex), lab tests were performed (urine protein + platelet count), correct treatment was given, and the outcome of pregnancy was recorded.

Correct treatment is evaluated as follows:

- If diastolic blood pressure is greater than 110, then administration of hydralazine/nifedipine
- If gestational age is 26-34 weeks, then administration of dexamethasone/betamethasone
- Administration of magnesium sulfate

As detailed in Tables 7.5.6a-7.5.6b, only two of the records of women with pre-eclampsia are managed according to the norm. Very few records indicated that all lab tests were performed and vital signs were checked. Among women with eclampsia, only a quarter had both lab tests performed, and only one record showed that all appropriate vital signs had been checked.

**Table 7.5.6a** Medical record review at complete level facilities: pre-eclampsia

| | Complete | | |
|---|---|---|---|
| | N | % | SE |
| Vital signs checked | 30 | 46.7 | 9.1 |
| Urine protein + platelet count performed | 30 | 20 | 7.3 |
| Correct treatment | 30 | 83.3 | 6.8 |
| Outcome recorded | 30 | 100 | |
| Pre-eclampsia managed according to the norm (meets all above criteria) | 30 | 6.7 | 4.6 |

**Table 7.5.6b** Medical record review at complete level facilities: eclampsia

| | Complete | | |
|---|---|---|---|
| | N | % | SE |
| Vital signs checked | 8 | 12.5 | 11.7 |
| Urine protein test + platelet count performed | 8 | 25 | 15.3 |
| Correct treatment | 8 | 37.5 | 17.1 |
| Outcome recorded | 8 | 100 | |
| Pre-eclampsia managed according to the norm (meets all above criteria) | 8 | 0 | |

## 7.6 Management of neonatal complications (low birth weight, prematurity, sepsis and asphyxia) in the last two years

### 7.6.1 Low birth weight (LBW) and prematurity in basic facilities

According to the country indicator manual, low birth weight and prematurity are managed according to the standards if all checkups recorded (weight + height + head circumference + skin examination + pulse, respiratory rate + abdominal exam + Downes/Silverman score), gestational age and the method of calculating it was recorded, lab tests were performed (glycemia + oxygen saturation), neonate was evaluated by a doctor at admission, and neonate was referred to a hospital.

None of the evaluated records of neonates with low birth weight or prematurity reported management according to the standards. Although most infants were evaluated by a doctor at admission, few had record of abdominal exam, Silverman score or Downes score. Only one neonate with low birth weight and one premature neonate had record of glycemia test or oxygen saturation, and none had record of both (Tables 7.6.1a-7.6.1b).

**Table 7.6.1a** Medical record review in basic level facilities: low birth weight

| | Basic | | |
|---|---|---|---|
| | N | % | SE |
| All checkups recorded | 79 | 0 | |
| Gestational age + method of calculating it recorded | 79 | 60.8 | 5.5 |
| Glycemia + oxygen saturation tests performed | 79 | 0 | |
| Neonate evaluated by a doctor at admission | 79 | 87.3 | 3.7 |
| Neonate referred to a hospital | 79 | 86.1 | 3.9 |
| Low birth weight managed according to the norm (meets all above criteria) | 79 | 0 | |

**Table 7.6.1b** Medical record review in basic level facilities: prematurity

| | Basic | | |
|---|---|---|---|
| | N | % | SE |
| All checkups recorded | 19 | 0 | |
| Gestational age + method of calculating it recorded | 19 | 57.9 | 11.3 |
| Glycemia + oxygen saturation level tests performed | 19 | 0 | |
| Neonate evaluated by a doctor at admission | 19 | 78.9 | 9.4 |
| Neonate referred to a hospital | 19 | 84.2 | 8.4 |
| Prematurity managed according to the norm (meets all above criteria) | 19 | 0 | |

### 7.6.2 Low birth weight (LBW) and prematurity in hospitals

According to the country indicator manual, low birth weight and prematurity are managed according to the standards if all vital signs checked (pulse + respiratory rate + Downes/Silverman score), lab tests were performed (glycemia + oxygen saturation level), correct treatment was given, and neonate was evaluated by a doctor at admission. Correct treatment entails IV feeding if respiratory rate is greater than 80, and the child must have been kept in an incubator or administered oxygen in some form.

Few of the evaluated records of neonates with low birth weight reported management according to the standards, due to a lack of checking all necessary vital signs. Although all infants were evaluated by a doctor at admission and most were given correct treatment, only three prematurity records and only one LBW record had Silverman score or Downes score.

**Table 7.6.2a** Medical record review in complete level facilities: low birth weight

| | Complete | | |
|---|---|---|---|
| | N | % | SE |
| Vital signs checked | 19 | 5.3 | 5.1 |
| Neonate evaluated by a doctor at admission | 19 | 100 | |
| Glycemia + oxygen saturation tests performed | 19 | 21.1 | 9.4 |
| Correct treatment | 19 | 89.5 | 7.0 |
| Low birth weight managed according to the norm (meets all above criteria) | 19 | 5.3 | 5.1 |

**Table 7.6.2b** Medical record review in complete level facilities: prematurity

| | Complete | | |
|---|---|---|---|
| | N | % | SE |
| Vital signs checked | 36 | 8.3 | 4.6 |
| Glycemia + oxygen saturation level tests performed | 36 | 19.4 | 6.6 |
| Neonate evaluated by a doctor at admission | 36 | 100 | |
| Correct treatment | 36 | 91.7 | 4.6 |
| Prematurity managed according to the norm (meets all above criteria) | 36 | 2.8 | 2.7 |

### 7.6.3 Sepsis in basic facilities

According to the country indicator manual, sepsis is managed according to the standards if gestational age is recorded, all vital signs checked (temperature + pulse + respiratory rate + skin examination + abdominal examination + distal coldness), lab tests were performed (leukocyte count + neutrophil morphology + platelet count + glycemia), treatment with ampicillin/gentamicin, neonate was evaluated by a doctor at admission, and neonate was referred to a hospital.

As detailed in Table 7.6.3, none of the evaluated records showed neonates managed according to the norm for sepsis. This is largely due to the absence of the distal coldness check and record of gestational age. Only one record noted administration of ampicillin/gentamicin, and only one record noted leukocyte count, neutrophil morphology, or glycemia. A platelet count was not recorded in any of the cases, therefore none met the requirements of the indicator.

**Table 7.6.3** Medical record review in basic level facilities: infants with sepsis

| | Basic | | |
|---|---|---|---|
| | N | % | SE |
| Vital signs checked | 19 | 31.6 | 10.7 |
| Gestational age recorded | 19 | 21.1 | 9.4 |
| Lab tests performed | 19 | 0 | |
| Ampicillin/gentamicin administered | 19 | 5.3 | 5.1 |
| Neonate evaluated by a doctor at admission | 19 | 52.6 | 11.4 |
| Neonate referred to a hospital | 19 | 84.2 | 8.4 |
| Sepsis managed according to the norm (meets all above criteria) | 19 | 0 | |

### 7.6.4 Sepsis in hospitals

According to the country indicator manual, sepsis is managed according to the standards if all vital signs checked (temperature + pulse), lab tests were performed (leukocyte count + C-reactive protein + erythrocyte sedimentation rate), any antibiotic was administered, and neonate was evaluated by a doctor at admission.

As detailed in Table 7.6.4, 4.2% of the evaluated records showed neonates managed according to the norm for sepsis. This is largely due to the absence of laboratory tests (erythrocyte sedimentation rate was recorded in only 16.7% of cases) and correct treatment (25% of cases showed treatment with any antibiotic).

**Table 7.6.4** Medical record review in complete level facilities: infants with sepsis

| | Complete | | |
|---|---|---|---|
| | N | % | SE |
| Temperature + pulse checked | 48 | 87.5 | 4.8 |
| Lab tests performed | 48 | 16.7 | 5.4 |
| Any antibiotic administered | 48 | 25 | 6.3 |
| Neonate evaluated by a doctor at admission | 48 | 97.9 | 2.1 |
| Sepsis managed according to the norm (meets all above criteria) | 48 | 4.2 | 2.9 |

### 7.6.5 Asphyxia in basic facilities

According to the country indicator manual, asphyxia is managed according to the standards if all vital signs were checked (temperature + skin examination + pulse + respiratory rate + abdominal examination + APGAR), lab tests were performed (complete blood count (CBC) + glycemia), and neonate was evaluated by a doctor at admission.

None of the evaluated records of neonates with asphyxia reported management according to the standards, as shown by Table 7.6.5. Although 72.7% of infants were evaluated by a doctor at admission, only one had a glycemia test (CBC could not be calculated at the basic level) and only 15.2% had the APGAR score. Abdominal examination could not be calculated at the basic level.

**Table 7.6.5** Medical record review in basic level facilities: infants with asphyxia

| | Basic | | |
|---|---|---|---|
| | N | % | SE |
| Vital signs checked | 33 | 18.2 | 6.7 |
| Gestational age recorded | 33 | 60.6 | 8.5 |
| Glycemia test performed | 33 | 3 | 3.0 |
| Neonate evaluated by a doctor at admission | 33 | 72.7 | 7.8 |
| Asphyxia managed according to the norm (meets all above criteria) | 33 | 0 | |

### 7.6.6 Asphyxia in hospitals

According to the country indicator manual, asphyxia is managed according to the standards if all vital signs were checked (pulse + respiratory rate + chest radiograph + APGAR), and all lab tests were performed (oxygen saturation level + glycemia + hemoglobin + C-reactive protein + erythrocyte sedimentation rate). APGAR could not be evaluated at the complete level.

Only one of the evaluated records of neonates with asphyxia reported management according to the standards because only one showed all lab tests performed. Although the majority of infants had all checks on the infant reported, only four had erythrocyte sedimentation rate (Table 7.6.6).

**Table 7.6.6** Medical record review in complete level facilities: infants with asphyxia

| | Complete | | |
|---|---|---|---|
| | N | % | SE |
| Vital signs checked | 26 | 61.5 | 9.5 |
| Lab tests performed | 26 | 3.8 | 3.8 |
| Asphyxia managed according to the norm (meets all above criteria) | 26 | 3.8 | 3.8 |

# 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 certain items available 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 |
| Incinerator at facility | 41 | 12.2 | 5.1 | 0 | 15 | 6.7 | 6.4 | 0 | 4 | 0 | |
| Contract with other facility for biohazard disposal | 36 | 25 | 7.2 | 0 | 14 | 71.4 | 12.1 | 0 | 4 | 100 | |
| Manual for decontamination | 40 | 10 | 4.7 | 1 | 14 | 78.6 | 11.0 | 1 | 4 | 100 | |

## 8.2 Decontamination and sterilization

Table 8.2.1 lists the different techniques used for decontaminating and sterilizing equipment. Units that chose “other” when responding to the decontamination question often specified that autoclave was the decontamination method of choice. Units that selected “other” when responding to the sterilization question often specified that they use a pressure sterilizer or heat the equipment in a pot.

**Table 8.2.1** Decontamination and sterilization

| | Ambulatory | | | Basic | | | Complete | | |
|---|---|---|---|---|---|---|---|---|---|
| | N | % | SE | N | % | SE | N | % | SE |
| Decontamination methods | | | | | | | | | |
| Submerged in disinfectant, then scrubbed with a brush, soap and water | 41 | 61 | 7.6 | 15 | 33.3 | 12.2 | 4 | 50 | 25 |
| Scrubbed with a brush, soap and water, then submerged in disinfectant | 41 | 39 | 7.6 | 15 | 46.7 | 12.9 | 4 | 0 | |
| Scrubbed with a brush, soap and water only | 41 | 14.6 | 5.5 | 15 | 0 | | 4 | 0 | |
| Submerged in disinfectant, without scrubbing with brush | 41 | 14.6 | 5.5 | 15 | 0 | | 4 | 0 | |
| Cleaned with water and soap, without scrubbing with a brush | 41 | 14.6 | 5.5 | 15 | 0 | | 4 | 0 | |
| Equipment never reused | 41 | 7.3 | 4.1 | 15 | 20 | 10.3 | 4 | 0 | |
| Other | 41 | 22 | 6.5 | 15 | 20 | 10.3 | 4 | 50 | 25 |
| Sterilization methods | | | | | | | | | |
| Dry heat | 41 | 0 | | 15 | 0 | | 4 | 25 | 22 |
| Autoclave | 41 | 41.5 | 7.7 | 15 | 100 | | 4 | 100 | |
| Boiling | 41 | 14.6 | 5.5 | 15 | 0 | | 4 | 0 | |
| Steam | 41 | 4.9 | 3.4 | 15 | 0 | | 4 | 25 | 22 |
| Chemical sterilization | 41 | 17.1 | 5.9 | 15 | 0 | | 4 | 25 | 22 |
| Processed away from facility | 41 | 4.9 | 3.4 | 15 | 0 | | 4 | 0 | |
| Facility doesn't sterilize | 41 | 0 | | 15 | 0 | | 4 | 0 | |
| Other | 41 | 43.9 | 7.8 | 15 | 26.7 | 11.4 | 4 | 0 | |

## Appendix A: SM2015 Health Facility Indicators

Four health facility performance indicators were measured at both the baseline and 18-month evaluations, and an additional two are measured at the 18-month evaluation. All indicators in the 18- month performance assessment were measured from the health facility observation checklist and questionnaire survey.

The table below (Table A.1.1) provides performance indicator values from both the baseline and the 18-month data collection rounds, where applicable. All specifics regarding these indicators have been detailed in the corresponding chapters of this report, where the components of these indicators are disaggregated, providing a more comprehensive assessment of progress. Table A.1.2 details monitoring indicators from baseline and 18-month data collection. Performance and monitoring indicator definitions can be found in the country indicator manual.

Note that baseline values have shifted slightly from previous reports; this is due to the recent inclusion of three referral hospitals that serve intervention areas in the baseline calculation.

**Table A.1.1** Facility performance indicators matrix and compliance with 18-month targets

| | | BASELINE EVALUATION | | | 18-MONTH EVALUATION | | | 18-MONTH TARGET | |
|---|---|---|---|---|---|---|---|---|---|
| # | Indicator | N | n | Percent (95% CI) | N | n | Percent (95% CI) | % | one-sided Z-test *p* value* |
| 7020** | Health facilities with permanent availability of inputs and equipment necessary for prenatal and postpartum care | 64 | 9 | 14.1% (6.6 - 25.0%) | 56 | 6 | 10.7% (4.0-21.9%) | 50% | <0.00001 |
| 7030 | Health facilities with permanent availability of inputs and equipment necessary for emergency obstetric and neonatal care | 17 | 0 | 0% (0 - 19.5%) | 12 | 1 | 8.3% (0.2-38.5%) | 50% | 0.0019 |
| 7010*** | Health facilities with permanent availability of inputs and equipment necessary for pediatric, vaccination and nutrition health care | 63 | 2 | 3.2% (0.4 - 11.0%) | 55 | 2 | 3.6% (.4-12.5%) | 50% | <0.00001 |
| 7050**** | Health facilities with stock-out of modern family planning supplies (oral, injectable, barrier, IUD) | 62 | 25 | 40.3% (28.1 - 53.6%) | 56 | 19 | 33.9% (21.8-47.8%) | 30% | 0.2606 |
| 7160 | Municipal Health Districts that can access data and generate regular reports in immunization, maternal, newborn, and child care | n/a | n/a | n/a | 14 | 13 | 92.9% (66.1 - 99.8%) | 70% | 0.969 |
| 8610 | Children aged 0-23 months who received growth monitoring according to their age in their most recent visit | n/a | n/a | n/a | 568 | 462 | 81.3% (77.9 - 84.5%) | 6% | 1 |

* One sided test of proportions to determine whether the estimate is lower than the target

**18-month evaluation does not incude antibiotics and is calculated with lab requirements, according to the indicator manual. At baseline, some lab equipment could not be calculated; follow-up indicator value comparable to baseline calculation is 14.3%

***Three month stock calculated for additional drugs at followup; influenza vaccine and HiB vaccine excluded at follow-up according to the indicator manual. Baseline indicator value comparable to followup calculation remains the same

****Three month stock of IUD not captured at baseline but is captured at follow-up

**Table A.1.2** Facility monitoring indicators matrix and comparison to baseline

| | | BASELINE* | | | 18-MONTH EVALUATION | | |
|---|---|---|---|---|---|---|---|
| # | Indicator | N | n | Percent (95% CI) | N | n | Percent (95% CI) |
| 3030 | Women of reproductive age (15-49) who received >= 4 ANC visits by qualified personnel according to best practices for a birth in the last two years | 110 | 1 | 0.9% (0.0-5.0%) | 548 | 16 | 2.9% (1.7-4.7%) |
| 3040 | Women of reproductive age (15-49) who received their first prenatal care visit by qualified personnel before 12 weeks gestation in the last two years | 62 | 7 | 11.3% (4.7-21.9%) | 518 | 63 | 12.2% (9.5-15.3%) |
| 4050 | Institutional postpartum patients evaluated and registered in clinical records, at least every 15 min during the first hour and 30 min until 2 hours after birth, and upon leaving hospital in the last two years | 161 | 21 | 13.0% (8.3-19.2%) | 266 | 128 | 48.1% (42.0-54.3%) |
| 4060 | Partograph filled according to the norm for births in the last two years | n/a | n/a | n/a | 88 | 65 | 73.9% (63.4-82.7%) |
| 4070** | Neonates with complications (low birth weight, prematurity, birth asphyxia and sepsis) managed according to standards in the last two years*** | 97 | 1 | 1.0% (0.0-5.6%) | 246 | 3 | 1.2% (0.2-3.5%) |
| 4080** | Women with obstetric complications (sepsis, hemorrhage, severe pre-eclampsia and eclampsia) managed according to the norm in the last two years | 95 | 7 | 7.4% (3.0-14.6%) | 278 | 18 | 6.5% (3.9-10.0%) |
| 4660 | Births attended in CAPs and CAIMIs managed according to the norm | 179 | 93 | 52.0% (44.4-59.5%) | 215 | 124 | 57.7% (50.8-64.4%) |

*Baseline numbers reflect three hospitals reclassified as intervention-area facilities

**At 18 months, obstetric and neonatal complications records evaluated at basic facilities in addition to hospitals

***Asphyxia calculation in hospitals changed from the baseline: administration of antibiotics no longer required, and Downes/Silverman score replaced by APGAR score