

SM2015 – Honduras

Baseline Health Facility

Data Quality Report

November 2013



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

About IHME

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

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Chapter 1 SURVEY METHODOLOGY

1.1 Overview

Salud Mesoamérica 2015 (SM2015) is a regional public-private partnership that brings together Mesoamerican countries, private foundations and bilateral and multilateral donors with the purpose of reducing health inequalities affecting the poorest 20% of the population in the region. Funding will focus on supply- and demand-side interventions, including changes in policy, evidence-based interventions, the expansion of proven and cost-effective health care 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 Honduras, 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) 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. Twinning of both surveys is a defining and innovative feature designed to most accurately capture prevalence estimates of select key indicators. In general terms, the objectives of the health facility survey are assessing facility conditions, evaluating service provision and utilization, and measuring quality of care. The medical record review (MRR) was implemented in order to capture historical data on the facilities' treatment practices by asking about various medical complications that mothers and infants experienced, along with how each case was treated. It also assessed the medical practices of the facilities before, during, and after uncomplicated births. Importantly, the facility survey 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 2013 baseline Honduras health facility survey

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

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

1.3.2 Methods for data collection

Data collection was coordinated in Honduras by Fundación FES under the supervision of the Institute for Health Metrics and Evaluation (IHME) at the University of Washington. The facility survey was 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. Data collection took place from January to June 2013. Data collection procedures were approved by the University of Washington Institutional Review Board, and all data were collected with previous authorization from the Ministry of Health of Honduras.

1.4 Sampling

For this evaluation, a sample of 90 health facilities was selected from a list of all facilities serving the 35 municipalities covered by the SM2015 initiative, located in the departments of Choluteca, Comayagua, Copán, Cortés, Intibucá, La Paz, Lempira, Ocotepeque, Olancho, and Valle. This list was constructed according to a referral network outlined by the Ministry of Health. All basic and complete facilities serving SM2015 areas were included in the sample with certainty, due to small numbers. Among all ambulatory facilities, the Fundación FES field data collection team identified those ambulatory facilities serving communities (*aldeas*) selected for the household survey to allow for maximal data linkage. A simple random sample was drawn from this shortened list of facilities to reach the quota of 60 intervention and 30 control facilities. In the case of intervention areas, there were insufficient ambulatory facilities serving areas selected for the household survey, so the intervention sample was supplemented with 20 ambulatory facilities serving SM2015 municipalities but not communities selected for the SM2015 household survey.

For the Medical Record Review, a systematic sampling method was used to reach the required sample of records in each facility, with some records for some types of complications manually oversampled for representativeness. Records for specific conditions (maternal and neonatal complications, deliveries, antenatal and postpartum care, child care) were selected according to a quota set considering the Essential Obstetric and Neonatal Care (EONC) level that each facility provides. Cases of maternal and neonatal complications were sampled at random from Ministry of Health (Secretaría de Salud) registries.

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 Honduras in January 2013. The nine surveyors had a medical background (physicians and nurses) and underwent three days of training. The training included an introduction to the initiative, proper conduct of survey, in-depth view of the instrument, and hands-on training on the CAPI software. Training was followed by a two-day pilot of operation and all components of the survey at actual 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 conduct 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 instrument and readily transmitted to the field. The new instrument survey would be ready for use on the following day of data collection.

1.5.4 Data analysis and report writing

Ongoing data analysis was carried out at IHME and new data were continuously incorporated. Analysis was completed using STATA version 12. Performance indicators were calculated at IHME following the indicator definition provided by the Inter-American Development Bank (IDB). A mid-survey report was submitted to the IDB with estimates on key for-payment indicators. This final baseline report includes aggregate information from both intervention and control areas. An appendix of tables referring only to intervention areas is included (Appendix A) as well as a separate appendix referring only to control areas (Appendix C). Appendices B and D demonstrate the performance of intervention-area and control-area facilities on key indicators.

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

2.1 General description of the facility

2.1.1 Type of health facility

A total of 90 facilities were evaluated (Table 2.1.1). Of the original sample, it was determined that one selected facility served both intervention and control areas. Based on additional information gathered from the field, this facility was reassigned to the intervention sample. In addition, one control facility split in two in the time between the generation of the list and the interview, and thus was surveyed as two separate facilities. Four facilities in intervention areas could not be interviewed and were replaced with randomly selected ambulatory facilities from the same municipality, or if there were no more facilities in that municipality, a neighboring one. Of those that were not realized from the original sample, one did not give consent and three others were inaccessible due to security reasons. The final sample included 59 facilities in intervention areas and 31 facilities in control areas. In total, there were 65 ambulatory health units (Centros de salud rural, “CESAR,” and Centros de salud modificados, “CESAMO”), 15 basic health units (Clínica Materno Infantil, “CMI”), and 10 complete health units (hospitals). These are further broken down by intervention and control areas in table 2.1.1.

Table 2.1.1 Types of facilities

Facility Type	Intervention	Control	Total
CESAR (ambulatory without doctor)	27	7	34
CESAMO (ambulatory with doctor)	18	13	31
CMI (basic)	8	7	15
Hospital (complete)	6	4	10
Total	59	31	90

2.1.2 Geographic representation

As shown in table 2.1.2, the facilities surveyed were located in 40 municipalities in a total of 10 departments.

Table 2.1.2 Geographical representation

Department name	Number of municipalities	Number of facilities
Choluteca	4	15
Comayagua	3	5
Copán	8	17
Cortés	2	3
Intibucá	7	14
La Paz	2	5
Lempira	9	15
Ocotepeque	1	1
Olancho	3	11
Valle	2	4

2.1.3 Medical record extraction

The health facility survey included a review of 2,008 medical records. The number and type of medical records reviewed varied depending on the type of facility and the services it provided. Records of maternal and neonatal complications were only found at the complete level. Records for diarrhea and pneumonia management were only reviewed in ambulatory facilities. (Table 2.1.3)

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

Medical records	Ambulatory	Basic	Complete
Antenatal care	244	10	33
Delivery	N/A	217	201
Postpartum	N/A	129	118
Maternal complications	N/A	0	283
Neonatal complications	N/A	0	282
Diarrhea	257	N/A	N/A
Pneumonia	234	N/A	N/A

2.1.4 Referrals

In response to “Do you usually receive referred patients from another health facility?” 40% of ambulatory units and 100% of basic and complete facilities responded positively.

2.1.5 Governing authority

All health facilities were public institutions from the Ministry of Health (Secretaría de Salud).

2.1.6 Licensing and certification

When asked if the health facility was licensed by the Ministry of Health, 14.4% responded “Yes,” 11.1% responded “In process,” 36.7% responded “No,” and 37.8% responded “Don’t know.” Of the facilities that responded “Yes” or “In process,” 30.4% presented a copy of the certificate during the interview.

2.2 Basic infrastructure

2.2.1 Electricity and water

89.2% of ambulatory health units had functional electricity. Of those, 94.8% used a central electricity supply, 1.7% used a private supply, and 3.4% used a solar generator. All basic and complete health units had functional electricity. 100% of basic and complete facilities used a central electricity supply. 20% of basic and 40% of complete facilities owned a generator.

Of ambulatory facilities, the majority (79.7%) had water piped into the facility. Most basic and complete facilities also had water piped in, at 86.7% and 80%, respectively, with bottled water being an important secondary source of water. Half of complete facilities had their own well.

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, and 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	65	89.2	3.8	15	100		10	100	
Source of electricity									
Central supply	58	94.8	2.9	14	100		10	100	
Private supply	58	1.7	1.7	14	0		10	0	
In-facility generator	58	0		14	21.4	11.0	10	40	15.5
Solar generator	58	3.4	2.4	14	0		10	0	
Other source	58	0		14	0		10	0	
DK/ DR	0			1			0		
Source of water									
Piped into facility	64	79.7	5.0	15	86.7	8.8	10	80	12.6
Public well	64	18.8	4.9	15	6.7	6.4	10	0	
Facility well	64	3.1	2.2	15	6.7	6.4	10	50	15.8
Unprotected well	64	0		15	6.7	6.4	10	0	
Hand pump	64	0		15	0		10	0	
Bottled water	64	6.3	3.0	15	26.7	11.4	10	30	14.5
Tanker truck	64	3.1	2.2	15	6.7	6.4	10	0	
Rain water	64	1.6	1.5	15	0		10	0	
Other	64	9.4	3.6	15	6.7	6.4	10	0	
DK/ DR	1			0			0		

2.2.2 Internet access

Only 13.3% of facilities had access to the internet. More specifically, 1.5%, 20%, and 80% of ambulatory, basic, and complete facilities, respectively, had internet access.

2.3 Personnel

2.3.1 Personnel in ambulatory units

Personnel are limited in CESAR health units, with only auxiliary nurses, midwives, and health promoters commonly found. On average, there were 1.5 auxiliary nurses, 1.6 midwives, and 1.1 health promoters per CESAR facility.

All CESAMO health units had general physicians, with a mean of 1.4 general physicians per facility. CESAMO facilities had a broader range of personnel including pharmacists, nurses, midwives, laboratory technicians, health promoters, and others. The following table (Table 2.3.1) details the personnel composition in both CESAR and CESAMO health facilities. The mean represents the average number of personnel reported per category by facility type.

Table 2.3.1 Personnel composition in ambulatory facilities

Personnel type	CESAR				CESAMO			
	N	mean	SE	DK/DR	N	mean	SE	DK/DR
General physician	34	0		0	31	1.4	0.8	0
Pediatrician	34	0		0	31	0		0
Nutritionist	34	0		0	31	0		0
Pharmacist	34	0		0	31	0.1	0.2	0
Nurse	34	0		0	31	0.5	0.6	0
Auxiliary nurse	34	1.5	0.7	0	31	2.7	1.5	0
Midwife	33	1.6	1.6	1	30	3.3	4.2	1
Social worker	34	0		0	31	0		0
Laboratory technician	34	0		0	31	0.3	0.5	0
Health promoter	34	1.1	0.3	0	31	2.8	5.8	0
Other	23	0.1	0.4	0	28	0.5	0.5	0

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	Maternity Clinic				Hospital			
	N	mean	SE	DK/DR	N	mean	SE	DK/DR
General physician	15	4	4.3	0	10	19.8	14.9	0
Pediatrician	15	0		0	10	7.7	6.5	0
Nutritionist	15	0		0	10	0		0
Pharmacist	15	0		0	10	1.2	1.1	0
Nurse	15	0.6	0.5	0	10	32.2	27.6	0
Auxiliary nurse	15	6.1	2.9	0	10	124.2	70.3	0
Midwife	15	2.1	4.4	0	10	0		0
Social worker	15	0		0	10	1.3	1.8	0
Laboratory technician	14	0.3	0.5	1	10	9.9	5.2	0
Health promoter	15	1.3	4	0	10	0		0
Internist	15	0		0	10	3.4	2.2	0
Gynecologist	15	0		0	10	7.1	4.5	0
Surgeon	15	0		0	10	3.9	3.3	0
Anesthesiologist	15	0		0	10	0.8	0.8	0
Emergency medical technician	15	0		0	10	0		0
Radiology technician	15	0.1	0.3	0	10	7	4.3	0
Ambulance driver/polyvalent	15	1.5	1.2	0	10	3.3	2.8	0
Other specialties	13	0.1	0.3	0	9	1.4	2.2	1

2.3.3 24/7 availability of staff

Interviewers asked representatives at hospitals about availability of 24/7 staff. 100% of hospitals provided services 24/7. When asked if a physician was available on call 24/7, 80% of hospitals responded “Yes, everyday including weekends and holidays” and 20% responded “Yes, but only Monday to Friday and not on weekends or holidays, or only occasionally.” Representatives were also asked more specifically about the type of personnel available. 70% of hospitals had an obstetrician available and 22.2% had an anesthesiologist available 24/7. Only one hospital (10%) reported having 24/7 availability of both an obstetrician and an anesthesiologist.

2.3.4 Participation in training

In the health facility survey interview module, interviewers asked health facility representatives about trainings offered in the last year.

Table 2.3.4 Training courses offered by facilities in the last 12 months

Training offered in the last year	Ambulatory				Basic				Complete		
	N	%	SE	DK/DR	N	%	SE	DK/DR	N	%	SE
Antenatal and postpartum care	61	82	4.9	1	14	85.7	9.4	0	9	77.8	13.9
Basic emergency obstetric and neonatal care	60	66.7	6.1	1	13	92.3	7.4	0	9	100	
Family Planning	57	61.4	6.4	2	12	75	12.5	0	9	77.8	13.9
Integrated management of childhood illness (IMCI)	56	58.9	6.6	2	13	53.8	13.8	0	9	55.6	16.6
Immunization training	58	62.1	6.4	2	11	63.6	14.5	1	9	66.7	15.7
Routine care for labor and normal vaginal delivery	54	53.7	6.8	1	14	92.9	6.9	0	9	100	
Management of maternal complications	59	66.1	6.2	1	14	92.9	6.9	0	9	100	
Newborn care training	57	73.7	5.8	3	14	100		0	9	100	
Management of neonatal complications	60	66.7	6.1	1	14	100		0	9	100	

Chapter 3 CHILD HEALTH

3.1 Child services offered – a background

This chapter summarizes key indicators related to child health care. 96.7% of all health units in our sample provide child services. 100% of ambulatory and complete health units and 80% of basic health units report child health service provision. All ambulatory facilities provide vaccinations for children under 5, while 26.6% of basic facilities (maternity clinics) and 80% of complete facilities provide this service.

Table 3.1.1 Child health care services provision

Service	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Unit offers child services	65	100		15	80	10.3	10	100	
Unit vaccinates children under 5	65	100		15	26.7	11.4	10	80	12.6

3.2 Child health care equipment

In the health facility survey observation module, interviewers checked availability and functional status of inputs needed for child health care among children under 5 years old. Detailed in tables 3.2.1 and 3.2.2, interviewers checked availability and functional status of inputs needed for treatment of pneumonia and diarrhea among children under 5, availability of certain medications in the pharmacy, and stock-outs in the last three months. Depending on the level of health facility, requirements for equipment and child supplements varied. While many facilities had the necessary supplements available, none had all required equipment observed and functional on the day of the survey.

In CESAR health units, 20.6% had a functional standing balance or scale for children, 38.2% had a functional hand lamp, and 67.6% had a table for examination; however, 0% of CESARS had all of the aforementioned equipment. A similar scenario is observed in CESAMO health units, where 22.6% had a functional standing balance or scale for children, only 3.2% had a pediatric stethoscope, and 0% had both a functional child scale and a pediatric stethoscope. At the basic level, 0% of maternity clinics had a neonatal tensiometer.

3.2.1 Ambulatory

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

Equipment type	CESAR			CESAMO		
	N	%	SE	N	%	SE
Pediatric balance or scale	34	67.6	8.0	31	83.9	6.6
Standing balance or scale for children	34	20.6	6.9	31	22.6	7.5
Tallimeter or stadiometer	34	47.1	8.6	31	51.6	9.0
Stethoscope	34	85.3	6.1	31	71	8.1
Pediatric stethoscope	34	2.9	2.9	31	3.2	3.2
Oto-ophthalmoscope	34	5.9	4.0	31	35.5	8.6
Hand lamp	34	38.2	8.3	31	19.4	7.1
Stretcher or table for examination	34	67.6	8.0	31	90.3	5.3
Measuring tape	34	88.2	5.5	31	90.3	5.3
Nebulizer	34	82.4	6.5	31	93.5	4.4
Oral/axillary thermometer	34	97.1	2.9	31	90.3	5.3

3.2.2 Basic & Complete

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

Equipment type	Maternity Clinic			Hospital		
	N	%	SE	N*	%	SE
Pediatric balance or scale	15	73.3	11.4	9	100	
Standing balance or scale for children	15	33.3	12.2	9	55.6	16.6
Tallimeter or stadiometer	15	46.7	12.9	9	55.6	16.6
Pediatric tensiometer	15	40	12.6	9	33.3	15.7
Neonatal tensiometer	15	0		9	11.1	10.5
Pediatric stethoscope	15	26.7	11.4	9	22.2	13.9
Hand lamp	15	46.7	12.9	9	0	
Binaural stethoscope for newborns	15	6.7	6.4	9	0	
Reflex mallet	15	40	12.6	9	33.3	15.7
Negatoscope	15	6.7	6.4	9	0	
Oto-ophthalmoscope	15	73.3	11.4	9	77.8	13.9
Stretcher or table for examination	15	60	12.6	9	77.8	13.9
Measuring tape	15	86.7	8.8	9	66.7	15.7
Nebulizer	15	93.3	6.4	9	88.9	10.5

*Child health care equipment data missing for one hospital

3.3 Important drugs and supplements

Interviewers observed the availability of important drugs and supplements used for basic child health care, namely packets or envelopes of oral rehydration salts, ferrous sulfate drops, sulfate of zinc or gluconate of zinc, albendazole or mebendazole, and antibiotics. Tables 3.3.1 and 3.3.2 detail the availability of these on the day of the survey. If all drugs and supplements were available on the day of

the survey, interviewers went on to review records in order to verify stock of oral rehydration salts, sulfate of zinc/ gluconate of zinc, albendazole /mebendazole, and antibiotics in the previous three months. The stock of drugs and supplements in the previous three months was considered in the calculation of the performance indicator relating to continuous availability of supplies and equipment needed for child care, immunization, and nutrition.

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

Supplement type	CESAR			CESAMO		
	N	%	SE	N	%	SE
Packets/envelopes of oral rehydration salt	34	94.1	4.0	31	90.3	5.3
Ferrous sulfate drops	34	67.6	8.0	31	93.5	4.4
Zinc sulfate/gluconate	34	5.9	4.0	31	3.2	3.2
Albendazole/mebendazole	34	100		31	100	
Amoxicillin/erythromycin/penicillin	N/A	N/A	N/A	31	100	

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

Supplement type	Maternity Clinic			Hospital		
	N	%	SE	N	%	SE
Packets/envelopes of oral rehydration salt	15	80	10.3	10	100	
Ferrous sulfate drops	15	66.7	12.2	10	100	
Zinc sulfate/gluconato	15	13.3	8.8	10	0	
Albendazole/mebendazole	15	46.7	12.9	10	100	
Amoxicillin/erythromycin/penicillin*	15	93.3	6.4	N/A	N/A	N/A

*Amoxicillin/erythromycin/penicillin was not asked in this section for complete facilities

3.4 Pneumonia and diarrhea treatment

3.5 Diarrhea management

In the medical record review section's diarrhea module, records of children who had diarrhea in the last two years were selected systematically. This indicator is measured at the ambulatory level. Table 3.5.1 details the number of records in which oral rehydration salt (ORS) is provided or IV rehydration therapy is given.

Table 3.5.1 Children treated according to the degree of dehydration

	CESAR			CESAMO		
	N	%	SE	N	%	SE
ORS or IV rehydration therapy	143	99.3	0.7	114	95.6	1.9

3.6 Pneumonia management

In the medical record review section's pneumonia module, the interviewer selected records of children

with pneumonia. The interviewer recorded date of pneumonia diagnosis and dates of follow up. Table 3.6.1 shows children aged 0 to 59 months who were diagnosed with pneumonia and attended follow up appointment at two days in CESAR and CESAMO facilities.

Table 3.6.1 Children with pneumonia diagnosis and follow up at 2 days

	CESAR			CESAMO		
	N	%	SE	N	%	SE
Date of admission to date of follow up = 2 days	135	71.9	3.9	99	73.7	4.4

3.7 Education material

Table 3.7.1 lists some educational material observed either as cards handed to the caretaker or as illustration of disease management flowcharts hung on the unit walls.

Table 3.7.1 Child health education and awareness

Education material	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Printed materials on child growth and child development	64	43.8	6.2	15	20	10.3	9	33.3	15.7
Printed materials on danger signs and symptoms in children	64	45.3	6.2	15	33.3	12.2	9	22.2	13.9

Chapter 4 VACCINES

4.1 Vaccination services

When asked about vaccination services, 100%, 26.7%, and 80% of ambulatory, basic, and complete health facilities reported that they do vaccinate children, respectively. Interviewers also observed and recorded the setting of the room used for immunization; while most ambulatory and basic facilities provide a private room with visual and auditory privacy, 30% of hospitals provide this. Hospitals tend to provide non-private rooms with auditory and visual privacy (70%) (Table 4.1.1).

Table 4.1.1 Vaccination services

	Ambulatory			Basic			Complete		
	N*	%	SE	N	%	SE	N	%	SE
Unit vaccinates children under 5	65	100		15	26.7	11.4	10	80	12.6
Immunization room									
Private room with visual and auditory privacy	63	81	4.9	15	80	10.3	10	30	14.5
Non-private room without auditory or visual privacy	63	14.3	4.4	15	6.7	6.4	10	70	14.5
Visual privacy only	63	3.2	2.2	15	6.7	6.4	10	0	
No privacy	63	1.6	1.6	15	0		10	0	
Does not provide this service	63	0		15	6.7	6.4	10	0	

*Immunization room data missing for two ambulatory facilities

4.2 Vaccine logistics

4.2.1 Storage

In general, most facilities that offer child vaccine services also store vaccines within the facility. There were three CESAR health units and one maternity clinic that do not store vaccines. For two of the CESAR health units and the maternity clinic, vaccines are picked up from another facility. For one CESAR health unit, vaccines are delivered when services are being provided (Table 4.2.2).

4.2.2 Demand and supply

In general, ambulatory facilities and complete facilities order vaccine supplies as determined by themselves, but only two-thirds of basic facilities determine their own needs when ordering. All facilities order the same quantity each time they order, and almost all ambulatory and basic facilities order more than once a week. While supplies arrive less than a week after ordering for all basic and complete facilities, 30.6% of CESAR and CESAMO facilities report that supplies take one to two weeks to arrive. All basic facilities report always receiving the amount they ordered, while 80.6% of ambulatory facilities and 66.7% of complete facilities report always receiving the amount they ordered (Table 4.2.2).

Table 4.2.2 Vaccine demand and supply

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Storage									
Stored in facility	65	95.4	2.6	4	75	21.6	8	100	
Picked up from another facility	65	3.1	2.1	4	0		8	0	
Delivered when services are being provided	65	1.5	1.5	4	25	21.6	8	0	
None of the above	65	0		4	0		8	0	
Demand and Supply									
Ordering Strategy									
Determines own needs	62	98.4	1.6	3	66.7	27.2	8	100	
Need determined elsewhere	62	1.6	1.6	3	33.3	27.2	8	0	
Both(differ by vaccine)	62	0		3	0		8	0	
Quantity to order strategy									
Order same amount	62	100		3	100		8	100	
Different per vaccine	62	0		3	0		8	0	
Time to order strategy									
Fixed time, > once/week	62	96.8	2.2	3	100		8	50	17.7
Fixed time, < once/week	62	0		3	0		8	25	15.3
Order when needed	62	3.2	2.2	3	0		8	25	15.3
Time to receive supplies									
< 1 week	62	69.4	5.8	3	100		7	100	
1-2 weeks	62	30.6	5.8	3	0		7	0	
> 2 weeks	62	0		3	0		7	0	
DK/DR	0						1		
Reception of quantity ordered									
Always	62	80.6	5.0	3	100		6	66.7	19.3
Almost always	62	19.4	5.0	3	0		6	33.3	19.3
Almost never	62	0		3	0		6	0	
DK/DR	0						2		

4.2.3 Equipment

All health facilities use single-use syringes for vaccine administration (Table 4.2.3).

Table 4.2.3 Injection equipment

Syringe type	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Single use	63	100		14	100		10	100	
Sterilizable	63	0		14	0		10	0	
Auto disposable	63	0		14	0		10	0	
Other	63	0		14	0		10	0	

4.3 Vaccines observed

Table 4.3.1 indicates the percentage of facilities at which at least one unit of a specified vaccine was observed by the surveyors at the time of the survey. In general, ambulatory facilities were well-stocked when it came to vaccines. However, only 10.9% carried the influenza vaccine on the day of the survey. Only BCG, HepB, and Hib were observed at basic facilities. DPT, HepB, and Hib vaccines were only checked for if the pentavalent vaccine was not in stock.

Table 4.3.1 Vaccine stocks observed

Vaccine type	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Pentavalent*	64	98.4	1.5	14	0		9	55.6	16.6
MMR*	64	96.9	2.2	14	0		9	44.4	16.6
Polio	64	98.4	1.5	14	0		9	44.4	16.6
Influenza	64	10.9	3.9	14	0		9	44.4	16.6
Rotavirus	64	95.3	2.6	14	0		9	44.4	16.6
Pneumococcal conjugate	64	96.9	2.2	14	0		9	44.4	16.6
BCG	64	87.5	4.1	14	64.3	12.8	9	100	
DPT alone	2	0		14	0		4	0	
HepB alone	2	0		14	42.9	13.2	4	50	25
Hib alone	2	0		14	42.9	13.2	4	50	25

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

4.4 Cold chain

Table 4.4.1 displays the availability of equipment necessary for the storage and preservation of vaccines. A functional electric refrigerator was observed in most facilities, as well as some type of thermometer for vaccine monitoring.

Table 4.4.1 Cold chain characteristics

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Storage									
Electric fridge	65	90.8	3.6	14	92.9	6.9	10	100	
Kerosene fridge	65	0		14	0		10	0	
Gas fridge	65	1.5	1.5	14	0		10	0	
Solar fridge	65	0		14	0		10	0	
Cold box	65	69.2	5.7	14	50	13.4	10	80	12.6
Any of the above	65	95.4	2.6	14	92.9	6.9	10	100	
Thermometers									
Digital thermometers	65	61.5	6.0	14	71.4	12.1	10	50	15.8
Alcohol thermometers	65	0		14	0		10	0	
Other thermometers	65	64.6	5.9	14	35.7	12.8	10	70	14.5
Any of the above	65	95.4	2.6	14	85.7	9.4	10	100	

Chapter 5 FAMILY PLANNING

5.1 Service provision

All health units provided family planning services in-facility (Table 5.1.1). Interviewers recorded the setting of the room used for family planning services, finding that all hospitals and most ambulatory units offered private rooms for patients seeking family planning services. Two-thirds of basic facilities offered a private room, while 26.7% instead had a non-private room with visual and auditory privacy.

Table 5.1.1 Family planning (FP) services provision

	Ambulatory			Basic			Complete		
	N*	%	SE	N	%	SE	N	%	SE
Offers FP services	65	100		15	100		10	100	
FP room									
Private room with visual and auditory privacy	64	93.7	3.1	15	66.7	12.2	10	100	
Non-private room without auditory or visual privacy	64	1.6	1.6	15	26.7	11.4	10	0	
Visual privacy only	64	1.6	1.6	15	0		10	0	
No privacy	64	3.2	2.2	15	0		10	0	
Other	64	0		15	6.7	6.4	10	0	
DK/DR	1			0			0		

*There was one ambulatory facility that did not complete the family planning section

5.2 Logistics

Contraceptive methods are provided by all facilities. Almost all facilities store contraceptive methods in-house, while a small percentage (3.1% of ambulatory facilities and 6.7% of basic facilities) have contraceptives delivered during service provision (Table 5.2.1).

Table 5.2.1 Family planning (FP) storage

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
FP Storage									
Yes, stores contraceptives	65	96.9	2.1	15	93.3	6.4	10	100	
No, delivered when services are being provided	65	3.1	2.1	15	6.7	6.4	10	0	

5.3 Observed contraception methods and reported family planning services

5.3.1 Observed contraception methods and reported family planning services in ambulatory facilities

Table 5.3.1 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 in both facility types are male condoms, the slow release progestin injectable, and the combined oral pill. The table also shows reported availability of pregnancy tests and a trained doctor to perform IUD insertion. Most ambulatory units reported offering pregnancy tests. Less than half (45.5%) of CESAR units report a doctor trained in IUD insertion on staff, but 93.5% of CESAMO units report such a doctor on staff.

Table 5.3.1 Observed contraception methods and reported services in ambulatory facilities

	CESAR				CESAMO		
	N	%	SE	DK/DR	N	%	SE
Observed FP methods							
Any pill	34	100			31	93.5	4.4
Combined oral pill	34	97.1	2.9		30	83.3	6.8
Progestin only pill	34	2.9	2.9		30	13.3	6.2
Any injectable	34	97.1	2.9		31	93.5	4.4
Combined injectable (1 month)	34	0			30	0	
Progestin only injectable (3 months)	34	97.1	2.9		30	96.7	3.3
Male condom	34	97.1	2.9		30	96.7	3.3
Female condom	34	0			30	0	
IUD*	34	41.2	8.4		30	93.3	4.6
Spermicide	34	0			30	0	
Diaphragm	34	0			30	3.3	3.3
Emergency contraception pill	34	0			30	0	
Reported Services							
Offers pregnancy tests	34	91.2	4.9	0	31	96.8	3.2
Trained doctor to perform IUD insertion	33	45.5	8.7	1	31	93.5	4.4

*Intrauterine device

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

All hospitals surveyed stocked combined oral pills, progestin-only injectables, male condoms, and IUDs. The most popular contraceptive methods in CMI were male condoms (93.3%), IUDs (73.3%), and progestin-only injectables (73.3%). All hospitals reported pregnancy tests, while only 66.7% of CMIs reported the same. No maternity clinics reported doctors trained in tubal ligation or vasectomy. Among hospitals, 90% and 80% reported doctors trained in tubal ligation and vasectomy, respectively (Table 5.3.2).

Table 5.3.2 Observed contraception methods and reported services in basic and complete facilities

	Maternity Clinic			Hospital			
	N	%	SE	N	%	SE	DK/DR
Observed FP methods							
Any pill	15	73.3	11.4	10	100		
Combined oral pill	15	66.7	12.2	10	100		
Progestin only pill	15	13.3	8.8	10	10	9.5	
Any injectable	15	80	10.3	10	100		
Combined injectable (1 month)	15	13.3	8.8	10	0		
Progestin only injectable (3 months)	15	73.3	11.4	10	100		
Male condom	15	93.3	6.4	10	100		
Female condom	15	0		10	0		
IUD*	15	73.3	11.4	10	100		
Spermicide	15	0		10	0		
Diaphragm	15	0		10	0		
Emergency contraception pill	15	0		10	0		
Implant	15	0		10	0		
Reported services							
Offers pregnancy test	15	66.7	12.2	9	100		1
Trained doctor to perform tubal ligation	15	0		10	90	9.5	0
Trained doctor to perform vasectomy	15	0		10	80	12.6	0

*Intrauterine device

5.4 Composite FP

The composite family planning indicator includes facilities that have, as observed by surveyors at the time of the survey, the following family planning methods and no stock-out of these methods in the last 1 month + 2 months + 3 months: male condom, any oral pill, any injectable, and IUD (Table 5.4.1, Table 5.4.2). Only CESAR facilities were not required to demonstrate IUDs for this indicator.

Table 5.4.1 Family planning in ambulatory facilities

	CESAR			CESAMO		
	N	%	SE	N	%	SE
Composite FP indicator	33	87.9	5.8	30	83.3	6.9
Availability of methods on the day of the survey	33	93.9	4.2	30	90	5.6
No stock out in the last 1 month + 2 months + 3 months	33	87.9	5.8	30	83.3	6.9

Table 5.4.2 Family planning in basic and complete facilities

	Maternity Clinic			Hospital		
	N	%	SE	n	%	SE
Composite FP indicator	15	60	13.1	10	90	10
Availability of methods on the day of the survey	15	60	13.1	10	100	
No stock out in the last 1 month + 2 months + 3 months	15	60	13.1	10	90	10

5.5 Teaching and awareness

Table 5.5.1 illustrates the percent of facilities that promote family planning through counseling, teaching, and educational graphics posted in the facility. All facilities offer individual family planning counseling, and most also offer group family planning counseling. Ambulatory units (90.8%) were most likely to educate on natural family planning methods, compared to basic (86.7%) and complete facilities (77.8%).

Table 5.5.1 Teaching and awareness on family planning and sexually transmitted infections (STIs)

	Ambulatory			Basic			Complete			
	N	%	SE	N	%	SE	N	%	SE	DK/DR
Individual FP counseling	65	100		15	100		10	100		0
Group FP counseling	65	98.5	1.5	15	93.3	6.4	10	100		0
FP posters on walls of facility	63	81	4.9	15	73.3	11.4	10	90	9.5	0
STI/HIV posters on walls of facility	63	71.4	5.7	15	60	12.6	10	60	15.5	0
Education for natural family planning methods	65	90.8	3.6	15	86.7	8.8	9	77.8	13.9	1

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

6.1 ANC – PPC service provision

Almost all ambulatory facilities (98.5%) offer antenatal care, and all basic and complete facilities offer postnatal care. All basic and complete facilities reported a private room with auditory and visual privacy for ANC/PNC service provision, while 96.8% of ambulatory facilities offer the same (Table 6.1.1).

Table 6.1.1 ANC – PPC service provision

	Ambulatory			Basic			Complete		
	N	%	SE	N*	%	SE	N	%	SE
Offers ANC services	65	98.5	1.5	15	13.3	8.8	10	50	15.8
Offers PPC services	0	n/a	n/a	15	100		10	100	
ANC - PPC room									
Private room with auditory and visual privacy	63	96.8	2.2	12	100		10	100	
Non-private room without auditory or visual privacy	63	0		12	0		10	0	
Visual privacy only	63	3.2	2.2	12	0		10	0	
No privacy	63	0		12	0		10	0	
DK/DR	0			2			0		

*Missing ANC PPC room data for one basic facility

6.2 ANC – PPC equipment

Table 6.2.1 indicates the percentage of ambulatory facilities where specific ANC equipment was present at the time of the survey and was observed as functional by a surveyor. In both facility types, a tallimeter/stadiometer was least likely to be present.

For basic and complete facilities, the tallimeter/stadiometer was also the rarest equipment. The next-rarest equipment types in hospitals were stethoscopes and obstetrical tape.

Table 6.2.1 Observed and functional ANC equipment in ambulatory facilities

Equipment type	CESAR			CESAMO		
	N	%	SE	N	%	SE
Standing scale	34	82.4	6.5	30	90	5.5
Tallimeter or stadiometer	34	20.6	6.9	30	30	8.4
Gynecological exam table (bed)	34	82.4	6.5	30	96.7	3.3
Obstetrical tape	34	97.1	2.9	30	100	
Perinatal maternal medical history*	34	97.1	2.9	28	100	
Perinatal maternal card*	34	97.1	2.9	28	100	

*Missing data on maternal medical history and maternal card for two CESAMO health units

Table 6.2.2 Observed and functional ANC equipment in basic and complete facilities

Equipment type	CMI			Hospital		
	N	%	SE	N	%	SE
Standing scale	13	76.9	11.7	10	90	9.5
Tallimeter or stadiometer	13	23.1	11.7	10	10	9.5
Gynecological exam table (bed)	13	92.3	7.4	10	100	
Obstetrical tape	13	76.9	11.7	10	70	14.5
Gooseneck or hand lamp for pelvic exams	13	84.6	10.0	10	100	
Blood pressure apparatus	13	92.3	7.4	10	80	12.6
Stethoscope	13	92.3	7.4	10	70	14.5
IUD insertion kit	13	92.3	7.4	10	90	9.5
Perinatal maternal medical history	12	83.3	10.8	10	80	12.6
Perinatal maternal card	12	91.7	8.0	10	80	12.6

6.3 ANC – PPC medical record review

For this module of the medical record review, records of women who received antenatal and postpartum care in the health facility in the last two years are selected systematically and reviewed.

6.3.1 First ANC visit

Table 6.3.1 shows the percentage of women of reproductive age (15-49) whose first prenatal visit by a doctor or nurse was before 12 weeks gestation in the last two years. About half of the records reviewed at all facility types indicated that the woman's first prenatal visit came before 12 weeks gestation.

Table 6.3.1 First prenatal visit before 12 weeks of gestational age

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
First prenatal visit by a doctor or nurse before 12 weeks gestation	200	52	3.5	9	55.6	16.6	30	46.7	9.1

6.3.2 Antenatal care according to the standards

The composite ANC indicator includes women who had their most recent pregnancy in the last two years and attended the health center for prenatal care, receiving at least four prenatal care visits by a doctor or nurse according to the best practices in their most recent pregnancy. Best practices include: physical checkups (weight + blood pressure + fundal weight) and fetal checkups (fetal heart + rate fetal movement) during each visit and lab tests performed (Blood group + Rh factor + Blood for glucose + HIV test + VDRL + Hb level + urinalysis) at least once. Table 6.3.2 shows that, while most health centers

recorded that they checked the vital signs of the mothers and that they performed fetal checkups when gestational age is greater than 20 weeks, only 37.9% recorded that they performed all lab tests at least once.

Table 6.3.2 Composite ANC indicator in ambulatory facilities

	Ambulatory		
	N	%	SE
At least 4 recorded antenatal care visits	200	84	2.6
Recorded visit with a doctor or nurse	200	88.5	2.3
Vital signs checked during visit	200	98.5	0.9
Fetal checkups if gestational age is > 20 weeks	19	100	
All lab tests done at least once	200	34.5	3.4
Composite ANC (meets all criteria listed above)	200	26	3.1

6.3.3 Postpartum care according to the standards

Table 6.3.3 shows the percentage of medical records that report adherence to standards of care for postpartum patients that include checkups at least every 15 minutes during the first hour and every 30 minutes until two hours after birth and when leaving the hospital in the last two years. According to the standards, systolic blood pressure, diastolic blood pressure, temperature, and pulse are evaluated and registered four times in the first hour and two times in the second hour.

Table 6.3.3 Postpartum care in basic and complete facilities

	Basic			Complete		
	N	%	SE	N	%	SE
Postpartum care according to the standards	129	77.5	3.7	118	58.5	4.5

6.4 Prevalence of C-section

In the health facility survey interview module, number of C-Sections in the last two years is asked of the manager of health facility in all basic and complete facilities. The total number of births reported was 107,858. Of these, 21.7% were C-Sections.

6.5 Delivery medical record review

6.5.1 Partograph review

In the medical record review section, interviewers recorded the information presented in the partograph in records selected for delivery care.

Table 6.5.1 Partograph review

Items checked	Basic			Complete		
	N	%	SE	N	%	SE
Patient name	217	94	1.6	201	74.1	3.1
Curve is completed until the moment of birth	217	90.3	2.0	201	69.7	3.2
Interpretation of the real curve in respect of warning curve	217	82.5	2.6	201	55.7	3.5
Graphical representation of fetal heart rate	217	88.9	2.1	201	67.7	3.3
Interpretation of changes in fetal heart rate	217	42.4	3.3	201	28.4	3.2
Graph of the frequency of uterine contractions	217	88.5	2.2	201	68.7	3.3
Interpretation of changes in uterine contraction	217	42.9	3.4	201	27.4	3.1
Systolic blood pressure	217	92.2	1.8	201	69.7	3.2
Diastolic blood pressure	217	91.7	1.9	201	69.7	3.2
Pulse	217	92.2	1.8	201	67.2	3.3
Position of the baby	217	87.1	2.3	201	64.7	3.4
Contractions intensity	217	62.7	3.3	201	51.2	3.5
Location of the pain	217	61.8	3.3	201	36.8	3.4
Intensity of the pain	217	91.2	1.9	201	64.2	3.4
All checks recorded	217	0		201	0	

6.5.2 Active management of delivery

During the review of delivery medical records in basic and complete facilities, interviewers reported administration of 10 IU of intramuscular oxytocin after deliveries in the last two years. 95.3% of records reported the administration of oxytocin or another uterotonic after delivery.

Chapter 7 MATERNAL AND NEONATAL HEALTH: COMPLICATIONS

7.1 Emergency obstetric and neonatal care service provision

The majority of facilities report providing auditory and visual privacy to their patients; 90% of hospitals and 86.7% of maternity clinics provide private rooms (Table 7.1.1).

Table 7.1.1 Emergency obstetric and neonatal care service provision

	Maternity Clinic			Hospital		
	N	%	SE	N	%	SE
Emergency room						
Private room with visual and auditory privacy	15	86.7	8.8	10	90	9.5
Non-private room without auditory or visual privacy	15	6.7	6.4	10	10	9.5
Visual privacy only	15	0		10	0	
No privacy	15	0		10	0	
Don't provide this service	15	6.7	6.4	10	0	

7.2 Supplies and equipment needed for emergency obstetric and neonatal care

In the health facility survey observation module, interviewers checked availability of inputs in the emergency obstetric and neonatal care room, the availability of certain medications in the pharmacy, and stock-out of some of those medications in the last three months. In order to meet criteria, health facilities should have all inputs from emergency obstetric and neonatal care rooms and no stock out of medications in the last one, two, or three months.

7.2.1 Equipment needed for emergency obstetric and neonatal care in maternity clinics

Table 7.2.1 Observed and functional equipment in maternity clinics

Equipment type	N	CMI	
		%	SE
Blood pressure apparatus	14	57.1	13.2
Stethoscope	14	71.4	12.1
Portable doppler/Pinard stethoscope	14	78.6	11.0
Autoclave/dry heat sterilizer	14	92.9	6.9
Oxygen tank	14	85.7	9.4
Resuscitation bag for adult	14	64.3	12.8
Neonatal resuscitation bag	14	92.9	6.9
Laryngoscope	14	57.1	13.2
MVA kit	14	0	
Central oxygen supply	14	0	

7.2.2 Drugs needed for emergency obstetric and neonatal care in maternity clinics

Table 7.2.2 details the availability of drugs for emergency obstetric and neonatal care in maternity clinics as observed by interviewers on the day of the survey. If all were observed, interviewers went on to review the stock of some of these drugs in the previous three months. The stock-out of ergometrine/oxytocin, gentamicin, and magnesium sulfate in the previous three months was considered in the calculation of the performance indicator relating to maternity clinics with continuous availability of supplies needed for emergency obstetric and neonatal care.

Table 7.2.2 Availability of drugs for emergency obstetric and neonatal care in maternity clinics on the day of the survey

Drug type	N	CMI	
		%	SE
Ampicillin 1 gr IV	15	73.3	11.4
Dexamethazone	15	53.3	12.9
Ergometrine 0.2 mg	15	26.7	11.4
Gentamicin 80 mg	15	86.7	8.8
Hydralazine 20 mg	15	66.7	12.2
Magnesium sulfate	15	93.3	6.4
Nitrofuratoin 100 mg	15	6.7	6.4
Oxytocin 5 IU/10 IU	15	93.3	6.4
Penicillin G	15	40	12.6

7.2.3 Supplies and equipment needed for emergency obstetric and neonatal care in hospitals

Table 7.2.3 Observed and functional equipment for emergency obstetric and neonatal care in hospitals

Equipment type	N	Hospital	
		%	SE
Blood pressure apparatus	10	70	14.5
Stethoscope	10	50	15.8
Pediatric/neonatal stethoscope	10	20	12.6
Portable doppler/pinard stethoscope	10	100	
Autoclave/dry heat sterilizer	10	70	14.5
Oxygen tank	10	90	9.5
Resuscitation bag for adult	10	80	12.6
Neonatal resuscitation bag	10	90	9.5
Laryngoscope	10	100	
MVA kit	10	80	12.6
Anesthesia equipment	10	70	14.5
Starter kit for curettage	10	90	9.5

7.2.4 Drugs needed for emergency obstetric and neonatal care in hospitals

Table 7.2.4 details the availability of drugs for emergency obstetric and neonatal care in hospitals as observed by interviewers on the day of the survey. If all were observed, interviewers went on to review the stock of cephalixin 500 mg and ergometrine 0.2mg IM-IV/oxytocin 5 IU IM-IV in the previous three months.

Table 7.2.4 Availability of drugs for emergency obstetric and neonatal care in hospitals on the day of the survey

Drug availability	Hospitals		
	N	%	SE
Adrenaline	10	90	9.5
Any antibiotic*	10	100	
Amp atropine. 1 mg/ml and epinephrine	10	100	
Sulfato atropine 1 mg/ml	10	90	9.5
Sodium bicarbonate 4.2% (5 mEq/10mL)	10	90	9.5
Dexamethasone	10	50	15.8
10mg Diazepam IM-IV	10	100	
Sodium diphenylhydantoin (Phenytoin)	10	90	9.5
Ergometrine 0.2mg IM-IV/oxytocin 5 IU IM-IV	10	100	
100mg sodium pentobarbital IV	10	90	9.5
Furosemide	10	100	
Any antihypertensive**	10	100	
Naloxone hydrochloride 0.4 mg/mL	10	60	15.5
Ketamine hydrochloride injection 50 mg/ml	10	70	14.5
Isotonic crystalloid (saline solution or Ringer's lactate)	10	90	9.5
Magnesium sulfate 10% or 50 IV-IM	10	90	9.5
Midazolam hydrochloride 5mg/5ml	10	70	14.5
Nitrous oxide gas	10	0	
Normal saline wash	10	70	14.5
100% Fco 250ml Sevofluran	10	80	12.6
Succinylcholine chloride (suxamethonium)	10	70	14.5
Tetracycline ointment	10	20	12.6
Sodium thiopental 1g	10	70	14.5

*Any antibiotic = Amoxicillin/ampicillin/amikacin sulfate/crystalline penicillin G/ceftriaxone/clindamycin/cephalexin/cefazolin/chloramphenicol/dicloxacillin/doxycycline/gentamicin/metronidazole

**Any antihypertensive = Hydralazine/hydralazine hydrochloride/alphamethyl dopa/propranolol/nifedipine

7.3 Management of obstetric complications

7.3.1 Hemorrhage

According to the country indicator manual, hemorrhage is managed according to the norm in hospitals if vital signs were recorded (diastolic and systolic blood pressure), lab tests were performed (Ht + Hb + PT

+ PTT + platelet count), oxytocin or other uterotonic was administered, a cause of hemorrhage recorded, and the correct treatment administered and recorded. Correct treatment is as follows:

- If complicated abortion or retained placenta, then manual aspiration and uterine revision recorded
- If placenta previa, placental abruption, uterine rupture, or uterine atony, then Cesarean section or hysterectomy recorded
- If ectopic pregnancy or uterine atony, then laparotomy recorded
- If tears of the uterine canal or uterus, then surgical repair recorded

Table 7.3.1 Medical record review in hospitals: hemorrhage

	Maternal Hemorrhage		
	N	%	SE
Vital signs checked	120	90.8	2.6
Lab tests performed	120	4.2	1.8
Oxytocin/other uterotonic administered	120	61.7	4.4
Cause recorded	120	96.7	1.6
Correct treatment	120	40	4.5
Hemorrhage managed according to the norm (meets all above criteria)	120	0	

7.3.2 Pre-eclampsia

According to the country indicator manual, pre-eclampsia is managed according to the norm if vital signs were checked (diastolic and systolic blood pressure + pulse + respiratory rate + patellar reflex), lab tests were performed (urine protein + platelet count + aspartate aminotransferase + lactate dehydrogenase), outcome of pregnancy was recorded, and correct treatment was administered and recorded. Correct treatment is as follows:

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

Table 7.3.2 Medical record review in hospitals: pre-eclampsia

	Pre-eclampsia		
	N	%	SE
Vital signs checked	105	57.1	4.8
Lab tests performed	105	6.7	2.4
Correct treatment	105	69.5	4.5
Result of pregnancy recorded	105	84.8	3.5
Preeclampsia managed according to the norm (meets all above criteria)	105	4.8	2.1

7.3.3 Eclampsia

According to the country indicator manual, eclampsia is managed according to the norm if vital signs were checked (diastolic and systolic blood pressure + pulse + respiratory rate + patellar reflex), lab tests were performed (urine protein + platelet count + aspartate aminotransferase + lactate dehydrogenase), outcome of pregnancy was recorded, and correct treatment was administered and recorded. Correct treatment is as follows:

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

Table 7.3.3 Medical record review in hospitals: eclampsia

	Eclampsia		
	N	%	SE
Vital signs checked	17	47.1	12.1
Lab tests performed	17	5.9	5.7
Correct treatment	17	82.4	9.3
Outcome of pregnancy recorded	17	41.2	11.9
Eclampsia managed according to the norm (meets all above criteria)	17	0	

7.3.4 Sepsis

According to the country indicator manual, sepsis is managed according to the norm if vital signs were checked (temperature + diastolic and systolic blood pressure + pulse), antibiotics administered, and correct treatment was administered and recorded. Correct treatment is as follows:

- If septic abortion, then manual aspiration and uterine revision recorded
- If uterine perforation, then hysterectomy reported
- If uterine perforation, abscess, or infected ectopic pregnancy, then laparotomy recorded
- If tears of cervical canal or uterus, then surgical repair recorded

Table 7.3.3 Medical record review in hospitals: sepsis

	Maternal Sepsis Complications		
	N	%	SE
Vital signs checked	40	82.5	6.0
Antibiotics administered	40	95	3.5
Correct treatment	40	90	4.7
Sepsis managed according to the norm (meets all above criteria)	40	70	7.3

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

Table 7.3.5 Women treated to standards for sepsis, hemorrhage, pre-eclampsia, and eclampsia

	N	%	SE
Managed according to the norm	281	11.7	1.9

7.4 Management of neonatal complications

7.4.1 Low birth weight (LBW) and prematurity

According to the country indicator manual, low birth weight and prematurity are managed according to the norm if vital signs were checked (weight + respiratory rate + blood pressure + Silverman score), oxygen saturation level and blood glucose level checked, baby evaluated by a doctor, and correct treatment was administered and recorded. Correct treatment is as follows:

- Oxygen mask/oxygen hood/oxygen tank/mechanical ventilation/keeping in incubator recorded
- If respiratory rate greater than 80, then IV feeding recorded.

Table 7.4.1 Medical record review in hospitals: infants with LBW and prematurity

	Low birth weight		
	N	%	SE
Evaluated by a doctor at admission	54	100	
Weight + respiratory rate + oxygen saturation + silverman score + blood glucose level	54	5.6	3.1
Correct treatment	54	75.9	5.8
Indicator according to the norm (meets above criteria)	54	5.6	3.1

	Prematurity		
	N	%	SE
Evaluated by a doctor at admission	32	100	
Weight + respiratory rate + oxygen saturation + silverman score + blood glucose level	32	12.5	5.8
Correct treatment	32	96.9	3.1
Indicator according to the norm (meets above criteria)	32	12.5	5.8

7.4.2 Sepsis

According to the country indicator manual, sepsis is managed according to the norm if vital signs were

checked (temperature + blood pressure + pulse), oxygen saturation level was checked, lab tests were performed (C-reactive protein + leukocyte count and morphology), antibiotics were administered, and the baby was evaluated by a doctor.

Table 7.4.2 Medical record review in hospitals: infants with sepsis

	Sepsis		
	N	%	SE
Evaluated by a doctor at admission	137	100	
Temperature checked	137	93.4	2.1
Treatment with antibiotics	137	96.4	1.6
Lab tests performed	137	8	2.3
Indicator according to the norm (meets above criteria)	137	6.6	2.1

7.4.3 Asphyxia

According to the country indicator manual, asphyxia is managed according to the norm if vital signs were checked (respiratory rate + Silverman score), checks/lab tests performed (oxygen saturation level + Hb+ blood glucose level), antibiotics administered, and correct treatment was administered and recorded. Correct treatment is as follows:

- Oxygen mask/oxygen hood/oxygen tank/mechanical ventilation/keeping in incubator recorded

Table 7.4.3 Medical record review in hospitals: infants with asphyxia

	Asphyxia		
	N	%	SE
Evaluated by a doctor at admission	57	100	
Respiratory rate and Silverman score recorded	57	35.1	6.3
Lab tests performed	57	10.5	4.1
Correct procedure	57	91.2	3.8
Indicator according to the norm (meets above criteria)	57	3.5	2.4

7.4.4 Neonates with birth complications (sepsis, asphyxia, low birth weight, and prematurity) managed according to the norm in the last two years

Table 7.4.4 Infants treated to standards for sepsis, asphyxia, low birth weight, and prematurity

	N	%	SE
Managed according to the norm	278	6.5	1.5

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. The majority of ambulatory facilities (84.6%) reported an available incinerator, while 66.7% of basic facilities and only 10% of hospitals reported the same. 22.2% of hospitals that responded to the question stated that they have a contract with another facility for biohazard disposal, though only 7.7% of basic and 6.3% of ambulatory facilities report this. All hospitals, two-thirds of basic units, and 16.9% of ambulatory facilities report having a manual for decontamination (Table 8.1.1).

Table 8.1.1 Equipment for disposal

	Ambulatory				Basic				Complete			
	N	%	SE	DK/DR	N	%	SE	DK/DR	N	%	SE	DK/DR
Incinerator at facility	65	84.6	4.5	0	15	66.7	12.2	0	10	10	9.5	0
Contract with other facility for biohazard disposal	64	6.3	3.0	1	13	7.7	7.4	2	9	22.2	13.9	1
Manual for decontamination	59	16.9	4.9	6	12	66.7	13.6	3	10	100		0

8.1.2 Disposal methods

Table 8.1.2 demonstrates the methods used for disposal of sharps and biohazards. To dispose of sharps, burning in an incinerator was the most popular method for ambulatory (64.6%) and basic facilities (60%). Half of hospitals reported disposing of sharps away from their facility, while 60% of hospitals, 26.7% of basic facilities, and 29.2% of ambulatory facilities report using unlisted methods for sharps disposal. As for bandage/gauze/biohazard disposal, incineration was reported at 81.5% of ambulatory facilities, 60% of basic facilities, and 10% of hospitals. 60% of hospitals report disposing of their biohazard waste away from their facility, and 60% report using other methods.

Table 8.1.2 Disposal methods

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Sharps disposal									
Burned in incinerator	65	64.6	5.9	15	60	12.6	10	0	
Burned in open air	65	3.1	2.1	15	0		10	0	
Thrown away (not burned)	65	1.5	1.5	15	0		10	0	
Disposed of away from facility	65	12.3	4.1	15	13.3	8.8	10	50	15.8
Never have sharps	65	0		15	0		10	0	
Other	65	29.2	5.6	15	26.7	11.4	10	60	15.5
Bandage/biohazard disposal									
Burned in incinerator	65	81.5	4.8	15	60	12.6	10	10	9.5
Burned in open air	65	4.6	2.6	15	6.7	6.4	10	0	
Thrown away (not burned)	65	0		15	6.7	6.4	10	0	
Disposed of away from facility	65	12.3	4.1	15	20	10.3	10	60	15.5
Never have bandage/biohazard waste	65	0		15	0		10	0	
Other	65	7.7	3.3	15	20	10.3	10	60	15.5

8.2 Decontamination and sterilization

Table 8.2.1 lists the different techniques used for decontaminating and sterilizing equipment. The most commonly used decontamination method is submersion in disinfectant, followed by scrubbing with a brush, soap, and water. 81.5% of ambulatory facilities, 66.7% of basic facilities, and 80% of hospitals report use of this method. The next most commonly used method is scrubbing with a brush, soap, and water, followed by disinfectant submersion. All hospitals report autoclaving as a primary sterilization method, while 86.7% of basic facilities and 55.4% of ambulatory facilities report the same. The next most popular methods include steam sterilization (used in 30.8% of ambulatory facilities) and chemical sterilization (utilized in 30% of hospitals).

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	65	81.5	4.8	15	66.7	12.2	10	80	12.6
Scrubbed with a brush, soap and water, then submerged in disinfectant	65	6.2	3.0	15	26.7	11.4	10	10	9.5
Scrubbed with a brush, soap and water only	65	3.1	2.1	15	0		10	20	12.6
Submerged in disinfectant, without scrubbing with brush	65	7.7	3.3	15	6.7	6.4	10	0	
Cleaned with water and soap, without scrubbing with a brush	65	3.1	2.1	15	0		10	0	
Equipment never reused	65	0		15	0		10	0	
Other	65	0		15	0		10	0	
Sterilization methods									
Dry heat	65	15.4	4.5	15	6.7	6.4	10	0	
Autoclave	65	55.4	6.2	15	86.7	8.8	10	100	
Boiling	65	6.2	3.0	15	0		10	0	
Steam	65	30.8	5.7	15	6.7	6.4	10	0	
Chemical sterilization	65	0		15	0		10	30	14.5
Processed away from facility	65	0		15	0		10	0	
Facility doesn't sterilize	65	0		15	0		10	0	
Other	65	1.5	1.5	15	0		10	10	9.5

Appendix A: Intervention-area tables

Table A2.1.1 Types of facilities

Facility Type	Intervention
CESAR (ambulatory without doctor)	27
CESAMO (ambulatory with doctor)	18
CMI (basic)	8
Hospital (complete)	6

Table A2.1.2 Geographical representation

Department name	Number of municipalities	Number of facilities
Choluteca	4	15
Copán	5	8
Intibucá	5	10
La Paz	2	5
Lempira	5	9
Ocotepeque	1	1
Olancho	3	11

Table A2.1.3 Number of medical records by facility classification (EONC level)

Medical records	Ambulatory	Basic	Complete
Antenatal care	172	10	33
Delivery	N/A	121	114
Postpartum	N/A	82	75
Maternal complications	N/A	0	172
Neonatal complications	N/A	0	174
Diarrhea	177	N/A	N/A
Pneumonia	163	N/A	N/A

Table A2.2.1 Electricity and water

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Functional electricity	45	84.4	5.4	8	100		6	100	
Source of electricity									
Central supply	38	92.1	4.4	8	100		6	100	
Private supply	38	2.6	2.6	8	0		6	0	
In-facility generator	38	0		8	25	15.3	6	66.7	19.3
Solar generator	38	5.3	3.6	8	0		6	0	
Other source	38	0		8	0		6	0	
DK/ DR	0			0			0		
Source of water									
Piped into facility	44	75	6.5	8	75	15.3	6	83.3	15.2
Public well	44	22.7	6.3	8	0		6	0	
Facility well	44	4.5	3.1	8	12.5	11.7	6	66.7	19.3
Unprotected well	44	0		8	12.5	11.7	6	0	
Hand pump	44	0		8	0		6	0	
Bottled water	44	2.3	2.3	8	50	17.7	6	16.7	15.2
Tanker truck	44	2.3	2.3	8	0		6	0	
Rain water	44	2.3	2.3	8	0		6	0	
Other	44	6.8	3.8	8	12.5	11.7	6	0	
DK/ DR	1			0			0		

Table A2.3.1 Personnel composition in ambulatory facilities

Personnel type	CESAR				CESAMO			
	N	mean	SE	DK/DR	N	mean	SE	DK/DR
General physician	27	0		0	18	1.3	1.0	0
Pediatrician	27	0		0	18	0		0
Nutritionist	27	0		0	18	0		0
Pharmacist	27	0		0	18	0.1	0.3	0
Nurse	27	0		0	18	0.5	0.6	0
Auxiliary nurse	27	1.4	0.8	0	18	2.8	1.7	0
Midwife	26	1.4	1.5	1	17	1.2	2.0	1
Social worker	27	0		0	18	0		0
Laboratory technician	27	0		0	18	0.2	0.4	0
Health promoter	27	1.1	0.3	0	18	3.4	7.7	0
Other	17	0.1	0.3	0	16	0.5	0.5	0

Table A2.3.2 Personnel composition in basic and complete health units

Personnel type	Maternity Clinic			Hospital		
	N	mean	SE	N	mean	SE
General physician	8	3.6	1.9	6	16.3	6.9
Pediatrician	8	0		6	6.5	3.9
Nutritionist	8	0		6	0	
Pharmacist	8	0		6	0.8	0.8
Nurse	8	0.9	0.4	6	23.5	11.5
Auxiliary nurse	8	5.9	3.3	6	109.5	34.4
Midwife	8	4	6.9	6	0	
Social worker	8	0		6	0.5	0.6
Laboratory technician	8	0.7	0.6	6	9.3	6.0
Health promoter	8	3	6.0	6	0	
Internist	8	0		6	3.3	1.9
Gynecologist	8	0		6	6.7	4.1
Surgeon	8	0		6	3.5	3.2
Anesthesiologist	8	0		6	0.7	0.8
Emergency medical technician	8	0		6	0	
Radiology technician	8	0.3	0.6	6	5	3.7
Ambulance driver/polyvalent	8	2.1	1.3	6	2.5	1.5
Other specialties	7	0.3	0.6	6	1.2	1.6

Table A2.3.4 Training courses offered by facilities in the last 12 months

Training offered in the last year	Ambulatory				Basic			Complete		
	N	%	SE	DK/DR	N	%	SE	N	%	SE
Antenatal and postnatal care	43	83.7	5.6		8	87.5	11.7	6	66.7	19.3
Basic emergency obstetric and neonatal care	42	66.7	7.3		7	100		6	100	
Family Planning	40	60	7.8		6	66.7	19.3	6	66.7	19.3
Integrated management of childhood illness (IMCI)	40	57.5	7.8		7	57.1	18.7	6	50	20.4
Immunization training	42	57.1	7.6	1	6	66.7	19.3	6	50	20.4
Routine care for labor and normal vaginal delivery	39	48.7	8.0		8	100		6	100	
Management of maternal complications	42	64.3	7.4		8	100		6	100	
Newborn care training	42	78.6	6.3	1	8	100		6	100	
Management of neonatal complications	43	67.4	7.2		8	100		6	100	

Table A3.1.1 Child health care services provision

Service	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Unit offers child services	45	100		8	87.5	11.7	6	100	
Unit vaccinates children under 5	45	100		8	25	15.3	6	83.3	15.2

Table A3.2.1 Child health care equipment observed and functional in ambulatory facilities

Equipment type	CESAR			CESAMO		
	N	%	SE	N	%	SE
Pediatric balance or scale	27	63	9.3	18	88.9	7.4
Standing balance or scale for children	27	22.2	8.0	18	33.3	11.1
Tallimeter or stadiometer	27	55.6	9.6	18	61.1	11.5
Stethoscope	27	88.9	6.1	18	77.8	9.8
Pediatric stethoscope	27	3.7	3.6	18	5.6	5.4
Oto-ophthalmoscope	27	7.4	5.0	18	33.3	11.1
Hand lamp	27	40.7	9.5	18	27.8	10.6
Stretcher or table for examination	27	74.1	8.4	18	88.9	7.4
Measuring tape	27	96.3	3.6	18	88.9	7.4
Nebulizer	27	81.5	7.5	18	100	
Oral/axillary thermometer	27	100		18	94.4	5.4

Table A3.2.2 Child health care equipment observed and functional in basic and complete level health units

Equipment type	Basic			Complete		
	N	%	SE	N*	%	SE
Pediatric balance or scale	8	87.5	11.7	5	100	
Standing balance or scale for children	8	25	15.3	5	60	21.9
Tallimeter or stadiometer	8	62.5	17.1	5	60	21.9
Pediatric tensiometer	8	62.5	17.1	5	40	21.9
Neonatal tensiometer	8	0		5	0	
Pediatric stethoscope	8	25	15.3	5	20	17.9
Hand lamp	8	37.5	17.1	5	0	
Binaural stethoscope for newborns	8	12.5	11.7	5	0	
Reflex mallet	8	37.5	17.1	5	40	21.9
Negatoscope	8	0		5	0	
Oto-ophthalmoscope	8	87.5	11.7	5	80	17.9
Stretcher or table for examination	8	62.5	17.1	5	100	
Measuring tape	8	87.5	11.7	5	60	21.9
Nebulizer	8	100		5	80	17.9

*Child health care equipment data missing for one hospital

Table A3.3.1 Child health care observed drugs and supplements in ambulatory units

Supplement type	CESAR			CESAMO		
	N	%	SE	N	%	SE
Packets/envelopes of oral rehydration salt	27	96.3	3.6	18	88.9	7.4
Ferrous sulfate drops	27	59.3	9.5	18	88.9	7.4
Zinc sulfate/gluconate	27	7.4	5.0	18	0	
Albendazole/mebendazole	27	100		18	100	
Amoxicillin/erythromycin/penicillin	N/A	N/A	N/A	18	100	

Table A3.3.2 Child health care observed drugs and supplements in basic and complete units

Supplement type	Maternity Clinic			Hospital		
	N	%	SE	N	%	SE
Packets/envelopes of oral rehydration salt	8	100		6	100	
Ferrous sulfate drops	8	62.5	17.1	6	100	
Zinc sulfate/gluconate	8	12.5	11.7	6	0	
Albendazole/mebendazole	8	50	17.7	6	100	
Amoxicillin/erythromycin/penicillin*	8	100		N/A	N/A	N/A

*Amoxicillin/erythromycin/penicillin was not asked in this section for complete facilities

Table A3.5.1 Children treated according to the degree of dehydration

	CESAR			CESAMO		
	N	%	SE	N	%	SE
ORS or IV rehydration therapy	110	99.1	0.9	67	98.5	1.5

Table A3.6.1 Children with pneumonia diagnosis and follow-up within two days

	CESAR			CESAMO		
	N	%	SE	N	%	SE
Date of admission to date of follow up = 2 days	107	68.2	4.5	56	78.6	5.5

Table A3.7.1 Child health education and awareness

Education material	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Printed materials on child growth and child development	45	40	7.3	8	25	15.3	5	40	21.9
Printed materials on danger signs and symptoms in children	45	40	7.3	8	25	15.3	5	20	17.9

Table A4.1.1 Vaccination services

	Ambulatory			Basic			Complete		
	N*	%	SE	N	%	SE	N	%	SE
Unit vaccinates children under 5	45	100		8	25	15.3	6	83.3	15.2
Immunization room									
Private room with visual and auditory privacy	44	84.1	5.5	8	87.5	11.7	6	16.7	15.2
Non-private room without auditory or visual privacy	44	13.6	5.2	8	0		6	83.3	15.2
Visual privacy only	44	0		8	12.5	11.7	6	0	
No privacy	44	2.3	2.3	8	0		6	0	

*Immunization room data missing for one ambulatory facility

Table A4.2.2 Vaccine demand and supply

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Storage									
Stored in facility	45	93.3	3.7	2	50	35.4	5	100	
Picked up from another facility	45	4.4	3.1	2	0		5	0	
Delivered when services are being provided	45	2.2	2.2	2	50	35.4	5	0	
None of the above	45	0		2	0		5	0	
Demand and Supply									
Ordering Strategy									
Determines own needs	42	100		1	0		5	100	
Need determined elsewhere	42	0		1	100		5	0	
Both(differ by vaccine)	42	0		1	0		5	0	
Quantity to order strategy									
Order same amount	42	100		1	100		5	100	
Different per vaccine	42	0		1	0		5	0	
Time to order strategy									
Fixed time, > once/week	42	100		1	100		5	60	21.9
Fixed time, < once/week	42	0		1	0		5	20	17.9
Order when needed	42	0		1	0		5	20	17.9
Time to receive supplies									
< 1 week	42	59.5	7.6	1	100		5	100	
1-2 weeks	42	40.5	7.6	1	0		5	0	
> 2 weeks	42	0		1	0		5	0	
DK/DR	0						1		
Reception of quantity ordered									
Always	42	81	6.1	1	100		4	50	25
Almost always	42	19	6.1	1	0		4	50	25
Almost never	42	0		1	0		4	0	
DK/DR							1		

Table A4.2.3 Injection equipment

Syringe type	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Single use	44	100		8	100		6	100	
Sterilizable	44	0		8	0		6	0	
Auto disposable	44	0		8	0		6	0	
Other	44	0		8	0		6	0	

Table A4.3.1 Vaccine stocks observed

Vaccine type	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
MMR*	44	95.5	3.1	8	0		6	50	20.4
Pentavalent*	44	97.7	2.3	8	0		6	50	20.4
Polio	44	97.7	2.3	8	0		6	50	20.4
Influenza	44	9.1	4.3	8	0		6	33.3	19.3
Rotavirus	44	93.2	3.8	8	0		6	50	20.4
Pneumococcal conjugate	44	97.7	2.3	8	0		6	50	20.4
BCG	44	86.4	5.2	8	62.5	17.1	6	100	
DPT alone	1	0		8	0		3	0	
HepB alone	1	0		8	37.5	17.1	3	66.7	27.2
Hib alone	1	0		8	50	17.7	3	33.3	27.2

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

Table A4.4.1 Cold chain characteristics

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Storage									
Electric fridge	45	86.7	5.1	8	87.5	11.7	6	100	
Kerosene fridge	45	0		8	0		6	0	
Gas fridge	45	2.2	2.2	8	0		6	0	
Solar fridge	45	0		8	0		6	0	
Cold box	45	62.2	7.2	8	50	17.7	6	83.3	15.2
Any of the above	45	93.3	3.7	8	87.5	11.7	6	100	
Thermometers									
Digital thermometers	45	57.8	7.4	8	50	17.7	6	66.7	19.3
Alcohol thermometers	45	0		8	0		6	0	
Other thermometers	45	66.7	7.0	8	37.5	17.1	6	50	20.4
Any of the above	45	93.3	3.7	8	75	15.3	6	100	

Table A5.1.1 Family planning (FP) services provision

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Offers FP services	45	100		8	100		6	100	
FP room									
Private room with visual and auditory privacy	45	95.6	3.1	8	62.5	17.1	6	100	
Non-private room without auditory or visual privacy	45	2.2	2.2	8	25	15.3	6	0	
Visual privacy only	45	0		8	0		6	0	
No privacy	45	2.2	2.2	8	0		6	0	
Other	45	0		8	12.5	11.7	6	0	
DK/DR	0			0			0		

Table A5.2.1 Family planning (FP) storage

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
FP Storage									
Yes, stores contraceptives	45	95.6	3.1	8	87.5	11.7	6	100	
No, delivered when services are being provided	45	4.4	3.1	8	12.5	11.7	6	0	

Table A5.3.1 Observed contraception methods and reported services in ambulatory facilities

	CESAR				CESAMO		
	N	%	SE	DK/DR	N	%	SE
Observed FP methods							
Any pill	27	100			18	100	
Combined oral pill	27	96.3	3.6		18	83.3	8.8
Progestin only pill	27	3.7	3.6		18	16.7	8.8
Any injectable	27	100			18	94.4	5.4
Combined injectable (1 month)	27	0			18	0	
Progestin only injectable (3 months)	27	100			18	94.4	5.4
Male condom	27	96.3	3.6		18	94.4	5.4
Female condom	27	0			18	0	
IUD*	27	51.9	9.6		18	88.9	7.4
Spermicide	27	0			18	0	
Diaphragm	27	0			18	5.6	5.4
Emergency contraception pill	27	0			18	0	
Reported Services							
Offers pregnancy tests	27	88.9	6.1	0	18	94.4	5.4
Trained doctor to perform IUD insertion	26	50	9.8	1	18	88.9	7.4

*Intrauterine device

Table A5.3.2 Observed contraception methods and reported services in basic and complete facilities

	Maternity Clinic			Hospital			
	N	%	SE	N	%	SE	DK/DR
Observed FP methods							
Any pill	8	87.5	11.7	6	100		
Combined oral pill	8	75	15.3	6	100		
Progestin only pill	8	25	15.3	6	16.7	15.2	
Any injectable	8	87.5	11.7	6	100		
Combined injectable (1 month)	8	25	15.3	6	0		
Progestin only injectable (3 months)	8	75	15.3	6	100		
Male condom	8	87.5	11.7	6	100		
Female condom	8	0		6	0		
IUD*	8	87.5	11.7	6	100		
Spermicide	8	0		6	0		
Diaphragm	8	0		6	0		
Emergency contraception pill	8	0		6	0		
Implant	8	0		6	0		
Reported services							
Offers pregnancy test	8	62.5	17.1	5	100		1
Trained doctor to perform tubal ligation	8	0		6	100		0
Trained doctor to perform vasectomy	8	0		6	83.3	15.2	0

*Intrauterine device

Table A5.4.1 Family planning in ambulatory facilities

	CESAR			CESAMO		
	N	%	SE	n	%	SE
Composite FP indicator	27	88.9	6.2	18	83.3	9.0
Availability of methods on the day of the survey	27	96.3	3.7	18	88.9	7.6
No stockout in the last 1 month + 2 months + 3 months	27	88.9	6.2	18	83.3	9.0

Table A5.4.2 Family planning in basic and complete facilities

	Maternity Clinic			Hospital		
	N	%	SE	n	%	SE
Composite FP indicator	8	75	16.4	6	100	
Availability of methods on the day of the survey	8	75	16.4	6	100	
No stockout in the last 1 month + 2 months + 3 months	8	75	16.4	6	100	

Table A5.5.1 Teaching and awareness on family planning and STIs

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Individual FP counseling	45	100		8	100		6	100	
Group FP counseling	45	100		8	87.5	11.7	6	100	
FP posters on walls of facility	45	75.6	6.4	8	62.5	17.1	6	100	
STI/HIV posters on walls of facility	45	66.7	7.0	8	50	17.7	6	50	20.4
Education for natural family planning methods	45	97.8	2.2	8	87.5	11.7	6	100	

Table A6.1.1 ANC – PPC service provision

	Ambulatory			Basic			Complete		
	N	%	SE	N*	%	SE	N	%	SE
Offers ANC services	45	97.8	2.2	8	12.5	11.7	6	66.7	19.3
Offers PPC services	0	0		8	100		6	100	
ANC - PPC room									
Private room with auditory and visual privacy	44	100		5	100		6	100	
Non-private room without auditory or visual privacy	44	0		5	0		6	0	
Visual privacy only	44	0		5	0		6	0	
No privacy	44	0		5	0		6	0	
DK/DR	0			2			0		

*Missing ANC PPC room data for one basic facility

Table A6.2.1 Observed ANC equipment in ambulatory facilities

Equipment type	CESAR			CESAMO		
	N	%	SE	N	%	SE
Standing scale	27	81.5	7.5	17	94.1	5.7
Tallimeter or stadiometer	27	22.2	8.0	17	41.2	11.9
Gynecological exam table (bed)	27	81.5	7.5	17	100	
Obstetrical tape	27	96.3	3.6	17	100	
Perinatal maternal medical history*	27	96.3	3.6	16	100	
Perinatal maternal card*	27	96.3	3.6	16	100	

*Missing data on maternal medical history and maternal card for 1 CESAMO health unit

Table A6.2.2 Observed ANC equipment in basic and complete facilities

Equipment type	CMI			Hospital		
	N	%	SE	N	%	SE
Standing scale	6	66.7	19.3	6	83.3	15.2
Tallimeter or stadiometer	6	16.7	15.2	6	16.7	15.2
Gynecological exam table (bed)	6	83.3	15.2	6	100	
Obstetrical tape	6	66.7	19.3	6	83.3	15.2
Gooseneck or hand lamp for pelvic exams	6	83.3	15.2	6	100	
Blood pressure apparatus	6	83.3	15.2	6	100	
Stethoscope	6	83.3	15.2	6	100	
IUD insertion kit	6	83.3	15.2	6	83.3	15.2
Perinatal maternal medical history	5	80	17.9	6	83.3	15.2
Perinatal maternal card	5	80	17.9	6	83.3	15.2

Table A6.3.1 First prenatal visit before 12 weeks of gestational age

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
First prenatal visit by a doctor or nurse before 12 weeks gestation	139	51.1	4.2	9	55.6	16.6	30	46.7	9.1

Table A6.3.2 Composite ANC indicator in ambulatory facilities

	Ambulatory		
	N	%	SE
At least 4 recorded antenatal care visits	139	83.5	3.2
Recorded visit with a doctor or nurse	139	87.8	2.8
Vital signs checked during visit	139	98.6	1.0
Fetal checkups if gestational age is > 20 weeks	15	100	
All lab tests done at least once	139	28.1	3.8
Composite ANC (meets all criteria listed above)	139	18.7	3.3

Table A6.3.3 Postpartum care in basic and complete facilities

	Basic			Complete		
	N	%	SE	N	%	SE
Postpartum care according to the standards	82	78	4.6	75	56	5.7

Table A6.5.1 Partograph review

Items checked	Basic			Complete		
	N	%	SE	N	%	SE
Patient name	121	90.1	2.7	114	78.9	3.8
Curve is completed until the moment of birth	121	86	3.2	114	72.8	4.2
Interpretation of the real curve in respect of warning curve	121	71.9	4.1	114	60.5	4.6
Graphical representation of fetal heart rate	121	82.6	3.4	114	69.3	4.3
Interpretation of changes in fetal heart rate	121	32.2	4.3	114	43.9	4.7
Graph of the frequency of uterine contractions	121	82.6	3.4	114	70.2	4.3
Interpretation of changes in uterine contraction	121	31.4	4.2	114	42.1	4.6
Systolic blood pressure	121	87.6	3	114	71.9	4.2
Diastolic blood pressure	121	86.8	3.1	114	71.9	4.2
Pulse	121	87.6	3	114	67.5	4.4
Position of the baby	121	84.3	3.3	114	65.8	4.4
Contractions intensity	121	68.6	4.2	114	39.5	4.6
Location of the pain	121	53.7	4.5	114	39.5	4.6
Intensity of the pain	121	86	3.2	114	65.8	4.4
All checks recorded	121	0		114	0	

Table A7.1.1 Emergency obstetric and neonatal care service provision

	Maternity Clinic			Hospital		
	N	%	SE	N	%	SE
Emergency room						
Private room with visual and auditory privacy	8	87.5	11.7	6	83.3	15.2
Non-private room without auditory or visual privacy	8	12.5	11.7	6	16.7	15.2
Visual privacy only	8	0		6	0	
No privacy	8	0		6	0	
Don't provide this service	8	0		6	0	

Table A7.2.1 Continuous availability of supplies and equipment in maternity clinics

Equipment type	N	CMI	
		%	SE
Blood pressure apparatus	8	62.5	17.1
Stethoscope	8	75	15.3
Portable doppler/Pinard stethoscope	8	75	15.3
Autoclave/dry heat sterilizer	8	87.5	11.7
Oxygen tank	8	100	
Resuscitation bag for adult	8	87.5	11.7
Neonatal resuscitation bag	8	100	
Laryngoscope	8	75	15.3
MVA kit	8	0	
Central oxygen supply	8	0	

Table A7.2.2 Continuous availability of drugs in maternity clinics

Drug type	N	CMI	
		%	SE
Ampicillin 1 gr IV	8	87.5	11.7
Dexamethazone	8	62.5	17.1
Ergometrine 0.2 mg	8	37.5	17.1
Gentamicin 80 mg	8	87.5	11.7
Hydralazine 20 mg	8	75	15.3
Magnesium sulfate	8	100	
Nitrofuratoin 100 mg	8	0	
Oxytocin 5 IU/10 IU	8	100	
Penicillin crystals	8	37.5	17.1

Table A7.2.3 Continuous availability of supplies and equipment for emergency obstetric and neonatal care in hospitals

Equipment type	Hospital		
	N	%	SE
Blood pressure apparatus	6	83.3	15.2
Stethoscope	6	66.7	19.3
Pediatric/neonatal stethoscope	6	0	
Portable doppler/Pinard stethoscope	6	100	
Autoclave/dry heat sterilizer	6	66.7	19.3
Oxygen tank	6	83.3	15.2
Resuscitation bag for adult	6	83.3	15.2
Neonatal resuscitation bag	6	100	
Laryngoscope	6	100	
MVA kit	6	66.7	19.3
Anesthesia equipment	6	66.7	19.3
Starter kit for curettage	6	83.3	15.2

Table A7.2.4 Continuous availability of drugs for emergency obstetric and neonatal care in hospitals

Drug availability	Hospitals		
	N	%	SE
Adrenalin	6	100	
Any antibiotic*	6	100	
Amp atropine. 1 mg/ml and epinephrine	6	100	
Atropine sulfate 1 mg/ml	6	100	
Sodium bicarbonate 4.2% (5 mEq/10mL)	6	100	
Dexamethasone	6	66.7	19.3
10mg Diazepam IM-IV	6	100	
Sodium diphenylhydantoin (Phenytoin)	6	83.3	15.2
Ergometrine 0.2mg IM-IV/oxytocin 5 IU IM-IV	6	100	
100mg sodium pentobarbital IV	6	100	
Furosemide	6	100	
Any antihypertensive**	6	100	
Naloxone hydrochloride 0.4 mg / mL	6	83.3	15.2
Ketamine Hydrochloride Injection 50 mg / ml	6	100	
Isotonic crystalloid (saline solution or Ringer's lactate)	6	83.3	15.2
Magnesium Sulfate 10% or 50 IV-IM	6	100	
Midazolam hydrochloride 5mg / 5ml	6	100	
Nitrous oxide gas	6	0	
Normal saline wash	6	66.7	19.3
100% Fco 250ml Sevofluran	6	100	
Succinylcholine chloride (suxamethonium)	6	83.3	15.2
Tetracycline ointment	6	16.7	15.2
Sodium thiopental 1g	6	66.7	19.3

*Any antibiotic = Amoxicillin/ampicillin/amikacin sulfate/crystalline penicillin G/ceftriaxone/clindamycin/cephalexin/cefazolin/chloramphenicol/dicloxacillin/doxycycline/gentamicin/metronidazole

**Any antihypertensive = Hydralazine/hydralazine hydrochloride/alphamethyl dopa/propranolol/nifedipine

Table A7.3.1 Medical record review in hospitals: hemorrhage

	Maternal Hemorrhage		
	N	%	SE
Vital signs checked	76	90.8	3.3
Lab tests performed	76	5.3	2.6
Oxytocin/other uterotonic administered	76	63.2	5.5
Cause recorded	76	96.1	2.2
Correct treatment	76	35.5	5.5
Hemorrhage managed according to the norm (meets all above criteria)	76	0	

Table A7.3.2 Medical record review in hospitals: pre-eclampsia

	Pre-eclampsia		
	N	%	SE
Vital signs checked	63	49.2	6.3
Lab tests performed	63	11.1	4.0
Correct treatment	63	60.3	6.2
Result of pregnancy recorded	63	82.5	4.8
Preeclampsia managed according to the norm (meets all above criteria)	63	7.9	3.4

Table A7.3.3 Medical record review in hospitals: eclampsia

	Eclampsia		
	N	%	SE
Vital signs checked	11	27.3	13.4
Lab tests performed	11	9.1	8.7
Correct treatment	11	81.8	11.6
Outcome of pregnancy recorded	11	36.4	14.5
Eclampsia managed according to the norm (meets all above criteria)	11	0	

Table A7.3.4 Medical record review in hospitals: sepsis

	Maternal Sepsis Complications		
	N	%	SE
Vital signs checked	22	81.8	8.2
Antibiotics administered	22	95.5	4.4
Correct treatment	22	81.8	8.2
Sepsis managed according to the norm (meets all above criteria)	22	63.6	10.3

Table A7.3.5 Women treated to standards for sepsis, hemorrhage, pre-eclampsia, and eclampsia

	N	%	SE
Managed according to the norm	172	11	2.4

Table A7.4.1 Medical record review in hospitals: infants with LBW and prematurity

	Low birth weight		
	N	%	SE
Evaluated by a doctor at admission	35	100	
Weight + respiratory rate + oxygen saturation + silverman score + blood glucose level	35	2.9	2.8
Correct treatment	35	62.9	8.2
Indicator according to the norm (meets above criteria)	35	2.9	2.8

	Prematurity		
	N	%	SE
Evaluated by a doctor at admission	8	100	
Weight + respiratory rate + oxygen saturation + silverman score + blood glucose level	8	25	15.3
Correct treatment	8	87.5	11.7
Indicator according to the norm (meets above criteria)	8	25	15.3

Table A7.4.2 Medical record review in hospitals: infants with sepsis

	Sepsis		
	N	%	SE
Evaluated by a doctor at admission	93	100	
Temperature checked	93	97.8	1.5
Treatment with antibiotics	93	95.7	2.1
Lab tests performed	93	8.6	2.9
Indicator according to the norm (meets above criteria)	93	7.5	2.7

Table A7.4.3 Medical record review in hospitals: infants with asphyxia

	Asphyxia		
	N	%	SE
Evaluated by a doctor at admission	38	100	
Respiratory rate and Silverman score recorded	38	36.8	7.8
Lab tests performed	38	7.9	4.4
Correct procedure	38	89.5	5.0
Indicator according to the norm (meets above criteria)	38	5.3	3.6

Table A7.4.4 Infants treated to standards for sepsis, asphyxia, low birth weight, and prematurity

	N	%	SE
Managed according to the norm	174	6.9	1.9

Table A8.1.1 Equipment for disposal

	Ambulatory				Basic			Complete			
	N	%	SE	DK/DR	N	%	SE	N	%	SE	DK/DR
Incinerator at facility	45	88.9	4.7	0	8	87.5	11.7	6	16.7	15.2	0
Contract with other facility for biohazard disposal	44	4.5	3.1	1	8	12.5	11.7	5	40	21.9	1
Manual for decontamination	42	16.7	5.8	3	8	75	15.3	6	100		0

Table A8.1.2 Disposal methods

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Sharps disposal									
Burned in incinerator	45	66.7	7.0	8	75	15.3	6	0	
Burned in open air	45	4.4	3.1	8	0		6	0	
Thrown away (not burned)	45	2.2	2.2	8	0		6	0	
Disposed of away from facility	45	6.7	3.7	8	0		6	50	20.4
Never have sharps	45	0		8	0		6	0	
Other	45	28.9	6.8	8	25	15.3	6	66.7	19.3
Bandage/biohazard disposal									
Burned in incinerator	45	88.9	4.7	8	75	15.3	6	16.7	15.2
Burned in open air	45	6.7	3.7	8	0		6	0	
Thrown away (not burned)	45	0		8	0		6	0	
Disposed of away from facility	45	4.4	3.1	8	0		6	50	20.4
Never have bandage/biohazard waste	45	0		8	0		6	0	
Other	45	4.4	3.1	8	25	15.3	6	66.7	19.3

Table A8.2.1 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	45	86.7	5.1	8	62.5	17.1	6	83.3	15.2
Scrubbed with a brush, soap and water, then submerged in disinfectant	45	0		8	25	15.3	6	16.7	15.2
Scrubbed with a brush, soap and water only	45	2.2	2.2	8	0		6	16.7	15.2
Submerged in disinfectant, without scrubbing with brush	45	11.1	4.7	8	12.5	11.7	6	0	
Cleaned with water and soap, without scrubbing with a brush	45	0		8	0		6	0	
Equipment never reused	45	0		8	0		6	0	
Other	45	0		8	0		6	0	
Sterilization methods									
Dry heat	45	15.6	5.4	8	12.5	11.7	6	0	
Autoclave	45	51.1	7.4	8	75	15.3	6	100	
Boiling	45	6.7	3.7	8	0		6	0	
Steam	45	33.3	7.0	8	12.5	11.7	6	0	
Chemical sterilization	45	0		8	0		6	0	
Processed away from facility	45	0		8	0		6	0	
Facility doesn't sterilize	45	0		8	0		6	0	
Other	45	2.2	2.2	8	0		6	16.7	15.2

Appendix B: SM2015 Indicators

Table B.1 Indicator matrix

The following indicator matrix represents facilities in intervention areas only. Corresponding indicator definitions can be found in B.2.

SM2015 Indicators	N	%	SE
Proportion of ANC visits according to best practices among women with at least 4 ANC visits	139	18.7	3.3
Institutional postpartum patients of reproductive age, evaluated and registered in clinical records, at least every 15 min during the first hour and 30 min until complete 2 hours, and when leaving hospital in the last two years	157	67.5	3.7
Neonates with complications (low birth weight, prematurity, birth asphyxia and sepsis) managed according to standards in the last two years	174	6.9	1.9
Women with obstetric complications (sepsis, hemorrhage, severe pre-eclampsia and eclampsia) managed according to the norm in the last two years	172	11	2.4
Administration of 10 IU of intramuscular oxytocin	234	95.3	1.4
Children 0-59 months diagnosed with pneumonia and attended follow up appointment after two days in CESAR and CESAMO	163	71.8	3.5
Health facilities with continuous availability of supplies needed for emergency obstetric and neonatal care	8	62.5	17.1
Health facilities with continuous availability of supplies and equipment needed for emergency obstetric and neonatal care	6	0	
Health facilities that have supplies of modern family planning methods (oral, injectable, barrier, IUD)	59	86.4	4.5
Health facilities with continuous availability of supplies and equipment needed for child care, immunization and nutrition	58	0	

B.2 Indicator definitions

1. Proportion of ANC visits according to best practices among women with at least 4 ANC visits

Denominator:

Total number of records of women who had their most recent pregnancy in the last two years and attended the health center for prenatal care in our sample.

Formula:

Ambulatory: Observe the following in the record: woman had 4 ANC visits, each with the following: doctor/nurse + checks performed (weight + blood pressure + fundal height) + fetal checks (fetal heart rate +

fetal movement) if gestational age is more than 20 weeks. Lab tests performed at least once: blood type + Rh factor + blood glucose level + HIV test + VDRL + hemoglobin level + urinalysis.

2. Institutional postpartum patients of reproductive age, evaluated and registered in clinical records, at least every 15 min during the first hour and 30 min until complete 2 hours ,and when leaving hospital in the last two years

Denominator:

Total number of postpartum care records in the sample.

Formula:

Basic and Complete: Observe the following in the record: following checks performed on the woman 4 times in the first hour after birth: diastolic and systolic blood pressure + temperature + pulse. Following checks performed on the woman 2 times in the second hour after birth: diastolic and systolic blood pressure + temperature + pulse.

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

Denominator:

Total number of records of neonates with birth complications (low birth weight, prematurity, birth asphyxia, or sepsis) in the sample.

Formula:

Low birth weight and prematurity:

Complete: Observe the following in the record: vital signs checked (weight + respiratory rate + blood pressure + Silverman score) + oxygen saturation level + blood glucose level checked + baby evaluated by a doctor + correct treatment administered and recorded. Correct treatment is as follows: oxygen mask/oxygen hood/oxygen tank/mechanical ventilation/keeping in incubator recorded + IV feeding recorded if respiratory rate greater than 80.

Asphyxia:

Complete: Observe the following in the record: vital signs checked (respiratory rate + Silverman score) + checks/lab tests performed (oxygen saturation level + Hb+ blood glucose level) + antibiotics administered + correct treatment administered and recorded. Correct treatment is as follows: oxygen mask/oxygen hood/oxygen tank/mechanical ventilation/keeping in incubator recorded.

Sepsis:

Complete: Observe the following in the record: vital signs checked (temperature + blood pressure + pulse) + lab tests performed (oxygen saturation level checked + C-reactive protein + leukocyte count and morphology) + antibiotics administered + baby evaluated by a doctor.

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

Denominator:

Total number of obstetric complication records in the sample.

Formula:

Sepsis:

Complete: Observe the following in the record: vital signs checked (temperature + diastolic + systolic blood pressure + pulse) + antibiotics administered + correct treatment administered and recorded. Correct treatment is as follows: if septic abortion, then manual aspiration and uterine revision recorded + if uterine perforation, then hysterectomy reported + if uterine perforation, abscess, or infected ectopic pregnancy, then laparotomy recorded + if tears of cervical canal or uterus, then surgical repair recorded.

Hemorrhage:

Complete: Observe the following in the record: vital signs recorded (diastolic + systolic blood pressure) + lab tests performed (Ht + Hb + PT + PTT + platelet count) + oxytocin or other uterotonic administered + a cause of hemorrhage recorded + correct treatment administered and recorded. Correct treatment is as follows: if complicated abortion or retained placenta, then manual aspiration and uterine revision recorded + if placenta previa, placental abruption, uterine rupture, or uterine atony, then Cesarean section or hysterectomy recorded + if ectopic pregnancy or uterine atony, then laparotomy recorded + if tears of the uterine canal or uterus, then surgical repair recorded.

Severe pre-eclampsia:

Complete: Observe the following in the record: vital signs checked (diastolic + systolic blood pressure + pulse + respiratory rate + patellar reflex) + lab tests performed (urine protein + platelet count + aspartate aminotransferase + lactate dehydrogenase) + outcome of pregnancy recorded + correct treatment administered and recorded. Correct treatment is as follows: if diastolic blood pressure is greater than 110, then administration of hydralazine/nifedipine recorded + if gestational age is 26-34 weeks, then administration of dexamethasone/betamethasone recorded + administration of magnesium sulfate recorded.

Eclampsia:

Complete: Observe the following in the record: vital signs checked (diastolic + systolic blood pressure + pulse + respiratory rate + patellar reflex) + lab tests performed (urine protein + platelet count + aspartate aminotransferase + lactate dehydrogenase) + outcome of pregnancy recorded + correct treatment administered and recorded. Correct treatment is as follows: if diastolic blood pressure is greater than 110, then administration of hydralazine/nifedipine recorded + if gestational age is 26-34 weeks, then administration of dexamethasone/betamethasone recorded + administration of magnesium sulfate recorded.

5. Administration of 10 IU of intramuscular oxytocin

Denominator:

Total number of delivery records in the sample.

Formula:

Basic and Complete: Observe the following in the record: administration of oxytocin or another uterotonic after delivery.

6. Children 0-59 months diagnosed with pneumonia and attended follow up appointment after two days in CESAR and CESAMO

Denominator:

Total number of pneumonia records among children aged 0 to 59 months in the sample.

Formula:

Ambulatory: Observe the following in the record: date of the follow-up appointment for the child with pneumonia = 2 days after the initial appointment.

7. Health facilities with availability of supplies needed for emergency obstetric and neonatal care, on the day of the survey

Denominator:

Total number of basic (CMI) facilities that offer emergency obstetric and neonatal care.

Formula:

Basic: Observe the following on the day of the survey: availability of the following medications on the day of the survey: ampicillin 1 gr IV + hydralazine 20 mg + no stock out of the following medications in the last one, two, or three months: ergometrine 0.2 mg or oxytocin 5 IU/10 IU + gentamicin 80 mg + magnesium sulfate.

8. Health facilities with availability of supplies and equipment needed for emergency obstetric and neonatal care, on the day of the survey

Denominator:

Total number of complete (hospital) facilities.

Formula:

Complete: Observe the following on the day of the survey: blood pressure apparatus + stethoscope + pediatric or neonatal stethoscope + portable Doppler or Pinard stethoscope+ autoclave or dry heat sterilizer + oxygen tank + adult resuscitation bag + neonatal resuscitation bag + laryngoscope+ MVA kit + anesthesia equipment + starter kit for curettage + adrenaline + amoxicillin/ampicillin/amikacin sulfate/crystalline penicillin G/clindamycin /cephalexin/cefazolin/dicloxacillin/doxycycline/gentamicin/ metronidazole + amp atropine. 1 mg/ml + epinephrine + atropine sulfate 1 mg/ml + sodium bicarbonate 4.2% (5 mEq/10mL) + 10mg diazepam IM-IV + sodium diphenylhydantoin (phenytoin) + 100mg sodium pentobarbital IV + furosemide + hydralazine/hydralazine hydrochloride/alphamethyl dopa/propranolol/nifedipine + naloxone hydrochloride 0.4 mg / mL + isotonic crystalloid (saline solution or Ringer's lactate) + magnesium sulfate 10% or 50 IV + tetracycline ointment.

9. Health facilities that have supplies of modern family planning methods (oral, injectable, barrier, IUD)

Denominator:

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

Formula:

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

Ambulatory (CESAMO), Basic and Complete: Observe the following on the day of the survey: male condom + any oral pill + any injectable + IUD. No break in supply of the following inputs in the last three months (including the day of the survey): male condom + any oral pill + any injectable.

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

Denominator: Total number of facilities that offer child care services.

Formula:

Ambulatory (CESAR): Observe the following on the day of the survey: pediatric balance or scale + standing balance or scale for children + tallimeter or stadiometer + stethoscope + pediatric stethoscope + hand lamp + stretcher or table for examination + measuring tape + nebulizer + oral rehydration salts + albendazole/mebendazole + ferrous sulfate. No break in supply of the following inputs in the last three months (including the day of the survey): oral rehydration salts + zinc sulfate or gluconate + albendazole/mebendazole + amoxicillin/erythromycin/penicillin.

Ambulatory (CESAMO): Observe the following on the day of the survey: pediatric balance or scale + standing balance or scale for children + tallimeter or stadiometer + pediatric stethoscope + hand lamp + oto-ophthalmoscope + stretcher or table for examination + measuring tape + nebulizer + oral rehydration salts + albendazole/mebendazole + ferrous sulfate. No break in supply of the following inputs in the last three months (including the day of the survey): oral rehydration salts + zinc sulfate or gluconate + albendazole/mebendazole + amoxicillin/erythromycin/penicillin.

Basic: Observe the following on the day of the survey: pediatric balance or scale + standing balance or scale for children + tallimeter or stadiometer + pediatric tensiometer + neonatal tensiometer + pediatric stethoscope + hand lamp + binaural stethoscope for newborns + reflex mallet + negatoscope + oto-ophthalmoscope + stretcher or table for examination + measuring tape + nebulizer + oral rehydration salts + albendazole/mebendazole + ferrous sulfate. No break in supply of the following inputs in the last three months (including the day of the survey): oral rehydration salts + zinc sulfate or gluconate + albendazole/mebendazole + amoxicillin/erythromycin/penicillin.

Appendix C: Control-area tables

Table C2.1.1 Types of facilities

Facility Type	Control
CESAR (ambulatory without doctor)	7
CESAMO (ambulatory with doctor)	13
CMI (basic)	7
Hospital (complete)	4
Total	31

Table C2.1.2 Geographical representation

Department name	Number of municipalities	Number of facilities
Comayagua	3	5
Copán	4	9
Cortés	2	3
Intibucá	2	4
Lempira	4	6
Valle	2	4

Table C2.1.3 Number of medical records by facility classification (EONC level)

Medical records	Ambulatory	Basic	Complete
Antenatal care	72	0	0
Delivery	N/A	96	87
Postpartum	N/A	47	43
Maternal complications	N/A	0	111
Neonatal complications	N/A	0	108
Diarrhea	80	N/A	N/A
Pneumonia	71	N/A	N/A

Table C2.2.1 Electricity and water

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Functional electricity	20	100		7	100		4	100	
Source of electricity									
Central supply	20	100		6	100		4	100	
Private supply	20	0		6	0		4	0	
In-facility generator	20	0		6	16.7	15.2	4	0	
Solar generator	20	0		6	0		4	0	
Other source	20	0		6	0		4	0	
DK/ DR	0			1			0		
Source of water									
Piped into facility	20	90	6.7	7	100		4	75	21.6
Public well	20	10	6.7	7	14.3	13.2	4	0	
Facility well	20	0		7	0		4	25	21.6
Unprotected well	20	0		7	0		4	0	
Hand pump	20	0		7	0		4	0	
Bottled water	20	15	8.0	7	0		4	50	25
Tanker truck	20	5	4.9	7	14.3	13.2	4	0	
Rain water	20	0		7	0		4	0	
Other	20	15	8.0	7	0		4	0	
DK/DR	0			0			0		

Table C2.3.1 Personnel composition in ambulatory facilities

Personnel type	CESAR			CESAMO		
	N	mean	SE	N	mean	SE
General physician	7	0		13	1.5	0.7
Pediatrician	7	0		13	0	
Nutritionist	7	0		13	0	
Pharmacist	7	0		13	0	
Nurse	7	0		13	0.6	0.5
Auxiliary nurse	7	1.6	0.5	13	2.5	1.1
Midwife	7	2.5	1.9	13	5.5	4.9
Social worker	7	0		13	0	
Laboratory technician	7	0		13	0.6	0.5
Health promoter	7	0.9	0.4	13	1.8	0.9
Other	6	0.3	0.6	12	0.5	0.5

Table C2.3.2 Personnel composition in basic and complete health units

Personnel type	Maternity Clinic				Hospital			
	N	mean	SE	DK/DR	N	mean	SE	DK/DR
General physician	7	4.4	6.2	0	4	25	22.9	0
Pediatrician	7	0		0	4	9.5	9.7	0
Nutritionist	7	0		0	4	0		0
Pharmacist	7	0		0	4	1.8	1.5	0
Nurse	7	0.3	0.5	0	4	45.3	41	0
Auxiliary nurse	7	6.3	2.7	0	4	146.3	108.5	0
Midwife	7	1	2.2	0	4	0		0
Social worker	7	0		0	4	2.5	2.4	0
Laboratory technician	6	0		1	4	10.8	4.4	0
Health promoter	7	0		0	4	0		0
Internist	7	0		0	4	3.5	3	0
Gynecologist	7	0		0	4	7.8	5.6	0
Surgeon	7	0		0	4	4.5	3.8	0
Anesthesiologist	7	0		0	4	1	1	0
Emergency medical technician	7	0		0	4	0		0
Radiology technician	7	0		0	4	10	3.7	0
Ambulance driver/polyvalent	7	0.9	0.7	0	4	4.5	4.0	0
Other specialties	6	0		0	3	2	3.5	1

Table C2.3.4 Training courses offered by facilities in the last 12 months

Training offered in the last year	Ambulatory				Basic				Complete		
	N	%	SE	DK/DR	N	%	SE	DK/DR	N	%	SE
Antenatal and postnatal care	18	77.8	9.8	1	6	83.3	15.2	0	3	100	
Basic emergency obstetric and neonatal care	18	66.7	11.1	1	6	83.3	15.2	0	3	100	
Family Planning	17	64.7	11.6	2	6	83.3	15.2	0	3	100	
Integrated management of childhood illness (IMCI)	16	62.5	12.1	2	6	50	20.4	0	3	66.7	27.2
Immunization training	16	75	10.8	1	5	60	21.9	1	3	100	
Routine care for labor and normal vaginal delivery	15	66.7	12.2	1	6	83.3	15.2	0	3	100	
Management of maternal complications	17	70.6	11.1	1	6	83.3	15.2	0	3	100	
Newborn care training	15	60	12.6	2	6	100		0	3	100	
Management of neonatal complications	17	64.7	11.6	1	6	100		0	3	100	

Table C3.1.1 Child health care services provision

Service	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Unit offers child services	20	100		7	71.4	17.1	4	100	
Unit vaccinates children under 5	20	100		7	28.6	17.1	4	75	21.6

Table C3.2.1 Child health care equipment observed and functional in ambulatory facilities

Equipment type	CESAR			CESAMO		
	N	%	SE	N	%	SE
Pediatric balance or scale	7	85.7	13.2	13	76.9	11.7
Standing balance or scale for children	7	14.3	13.2	13	7.7	7.4
Tallimeter or stadiometer	7	14.3	13.2	13	38.5	13.5
Stethoscope	7	71.4	17.1	13	61.5	13.5
Pediatric stethoscope	7	0		13	0	
Oto-ophthalmoscope	7	0		13	38.5	13.5
Hand lamp	7	28.6	17.1	13	7.7	7.4
Stretcher or table for examination	7	42.9	18.7	13	92.3	7.4
Measuring tape	7	57.1	18.7	13	92.3	7.4
Nebulizer	7	85.7	13.2	13	84.6	10.0
Oral/axillary thermometer	7	85.7	13.2	13	84.6	10.0

Table C3.2.2 Child health care equipment observed and functional in basic and complete level health units

Equipment type	Maternity Clinic			Hospital		
	N	%	SE	N	%	SE
Pediatric balance or scale	7	57.1	18.7	4	100	
Standing balance or scale for children	7	42.9	18.7	4	50	25
Tallimeter or stadiometer	7	28.6	17.1	4	50	25
Pediatric tensiometer	7	14.3	13.2	4	25	21.6
Neonatal tensiometer	7	0		4	25	21.6
Pediatric stethoscope	7	28.6	17.1	4	25	21.6
Hand lamp	7	57.1	18.7	4	0	
Binaural stethoscope for newborns	7	0		4	0	
Reflex mallet	7	42.9	18.7	4	25	21.6
Negatoscope	7	14.3	13.2	4	0	
Oto-ophthalmoscope	7	57.1	18.7	4	75	21.6
Stretcher or table for examination	7	57.1	18.7	4	50	25
Measuring tape	7	85.7	13.2	4	75	21.6
Nebulizer	7	85.7	13.2	4	100	

Table C3.3.1 Child health care observed drugs and supplements in ambulatory units

Supplement type	CESAR			CESAMO		
	N	%	SE	N	%	SE
Packets/envelopes of oral rehydration salt	7	85.7	13.2	13	92.3	7.4
Ferrous sulfate drops	7	100		13	100	
Zinc sulfate/gluconate	7	0		13	7.7	7.4
Albendazole/mebendazole	7	100		13	100	
Amoxicillin/erythromycin/penicillin	N/A	N/A	N/A	13	100	

Table C3.3.2 Child health care observed drugs and supplements in basic and complete units

Supplement type	Maternity Clinic			Hospital		
	N	%	SE	N*	%	SE
Packets/envelopes of oral rehydration salt	7	57.1	19	4	100	
Ferrous sulfate drops	7	71.4	17	4	100	
Zinc sulfate/gluconate	7	14.3	13	4	0	
Albendazole/mebendazole	7	42.9	19	4	100	
Amoxicillin/erythromycin/penicillin	7	85.7	13	N/A	N/A	N/A

*Amoxicillin/erythromycin/penicillin was not asked in this section for complete facilities

Table C3.5.1 Children treated according to the degree of dehydration

	CESAR			CESAMO		
	N	%	SE	N	%	SE
ORS or IV rehydration therapy	33	100		47	91.5	4.1

Table C3.6.1 Children with pneumonia diagnosis and follow-up within two days

	CESAR			CESAMO		
	N	%	SE	N	%	SE
Date of admission to date of follow up = 2 days	28	85.7	6.6	43	67.4	7.2

Table C3.7.1 Child health education and awareness

Education material	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Printed materials on child growth and child development	19	52.6	11.4	7	14.3	13.2	4	25	21.6
Printed materials on danger signs and symptoms in children	19	57.9	11.3	7	42.9	18.7	4	25	21.6

Table C4.1.1 Vaccination services

	Ambulatory			Basic			Complete		
	N*	%	SE	N	%	SE	N	%	SE
Unit vaccinates children under 5	20	100		7	28.6	17.1	4	75	21.6
Immunization room									
Private room with visual and auditory privacy	19	73.7	10.1	7	71.4	17.1	4	50	25
Non-private room without auditory or visual privacy	19	15.8	8.4	7	14.3	13.2	4	50	25
Visual privacy only	19	10.5	7.0	7	0		4	0	
Does not provide this service	19	0		7	14.3	13.2	4	0	

*Immunization room data missing for one ambulatory facility

Table C4.2.2 Vaccine demand and supply

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Storage									
Stored in facility	20	100		2	100		3	100	
Picked up from another facility	20	0		2	0		3	0	
Delivered when services are being provided	20	0		2	0		3	0	
None of the above	20	0		2	0		3	0	
Demand and Supply									
Ordering Strategy									
Determines own needs	20	95	4.9	2	100		3	100	
Need determined elsewhere	20	5	4.9	2	0		3	0	
Both(differ by vaccine)	20	0		2	0		3	0	
Quantity to order strategy									
Order same amount	20	100		2	100		3	100	
Different per vaccine	20	0		2	0		3	0	
Time to order strategy									
Fixed time, > once/week	20	90	6.7	2	100		3	33.3	27.2
Fixed time, < once/week	20	0		2	0		3	33.3	27.2
Order when needed	20	10	6.7	2	0		3	33.3	27.2
Time to receive supplies									
< 1 week	20	90	6.7	2	100		2	100	
1-2 weeks	20	10	6.7	2	0		2	0	
> 2 weeks	20	0		2	0		2	0	
DK/DR							1		
Reception of quantity ordered									
Always	20	80	8.9	2	100		2	100	
Almost always	20	20	8.9	2	0		2	0	
Almost never	20	0		2	0		2	0	
DK/DR							1		

Table C4.2.3 Injection equipment

Syringe type	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Single use	19	100		6	100		4	100	
Sterilizable	19	0		6	0		4	0	
Auto disposable	19	0		6	0		4	0	
Other	19	0		6	0		4	0	

Table C4.3.1 Vaccine stocks observed

Vaccine type	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Pentavalent*	20	100		6	0		3	66.7	27.2
MMR*	20	100		6	0		3	33.3	27.2
Polio	20	100		6	0		3	33.3	27.2
Influenza	20	15	8.0	6	0		3	66.7	27.2
Rotavirus	20	100		6	0		3	33.3	27.2
Pneumococcal conjugate	20	95	4.9	6	0		3	33.3	27.2
BCG	20	90	6.7	6	66.7	19.3	3	100	
DPT alone	1	0		6	0		1	0	
HepB alone	1	0		6	50	20.4	1	0	
Hib alone	1	0		6	33.3	19.3	1	100	

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

Table C4.4.1 Cold chain characteristics

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Storage									
Electric fridge	20	100		6	100		4	100	
Kerosene fridge	20	0		6	0		4	0	
Gas fridge	20	0		6	0		4	0	
Solar fridge	20	0		6	0		4	0	
Cold box	20	85	8.0	6	50	20.4	4	75	21.6
Any of the above	20	100		6	100		4	100	
Thermometers									
Digital thermometers	20	70	10.3	6	100		4	25	21.6
Alcohol thermometers	20	0		6	0		4	0	
Other thermometers	20	60	10.9	6	33.3	19.3	4	100	
Any of the above	20	100		6	100		4	100	

Table C5.1.1 Family planning (FP) services provision

	Ambulatory			Basic			Complete		
	N*	%	SE	N	%	SE	N	%	SE
Offers FP services	20	100		7	100		4	100	
FP room									
Private room with visual and auditory privacy	19	88.9	7.4	7	71.4	17.1	4	100	
Non-private room without auditory or visual privacy	19	0		7	28.6	17.1	4	0	
Visual privacy only	19	5.6	5.4	7	0		4	0	
No privacy	19	5.6	5.4	7	0		4	0	
Other	19	0		7	0		4	0	
DK/DR	1			0			0		

*There was one ambulatory facility that did not complete the family planning section

Table C5.2.1 Family planning (FP) storage

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
FP Storage									
Yes, stores contraceptives	20	100		7	100		4	100	
No, delivered when services are being provided	20	0		7	0		4	0	

Table C5.3.1 Observed contraception methods and reported services in ambulatory facilities

	CESAR			CESAMO		
	N	%	SE	N	%	SE
Observed FP methods						
Any pill	7	100		13	84.6	10.0
Combined oral pill	7	100		12	83.3	10.8
Progestin only pill	7	0		12	8.3	8.0
Any injectable	7	85.7	13.2	13	92.3	7.4
Combined injectable (1 month)	7	0		12	0	
Progestin only injectable (3 months)	7	85.7	13.2	12	100	
Male condom	7	100		12	100	
Female condom	7	0		12	0	
IUD*	7	0		12	100	
Spermicide	7	0		12	0	
Diaphragm	7	0		12	0	
Emergency contraception pill	7	0		12	0	
Reported Services						
Offers pregnancy tests	7	100		13	100	
Trained doctor to perform IUD insertion	7	28.6	17.1	13	100	

*Intrauterine device

Table C5.3.2 Observed contraception methods and reported services in basic and complete facilities

	Maternity Clinic			Hospital		
	N	%	SE	N	%	SE
Observed FP methods						
Any pill	7	57.1	18.7	4	100	
Combined oral pill	7	57.1	18.7	4	100	
Progestin only pill	7	0		4	0	
Any injectable	7	71.4	17.1	4	100	
Combined injectable (1 month)	7	0		4	0	
Progestin only injectable (3 months)	7	71.4	17.1	4	100	
Male condom	7	100		4	100	
Female condom	7	0		4	0	
IUD*	7	57.1	18.7	4	100	
Spermicide	7	0		4	0	
Diaphragm	7	0		4	0	
Emergency contraception pill	7	0		4	0	
Implant	7	0		4	0	
Reported services						
Offers pregnancy test	7	71.4	17.1	4	100	
Trained doctor to perform tubal ligation	7	0		4	75	21.6
Trained doctor to perform vasectomy	7	0		4	75	21.6

*Intrauterine device

Table C5.4.1 Family planning in ambulatory facilities

	CESAR			CESAMO		
	N	%	SE	n	%	SE
Composite FP indicator	6	83.3	16.7	12	83.3	11.2
Availability of methods on the day of the survey	6	83.3	16.7	12	91.7	8.3
No stockout in the last 1 month + 2 months + 3 months	6	83.3	16.7	12	83.3	11.2

Table C5.4.2 Family planning in basic and complete facilities

	Maternity Clinic			Hospital		
	N	%	SE	n	%	SE
Composite FP indicator	7	42.9	20.2	4	75	25
Availability of methods on the day of the survey	7	42.9	20.2	4	100	
No stockout in the last 1 month + 2 months + 3 months	7	42.9	20.2	4	75	25

Table C5.5.1 Teaching and awareness on family planning and STIs

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Individual FP counseling	20	100		7	100		4	100	
Group FP counseling	20	95	4.9	7	100		4	100	
FP posters on walls of facility	18	94.4	5.4	7	85.7	13.2	4	75	21.6
STI/HIV posters on walls of facility	18	83.3	8.8	7	71.4	17.1	4	75	21.6
Education for natural family planning methods	20	75	9.7	7	85.7	13.2	3	33.3	27.2

Table C6.1.1 ANC – PPC service provision

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Offers ANC services	20	100		7	14.3	13.2	4	25	21.6
Offers PPC services	0	0		7	100		4	100	
ANC - PPC room									
Private room with auditory and visual privacy	19	89.5	7.0	7	100		4	100	
Non-private room without auditory or visual privacy	19	0		7	0		4	0	
Visual privacy only	19	10.5	7.0	7	0		4	0	
No privacy	19	0		7	0		4	0	
DK/DR	0			0			0		

Table C6.2.1 Observed ANC equipment in ambulatory facilities

Equipment type	CESAR			CESAMO		
	N	%	SE	N	%	SE
Standing scale	7	85.7	13.2	13	84.6	10.0
Tallimeter or stadiometer	7	14.3	13.2	13	15.4	10.0
Gynecological exam table (bed)	7	85.7	13.2	13	92.3	7.4
Obstetrical tape	7	100		13	100	
Perinatal maternal medical history*	7	100		12	100	
Perinatal maternal card*	7	100		12	100	

*Missing data on maternal medical history and maternal card for one CESAMO health unit

Table C6.2.2 Observed ANC equipment in basic and complete facilities

Equipment type	CMI			Hospital		
	N	%	SE	N	%	SE
Standing scale	7	85.7	13.2	4	100	
Tallimeter or stadiometer	7	28.6	17.1	4	0	
Gynecological exam table (bed)	7	100		4	100	
Obstetrical tape	7	85.7	13.2	4	50	25.0
Gooseneck or hand lamp for pelvic exams	7	85.7	13.2	4	100	
Blood pressure apparatus	7	100		4	50	25.0
Stethoscope	7	100		4	25	21.6
IUD insertion kit	7	100		4	100	
Perinatal maternal medical history	7	85.7	13.2	4	75	21.6
Perinatal maternal card	7	100		4	75	21.6

Table C6.3.1 First prenatal visit before 12 weeks of gestational age

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
First prenatal visit by a doctor or nurse before 12 weeks gestation	61	54.1	6.38	0	0	0	0	0	0

Table C6.3.2 Composite ANC indicator in ambulatory facilities

	Ambulatory		
	N	%	SE
At least 4 recorded antenatal care visits	61	85.2	4.5
Recorded visit with a doctor or nurse	61	90.2	3.8
Vital signs checked during visit	61	98.4	1.6
Fetal checkups if gestational age is > 20 weeks	4	100	
All lab tests done at least once	61	49.2	6.4
Composite ANC (meets all criteria listed above)	61	42.6	6.3

Table C6.3.3 Postpartum care in basic and complete facilities

	Basic			Complete		
	N	%	SE	N	%	SE
Postpartum care according to the standards	47	76.6	6.2	43	62.8	7.4

Table C6.5.1 Partograph review

Items checked	Basic			Complete		
	N	%	SE	N	%	SE
Patient name	96	99	1.0	87	67.8	5.0
Curve is completed until the moment of birth	96	95.8	2.0	87	65.5	5.1
Interpretation of the real curve in respect of warning curve	96	95.8	2.0	87	49.4	5.4
Graphical representation of fetal heart rate	96	96.9	1.8	87	65.5	5.1
Interpretation of changes in fetal heart rate	96	55.2	5.1	87	8	2.9
Graph of the frequency of uterine contractions	96	95.8	2.0	87	66.7	5.1
Interpretation of changes in uterine contraction	96	57.3	5.1	87	8	2.9
Systolic blood pressure	96	97.9	1.5	87	66.7	5.1
Diastolic blood pressure	96	97.9	1.5	87	66.7	5.1
Pulse	96	97.9	1.5	87	66.7	5.1
Position of the baby	96	90.6	3.0	87	63.2	5.2
Contractions intensity	96	55.2	5.1	87	66.7	5.1
Location of the pain	96	71.9	4.6	87	33.3	5.1
Intensity of the pain	96	97.9	1.5	87	62.1	5.2
All checks recorded	96	0		87	0	

Table C7.1.1 Emergency obstetric and neonatal care service provision

	Maternity Clinic			Hospital		
	N	%	SE	N	%	SE
Emergency room						
Private room with visual and auditory privacy	7	85.7	13.2	4	100	
Non-private room without auditory or visual privacy	7	0		4	0	
Visual privacy only	7	0		4	0	
No privacy	7	0		4	0	
Don't provide this service	7	14.3	13.2	4	0	

Table C7.2.1 Continuous availability of supplies and equipment in maternity clinics

Equipment type	CMI		
	N	%	SE
Blood pressure apparatus	6	50	20.4
Stethoscope	6	66.7	19.3
Portable Doppler/Pinard stethoscope	6	83.3	15.2
Autoclave/dry heat sterilizer	6	100	
Oxygen tank	6	66.7	19.3
Resuscitation bag for adult	6	33.3	19.3
Neonatal resuscitation bag	6	83.3	15.2
Laryngoscope	6	33.3	19.3
MVA kit	6	0	
Central oxygen supply	6	0	

Table C7.2.2 Continuous availability of drugs in maternity clinics

Drug type	CMI		
	N	%	SE
Ampicillin 1 gr IV	7	57.1	18.7
Dexamethazone	7	42.9	18.7
Ergometrine 0.2 mg	7	14.3	13.2
Gentamicin 80 mg	7	85.7	13.2
Hydralazine 20 mg	7	57.1	18.7
Magnesium sulfate	7	85.7	13.2
Nitrofuratoin 100 mg	7	14.3	13.2
Oxytocin 5 IU/10 IU	7	85.7	13.2
Penicillin crystals	7	42.9	18.7

Table C7.2.3 Continuous availability of supplies and equipment for emergency obstetric and neonatal care in hospitals

Equipment type	Hospital		
	N	%	SE
Blood pressure apparatus	4	50	25
Stethoscope	4	25	21.6
Pediatric/neonatal stethoscope	4	50	25
Portable doppler/Pinard stethoscope	4	100	
Autoclave/dry heat sterilizer	4	75	21.6
Oxygen tank	4	100	
Resuscitation bag for adult	4	75	21.6
Neonatal resuscitation bag	4	75	21.6
Laryngoscope	4	100	
MVA kit	4	100	
Anesthesia equipment	4	75	21.6
Starter kit for curettage	4	100	

Table C7.2.4 Continuous availability of drugs for emergency obstetric and neonatal care in hospitals

Drug availability	Hospitals		
	N	%	SE
Adrenalin	4	75	21.6
Any antibiotic*	4	100	
Amp atropine. 1 mg/ml and epinephrine	4	100	
Atropine sulfate 1 mg/ml	4	75	21.6
Sodium bicarbonate 4.2% (5 mEq/10mL)	4	75	21.6
Dexamethasone	4	25	21.6
10mg Diazepam IM-IV	4	100	
Sodium diphenylhydantoin (Phenytoin)	4	100	
Ergometrine 0.2mg IM-IV / Oxytocin 5 IU IM-IV	4	100	
100mg sodium pentobarbital IV	4	75	21.6
Furosemide	4	100	
Any antihypertensive**	4	100	
Naloxone hydrochloride 0.4 mg / mL	4	25	21.6
Ketamine Hydrochloride Injection 50 mg / ml	4	25	21.6
Isotonic crystalloid (saline solution or Ringer's lactate)	4	100	
Magnesium Sulfate 10% or 50 IV-IM	4	75	21.6
Midazolam hydrochloride 5mg / 5ml	4	25	21.6
Nitrous oxide gas	4	0	
Normal saline wash	4	75	21.6
100% Fco 250ml Sevofluran	4	50	25
Succinylcholine chloride (suxamethonium)	4	50	25
Tetracycline ointment	4	25	21.6
Sodium thiopental 1g	4	75	21.6

*Any antibiotic = Amoxicillin/ampicillin/amikacin sulfate/crystalline penicillin G/ceftriaxone/clindamycin/cephalexin/cefazolin/chloramphenicol/dicloxacillin/doxycycline/gentamicin/metronidazole

**Any antihypertensive = Hydralazine/hydralazine hydrochloride/alphamethyl dopa/propranolol/nifedipine

Table C7.3.1 Medical record review in hospitals: hemorrhage

	Maternal Hemorrhage		
	N	%	SE
Vital signs checked	44	90.9	4.3
Lab tests performed	44	2.3	2.3
Oxytocin/other uterotonic administered	44	59.1	7.4
Cause recorded	44	97.7	2.3
Correct treatment	44	47.7	7.5
Hemorrhage managed according to the norm (meets all above criteria)	44	0	

Table C7.3.2 Medical record review in hospitals: pre-eclampsia

	Pre-eclampsia		
	N	%	SE
Vital signs checked	42	69	7.1
Lab tests performed	42	0	
Correct treatment	42	83.3	5.8
Result of pregnancy recorded	42	88.1	5
Preeclampsia managed according to the norm (meets all above criteria)	42	0	

Table C7.3.3 Medical record review in hospitals: eclampsia

	Eclampsia		
	N	%	SE
Vital signs checked	6	83.3	15.2
Lab tests performed	6	0	
Correct treatment	6	83.3	15.2
Outcome of pregnancy recorded	6	50	20.4
Eclampsia managed according to the norm (meets all above criteria)	6	0	

Table C7.3.4 Medical record review in hospitals: sepsis

	Maternal Sepsis Complications		
	N	%	SE
Vital signs checked	18	83.3	8.8
Antibiotics administered	18	94.4	5.4
Correct treatment	18	100	
Sepsis managed according to the norm (meets all above criteria)	18	77.8	9.8

Table C7.3.5 Women treated to standards for sepsis, hemorrhage, pre-eclampsia, and eclampsia

	N	%	SE
Managed according to the norm	109	12.8	3.2

Table C7.4.1 Medical record review in hospitals: infants with LBW and prematurity

	Low birth weight		
	N	%	SE
Evaluated by a doctor at admission	19	100	
Weight + respiratory rate + oxygen saturation + silverman score + blood glucose level	19	10.5	7.0
Correct treatment	19	100	
Indicator according to the norm (meets above criteria)	19	10.5	7.0

	Prematurity		
	N	%	SE
Evaluated by a doctor at admission	24	100	
Weight + respiratory rate + oxygen saturation + silverman score + blood glucose level	24	8.3	5.6
Correct treatment	24	100	
Indicator according to the norm (meets above criteria)	24	8.3	5.6

Table C7.4.2 Medical record review in hospitals: infants with sepsis

	Sepsis		
	N	%	SE
Evaluated by a doctor at admission	44	100	
Temperature checked	44	84.1	5.5
Treatment with antibiotics	44	97.7	2.3
Lab tests performed	44	6.8	3.8
Indicator according to the norm (meets above criteria)	44	4.5	3.1

Table C7.4.3 Medical record review in hospitals: infants with asphyxia

	Asphyxia		
	N	%	SE
Evaluated by a doctor at admission	19	100	
Respiratory rate and Silverman score recorded	19	31.6	10.7
Lab tests performed	19	15.8	8.4
Correct procedure	19	94.7	5.1
Indicator according to the norm (meets above criteria)	19	0	

Table C7.4.4 Infants treated to standards for sepsis, asphyxia, low birth weight, and prematurity

	N	%	SE
Managed according to the norm	104	5.8	2.3

Table C8.1.1 Equipment for disposal

	Ambulatory				Basic				Complete		
	N	%	SE	DK/DR	N	%	SE	DK/DR	N	%	SE
Incinerator at facility	20	75	9.7	0	7	42.9	19	0	4	0	
Contract with other facility for biohazard disposal	20	10	6.7	0	5	0		2	4	0	
Manual for decontamination	17	17.6	9.3	3	4	50	25	3	4	100	

Table C8.1.2 Disposal methods

	Ambulatory			Basic			Complete		
	N	%	SE	N	%	SE	N	%	SE
Sharps disposal									
Burned in incinerator	20	60	10.9	7	42.9	18.7	4	0	
Burned in open air	20	0		7	0		4	0	
Thrown away (not burned)	20	0		7	0		4	0	
Disposed of away from facility	20	25	9.7	7	28.6	17.1	4	50	25
Never have sharps	20	0		7	0		4	0	
Other	20	30	10.3	7	28.6	17.1	4	50	25
Bandage/biohazard disposal									
Burned in incinerator	20	65	10.7	7	42.9	18.7	4	0	
Burned in open air	20	0		7	14.3	13.2	4	0	
Thrown away (not burned)	20	0		7	14.3	13.2	4	0	
Disposed of away from facility	20	30	10.3	7	42.9	18.7	4	75	21.6
Never have bandage/biohazard waste	20	0		7	0		4	0	
Other	20	15	8.0	7	14.3	13.2	4	50	25

Table C8.2.1 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	20	70	10.3	7	71.4	17.1	4	75	21.6
Scrubbed with a brush, soap and water, then submerged in disinfectant	20	20	8.9	7	28.6	17.1	4	0	
Scrubbed with a brush, soap and water only	20	5	4.9	7	0		4	25	21.6
Submerged in disinfectant, without scrubbing with brush	20	0		7	0		4	0	
Cleaned with water and soap, without scrubbing with a brush	20	10	6.7	7	0		4	0	
Equipment never reused	20	0		7	0		4	0	
Other	20	0		7	0		4	0	
Sterilization methods									
Dry heat	20	15	8.0	7	0		4	0	
Autoclave	20	65	10.7	7	100		4	100	
Boiling	20	5	4.9	7	0		4	0	
Steam	20	25	9.7	7	0		4	0	
Chemical sterilization	20	0		7	0		4	75	21.6
Processed away from facility	20	0		7	0		4	0	
Facility doesn't sterilize	20	0		7	0		4	0	
Other	20	0		7	0		4	0	

Appendix D: SM2015 Facility Performance Indicators in Control Areas

The following indicator matrix represents facilities in control areas only.

SM2015 Indicators	N	%	SE
Proportion of ANC visits according to best practices among women with >=4 ANC visits	61	42.6	6.3
Institutional postpartum patients of reproductive age, evaluated and registered in clinical records, at least every 15 min during the first hour and 30 min until complete 2 hours, and when leaving hospital in the last two years	90	70	4.8
Neonates with complications (low birth weight, prematurity, birth asphyxia and sepsis) managed according to standards in the last two years	104	5.8	2.3
Women with obstetric complications (sepsis, hemorrhage, severe pre-eclampsia and eclampsia) managed according to the norm in the last two years	109	12.8	3.2
Administration of 10 IU of intramuscular oxytocin	183	98.4	0.9
Children 0-59 months who diagnosed with pneumonia and attended follow up appointment after two days in CESAR and CESAMO	71	74.6	5.2
Proportion of facilities with continuous availability of supplies needed for emergency obstetric and neonatal care	6	50	20.4
Proportion of facilities with continuous availability of supplies and equipment needed for emergency obstetric and neonatal care	4	0	0
Proportion of health facilities have supplies of modern family planning methods (oral, injectable, barrier, IUD)	29	72.4	8.3
Health facilities with continuous availability of supplies and equipment needed for child care, immunization and nutrition	30	0	0