

# **National Assessment for Emergency Obstetric and Newborn Care**

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**Ministry of Health**

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**WHO**

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# List of Acronyms

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|        |  |
|--------|--|
| AMDD   | Averting Maternal Death and Disability                         |
| APH    | Antepartum Haemorrhage   |
| BEmONC | Basic Emergency Obstetric and Newborn Care                     |
| BMC    | Budget management centre                                       |
| CEmONC | Comprehensive Emergency Obstetric and Newborn Care             |
| CHPS   | Community-based Health Planning Services                       |
| CPD    | Cephalo-pelvic disproportion                                   |
| C/S    | Caeserean section  |
| D&C    | Dilatation and Curettage                                       |
| D&E    | Dilatation and Evacuation                                      |
| DFID   | Department for International Development Of The United Kingdom |
| DOCFR  | Direct obstetric case fatality rate                            |
| EHP    | Essential Health Package                                       |
| EmONC  | Emergency Obstetric and Newborn Care                           |
| FANC   | Focussed antenatal care  |
| FP     | Family planning  |
| GHS    | Ghana Health Service   |
| GNI    | Gross National Income  |
| GNP    | Gross National Product   |
| GRMA   |  |
| GSS    | Ghana Statistical Services                                     |

|        |  |
|--------|--|
| HIRDA  |  |
| ICPD   | International Conference on Population and Development |
| IV     | Intravenous  |
| MAF    | Millennium accelerated framework                       |
| MDG    | Millennium Development Goal                            |
| MMR    | Maternal mortality ratio                               |
| MOH    | Ministry of Health                                     |
| MVA    | Manual Vacuum Aspiration                               |
| NGO    | Non-Governmental Organisation                          |
| PMTCT  | Prevention of mother to child transmission             |
| PNC    | Postnatal care   |
| PPH    | Postpartum Haemorrhage                                 |
| STI    | Sexually transmitted infection                         |
| TBA    | Traditional Birth Attendant                            |
| UN     | United Nations   |
| UNFPA  | United Nations Population Fund                         |
| UNICEF | United Nations Children's Fund                         |
| USAID  | United States Agency for International Development     |
| VCT    | Voluntary Counselling and Testing                      |
| WHO    | World Health Organization                              |

# Foreword

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Over the years, the Government of Ghana has provided sexual and reproductive health services, including maternal and newborn health care to the people of Ghana. The Government with the support from various development partners notably UNFPA, UNICEF, WHO, USAID, DFID, JICA, EU, the World Bank has implemented these services in the country at all levels.

Despite all these efforts, maternal and neonatal mortality is still high. A number of studies have helped shed light on maternal health situation in the country spanning from low quality of health care services provided to women during pregnancy to post natal services. These studies have suggested urgent need to further strengthen the provision of quality maternal and newborn health care in order to reduce the high maternal and newborn mortality in Ghana.

Consequently, the Ministry of Health/Ghana Health Service with financial and technical support from UNICEF and UNFPA conducted an EmONC assessment to determine the capacity of the existing health care delivery systems in the country. The assessment in both public and private sector in the country is timely because of the ongoing health systems changes in Ghana. Again information supporting policy debates and programming to improve quality of health services is scarce dating back in 2005 where limited facilities were assessed in the three Northern regions in the country.

The results of this assessment confirm the findings of previous studies and specifically identify progress made towards the reduction of maternal mortality and the availability and functioning of emergency obstetric and newborn care (EmONC) and also clearly highlight the gaps in delivering maternal and newborn health care in Ghana.

This is yet another Government effort to improve health care service delivery for the people of this country in line with the MDGs. It is hoped that the report will guide policy makers, programme managers, development partners, service providers and communities in their efforts to support the Ministry of Health in its quest to address maternal and newborn issues in Ghana. We thank all who in diverse ways supported to make this assessment a success.

**Honorable Joseph Yileh Chireh**  
**MINISTER OF HEALTH**

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# Executive Summary

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The Ghana EmONC assessment was a national cross-sectional facility-based survey that utilized 12 modules as data collection instruments. Data collection began April 28th and concluded June 4<sup>th</sup>, 2010 in Upper East Region. For all other regions, data collection began July 25th and concluded by 7<sup>th</sup> September 2010. A total of 1,268 facilities were visited, of which 1159 performed a delivery in the 12 months before the survey. Out of 1,268 facilities surveyed, 3 were Teaching hospitals, 9 Regional hospitals, 273 District and Other hospitals, 518 Health centres, 161 Health clinics, 165 Maternity homes and 139 CHPS Compounds.

For most regions, the sample of health care facilities was a census of all hospitals (Teaching, Regional and District) and all health centers, health clinics, maternities and CHPS compounds that recorded at least 5 deliveries per month in the HMIS for 2009. For the three regions that make up the North (Northern, Upper East and Upper West Regions), inclusion criteria differed. In the UER, all health facilities above the CHPS level that performed any deliveries in the previous year were included and a random 30% sample of CHPS facilities was visited, regardless of the number of deliveries performed. In Northern and Upper West regions, facilities conducting at least one delivery per month (on average) were visited.

The Ghana Statistical Services was contracted to manage the data entry and to conduct analysis. The GSS developed data entry screens in CPro 4.0 and double data entry was performed between August and December 2010. The data files were exported into SPSS 13 and STATA 10 for analysis. GSS and AMDD shared analysis tasks. Data for service availability mapping was provided by GHS. Report writing began in July 2011, led by a consultant hired to coordinate the report writing process. Data analysis and report writing involved extensive collaboration and participation of the steering group with continued AMDD support.

## **EmONC Indicators**

One of the key specific objectives of this assessment was to measure the UN EmONC indicators that determine:

- If the number of fully functioning EmONC facilities is sufficient for the entire population of the country,
- If the distribution of these facilities is equitable,
- If pregnant women access these facilities for delivery,
- If women with major obstetric complications access these facilities,
- If enough critical services (e.g. caesarean deliveries, blood transfusion) are being provided,
- If emergency newborn care is available
- If the quality of care is adequate and

- What medical services in addition to EmONC are needed to reduce maternal mortality.

Specific signal functions were used to assess facilities and determine the availability of EmONC services. The presence or absence of these signal functions was used to determine whether a facility provided basic or comprehensive emergency obstetric and newborn care. For a facility to be judged a basic EmONC facility it needed to provide all 7 basic signal functions in the 3 months prior to the survey. All 9 signal functions had to be performed for a facility to be classified as comprehensive EmONC facility. Another level of classification was used in this assessment where facilities that performed 7 or 8 signal functions (if hospitals) or 5 or 6 signal functions (if maternities, health centres, health clinics or CHPS) were classified as partially functioning EmONC facilities. Those facilities that did not meet these criteria were classified as Non-EmONC facilities.

The UN guidelines contained in *Monitoring emergency obstetric care: A handbook*, recommend that there should be at least 5 EmONC facilities for every 500,000 population, at least one of which provides comprehensive care. However, the target in Ghana is more rigorous and states that there should be at least 5 EmONC facilities for every 200,000 population, at least one of which provides comprehensive care. Using the Ghana standards and given Ghana's current population of 24,232,431, there should be 485 Basic facilities and 121 Comprehensive facilities. The assessment however found only 13 Basic facilities (leaving a gap of 472 facilities) and 76 Comprehensive facilities (leaving a gap of 45 facilities).

When analysed by facility type, the assessment found that out of all hospitals providing deliveries (i.e. 281), 76 of them were comprehensive (27%), 7 of them were basic (2%), 111 were partial (40%), and 87 (31%) were non-EmONC. For Health centres, 0.4% were basic, 22% were partial and 77.4% were non-EmONC. For Health clinics, 0.7% were basic, 17% were partial and 82% were non-EmONC. For maternity homes, 2% were basic, 17% were partial and 81% non-EmONC. Similarly, for CHPS compound, there were 4% partially functioning and 96% were non-EmONC and none basic.

Out of the facilities surveyed 97% provided parenteral oxytocics and this was the one signal function that had the highest coverage, followed by parenteral antibiotics (78%). Signal functions with least coverage included assisted vaginal delivery (13% of facilities) (and this was responsible for many facilities not qualifying as basic EmONC facilities), removal of retained products (29% of facilities) and manual removal of placenta (46% of facilities). Only 55% of facilities administered parenteral anticonvulsants in the 3 months preceding the survey and only 16% exclusively used the recommended anticonvulsant which is magnesium sulphate. Up to 60% of the facilities used diazepam exclusively, not the drug of first choice for severe pre-eclampsia and eclampsia.

Facilities that did not provide the signal functions were asked why these functions were not provided. The most common recurring reason for not performing a function was the lack of an

indication for the function. However in the case of assisted vaginal delivery, the commonest response for not performing the function was lack of training and equipment.

The assessment found that only 58% of births in the country are attended by skilled birth attendants and that 21% of births took place in EmONC facilities. The regional figures for coverage range from 29% for the Northern Region to 80% for the Greater Accra Region. Met need for EmONC is assessed by measuring the number of obstetric complications treated by facilities and seeing how this compares with the expected number of pregnancy complications. Out of all the expected complications only 38,437 (34%) were seen at health facilities nationally. By Region, met need ranged from 7% in the Northern Region to 59% in the Eastern Region.

According to WHO, caesarean section rates for populations should range between 5 and 15% in order to show adequate obstetric coverage. The assessment found a population-based caesarean section rate of 7% nationally and 4% in EmONC facilities. The assessment also found that 27% of the deliveries in the private-for-profit sector were resolved by caesarean section compared to 20% and 19% in Government and Religious sectors, respectively.

The direct obstetric case fatality rate (DOCFR) gives an indication of the ability of facilities to handle obstetric emergencies. The maximum acceptable rate is less than 1%. Nationally, the DOCFR was 1% in all facilities. By region, the range was 1-2% in all facilities. Nationally, there were a total of 840 identified maternal deaths recorded. The commonest cause of direct maternal death was severe pre-eclampsia/ eclampsia which accounted for 23% of all direct maternal deaths and 16% of all maternal deaths. The other leading causes of direct maternal deaths were postpartum haemorrhage (13% of all maternal deaths) and abortion complications (8% of all maternal deaths).

The national intrapartum and very early perinatal mortality rate for all facilities was 16 per 1000 deliveries while that for EmONC facilities was 26 per 1000 deliveries. There were a total of 247 indirect maternal deaths giving the proportion of maternal deaths due to indirect causes to be 27%. Malaria and severe anaemia were the leading causes of indirect deaths accounting for 7% of all maternal deaths each.

### **Performance of other MNH Services**

Nationally, at least 80% of all facilities reported that they provided focused antenatal care, postnatal care, diagnosis and treatment of sexually transmitted infections and family planning. A total of 78% of facilities reported that they provide PMTCT services. Marked disparities exist in the provision of PMTCT services by operating agency. Whereas at least 98% of government and mission hospitals provided PMTCT services, only 53% of privately owned hospitals provided this service. Nearly all (99%) of government owned hospitals also provided family planning

services as compared to 63% of privately owned and 69% of mission hospitals. For facilities other than hospitals, coverage for family planning ranged from 77% to 100%.

### **Infrastructure and referral for maternal and newborn emergencies**

The survey found that 9% of facilities surveyed had no source of electricity. From the facilities that had electricity, the study found that 91% of the facilities had powerlines (Grid) as their primary source of electricity where as 8% of facilities had solar as their primary source of electricity and less than 1% of facilities had generator as their primary source. Western, Central and Greater Accra had the highest percentage of facilities (100%) having their primary source of electricity as power lines. Brong Ahafo has the lowest percentage of facilities with the power grid (57%) as their primary source. 8% of facilities had no source of water. Out of all facilities with a source of water, 88% had potable water (i.e. piped or borehole) as primary source of water. All the regions have at least 70% of their facilities using potable water supply as primary source of water.

Nationally, 43% of facilities reported functioning facility-owned communication equipment. 99% of facilities had staff with self-owned functioning cell phone. Across the facility types, only 7% of CHPS compounds reported a functioning mode of facility-owned communication on site while hospitals reported 93%. The functioning communication tool was more likely to be a fixed line in the maternity (58%) or elsewhere in the facility (75%). Nationally, 33% of facilities in Ghana would use the national ambulance system for emergency referral while 51% of the facilities would arrange with private parties (taxis, buses) to transport referred cases to next facility while 46% assumed the client will make their own transport arrangements. 70% of maternities used the private parties while 62% of CHPS compounds assumed the clients will arrange their own transport.

Forty seven percent of the facilities that did deliveries reported having received referrals nationally. Hospitals were the most likely to have received referrals (87%) while the CHPS compounds were the least likely to have received referrals (20%). Regionally, the percentage of facilities that reported having received referrals ranged from 42% to 54%, except for Brong Ahafo (36%). Two-thirds of religious mission hospitals reported having received referrals.

### **Human Resources**

Most Health centres, Clinics, Maternity homes and CHPS Compounds had only 1 midwife (57%, 61%, 55%, 41% of facilities respectively) while 7%, 9%, 0.6% and 57% of these facilities had no midwife. A total of 35% of health centres, 29% of Health clinics, 44% of Maternity homes and 2% of CHPS Compounds had two or more midwives. Out of the total number of 272 District (Other) hospitals, 13% had no general practitioner and 33% had one general practitioner and 54% had two or more general practitioners. There were 5 government and 5 mission hospitals

without a general practitioner. The assessment found that 80% of obstetrician/gynaecologists were in District (Other) hospitals, 11% in Teaching hospitals and 9% in Regional hospitals. More than half (52%) of the private for-profit sector hospitals had an obstetrician/gynaecologist compared to 40% of government hospitals and 8% of religious/mission hospitals. A benchmark sometimes used to plan midwifery workforce is that on average 6 midwives attend to 1,000 births during one year. All the Regions had more than 6 midwives required to provide care at 1,000 births a year with Greater Accra region having the highest number of midwives attending to 1,000 deliveries (15) and Central region having the lowest number (8).

### **Drugs, equipment and supplies**

Nationally, 10%, 2%, 2%, 4% and 9% of facilities reported stock-outs of Ergometrine, Ketamine, Atropine, Oxytocin and Magnesium sulphate respectively in the last 6 months. Nationally, 99% of all facilities with a pharmacy stocked antibiotics. The least stocked were CHPS Compounds but even here, 96% of the facilities had antibiotics. Amoxicillin is the antibiotic most commonly stocked (94% of facilities). Nationally, 93% of facilities stocked anticonvulsants /sedatives for pre-eclampsia and eclampsia. Diazepam injection was the most commonly stocked drug for pre-eclampsia and eclampsia and was found in all the health facilities in Ghana. Phenobarbital injection was the least stocked anticonvulsant. Nationally, 40% of facilities stocked magnesium sulphate (50% concentration), with CHPS Compounds stocking least (21% of facilities) and Regional Hospitals stocking most (78% of facilities). Nationally, IV Fluids were found in 95% of facilities. The most commonly found IV Fluids were Normal Saline and Ringer's Lactate found in 98% and 96% of facilities respectively. Dextran was the least available IV Fluid found in 19% of facilities. Ninety nine percent of facilities surveyed had antimalarials, 23% stocked antiretroviral drugs while 89% had contraceptives available.

### **Recommendations**

- Health facilities located in areas where the gap is high between actual and recommended number of functioning EmONC sites or those facilities that are partially functioning should be strengthened to fully functioning status in order to meet national targets.
- Ministry of Health should ensure that all EmONC facilities are equipped with functioning equipment for the performance of assisted vaginal deliveries as this contributed to non-performance of this signal function.
- The provision of functional equipment for assisted vaginal delivery should be accompanied by a program for continued training of providers in recognizing the indications for assisted vaginal delivery, recognizing the conditions under which this can be done safely and also in knowing the proper technique for carrying out the procedure.

- Ministry of Health should advocate for use of recommended drugs for pre-eclampsia/eclampsia (i.e. magnesium sulphate) and for active management of third stage of labour (i.e. oxytocin) and ensure that all providers are trained in the use of these drugs.
- Further studies are needed to examine reasons for low uptake of magnesium sulphate in health facilities.
- Provide a source of electricity to 9% of health facilities without a source of electricity
- Provide water to facilities that do not have source of water (such as 25% of facilities in Upper West, 21% of facilities in Northern, 12% of facilities in Upper East and 11% of facilities in Western Region).
- Ministry of Health should take steps to maintain the universal 24/7 coverage for EmONC services.
- Lower level facilities such as CHPS compounds should procure landlines that function as cell phones while steps are taken to address the issue of staff reimbursement for the use of personal phones for emergency referrals
- To reduce delays in referral, facilities that assume patients will provide their own transport should engage private parties to meet this gap and the drivers of the private partner should receive training in first aid as part of the arrangement.
- Ministry of Health should develop guidelines for the management of newborns and make them widely available.
- The policy on referral should be widely circulated and adhered to in order to improve the quality of referrals.
- In order to ensure availability of maternity services around the clock, health centres should have two or more midwives.
- A system should be put in place to attract more doctors and other critical staff for maternal and newborn health care to work in district hospitals.
- Midwives working in units other than the maternity Unit should be posted to maternities to increase the staff strength of those departments.
- Referral facilities should put in place the appropriate administrative mechanisms to ensure almost equal cover for both day and night time emergencies.
- On-the-job rather than classroom training using coaching as the methodology should be encouraged to enable obstetric care providers to gain more practical competencies for quality care.
- Job aids, protocols, wall charts and pocket books must be developed on resuscitation, signs of pre and post partum haemorrhage, signs of newborn infections and management of unsafe abortion especially the Community Health Nurses/Officers and Health Assistants who have not been exposed to much training on maternity care.
- More midwives should undergo training on life saving procedures such as manual vacuum aspiration (MVA) and assisted vaginal delivery by vacuum aspiration especially those in hard-to-reach areas in the country.

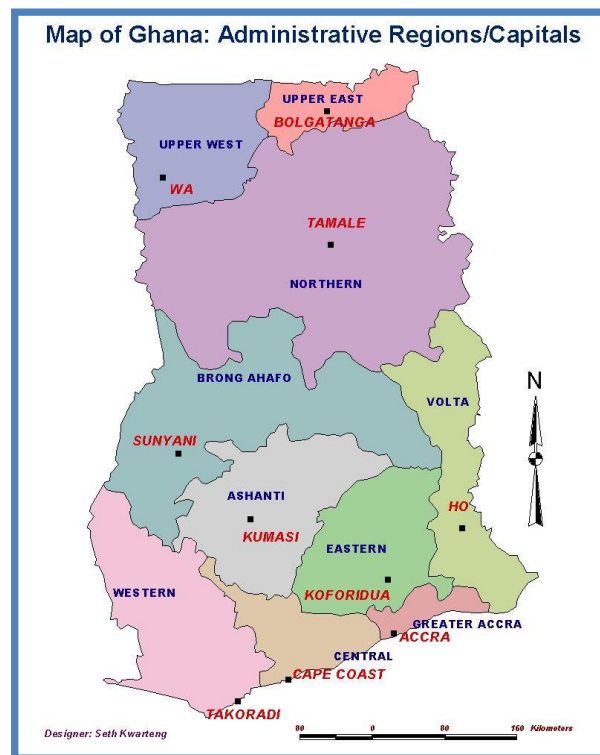
- Conduct supplies and logistics management training to ensure appropriateness and sustainability of drug procurement and distribution in all health facilities.
- Ensure availability of health facility inventory registers and ensure that staff is trained to keep them up-to date.
- Compliance with the stock management guideline to refill when stock falls to third is needed.
- Maintain an emergency stock of key drugs (in operating theatres, labour wards and maternity wards) in all facilities even where pharmacies are always open. The emergency stock could then be refilled at re-order level.

# CHAPTER ONE Introduction

## 1.01 Geography and Administration

Ghana is a tropical country on the west coast of Africa with three geographic zones; dry northern savanna, the humid middle forest rainfall zone and the coastal savannah and mangroves. It is bounded on the West by Ivory Coast, east by Togo, North by Burkina Faso and the Gulf of Guinea on the South. It lies between Latitudes 5° and 11° North of the Equator and between longitudes 1° East and 3° West of the zero meridian. The country area is 238,537 sq km and has 550 kilometres coastline. The ambient temperature is between 21 and 32 degrees Celsius.

**Fig. 1.01: Map of Ghana showing administrative Regions/Capitals**

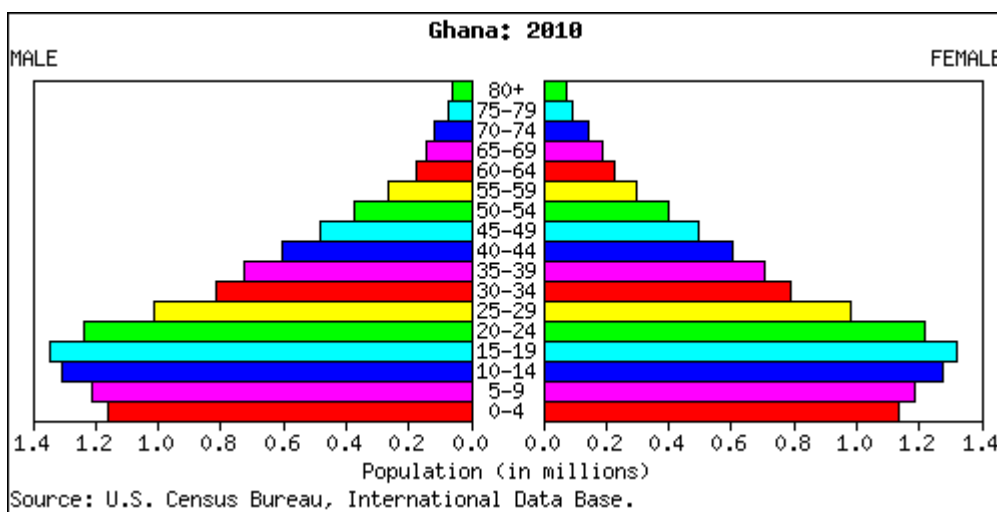


Ghana is divided into ten administrative regions and 170 decentralized districts. The districts are subdivided into area councils (political divisions) and 5-8 sub-districts (Health divisions) and these sometimes overlap. The sub-districts are subdivided into CHPS (Community-based Health Planning Services) Zones.



The total population is 24,232,431<sup>1</sup> with a population density varying from 897 per km<sup>2</sup> in Greater Accra Region to 31 per km<sup>2</sup> in the Northern Region. About 70% of the population lives in rural areas. Women of fertile age (15-49 years) account for 24% of the population, adolescents (10-19 years) XXX% and the youth (15-24 years) XXX%. The crude birth rate is 28.6 per 1,000 population and the crude death rate is 9.4 per 1,000 population<sup>2</sup>. Population growth rate 2.4%<sup>3</sup>, total fertility rate (children born per women)<sup>4</sup> and Life expectancy is estimated at 56 years for men and 57 years for women. Adult literacy rate (age 15 and above) is 65%. Each sub-district has 20,000-30,000 people and a district 80,000-150,000 population.

**Fig. 1.02: Ghana population pyramid by age and sex**



### 1.02 Socio-economic situation

Rain-dependent subsistence farming is the main occupation of most rural communities and they grow cash crops some of which are sold to meet household expenses. There are two main rainy seasons in Ghana, between April and August (major season) and (between October and November (Minor season). Fishing is the main occupation of communities located along the coast and near some inland river basins with bumper harvest during the major rainy season. In the Northern part of Ghana, the settlement patterns are scattered and widely separated by farmlands thereby increasing distances to points of social services as health, school and markets.

### 1.03 Health System Goals & Priorities

The vision of the health sector is “to have a healthy population for national development”. The health sector mission is to contribute to socio-economic development and wealth creation by promoting health and vitality, ensuring access to quality health, population and nutrition

<sup>1</sup> Ghana 2010 Census, provisional results

<sup>2</sup> GHS 2009 Facts and Figures

<sup>3</sup> Ghana 2010 Census preliminary results

<sup>4</sup> GDHS, 2008

services for all people living in Ghana and promoting the development of a local health industry”<sup>5</sup>. The sector goal is to ensure a healthy and productive population that reproduces itself safely. The top 10 diseases reported by the health institutions are Malaria, Diarrhoea, Upper Respiratory Tract Infection, Skin diseases and ulcers, Hypertension, Pneumonia, Anaemia, Intestinal worms, Rheumatism and Ear infections<sup>6</sup>.

### ***Ghana health care delivery system***

Health management in Ghana is decentralized. The Ghana Health Service (GHS) is the implementing agency of the Ministry of Health (MOH) responsible for health service delivery in the country. The system starts from national headquarters made up of divisions, departments and programmes, the intermediate regional level with Regional Health administrations and hospitals to the district level where there is District Health Management Teams (DHMTs), district hospitals and sub-districts. At each level is a budget management centre (BMC) and leadership.

Health service in Ghana is delivered at three levels: Primary, secondary and tertiary levels. The primary level is made up of all health institutions (CHPS, clinics, health centres and hospitals), faith-based, private, public or traditional. The district hospital is the first referral point with maternity, outpatient/in-patient services and selected specialized services. It serves health centres which provide clinical, maternity and out-reach services. The health centres serve the CHPS compounds manned by CHOs who work with community health workers (TBAs, CBS Vols, CDD, etc) and community leaders and (Chiefs, Assemblymen, etc).

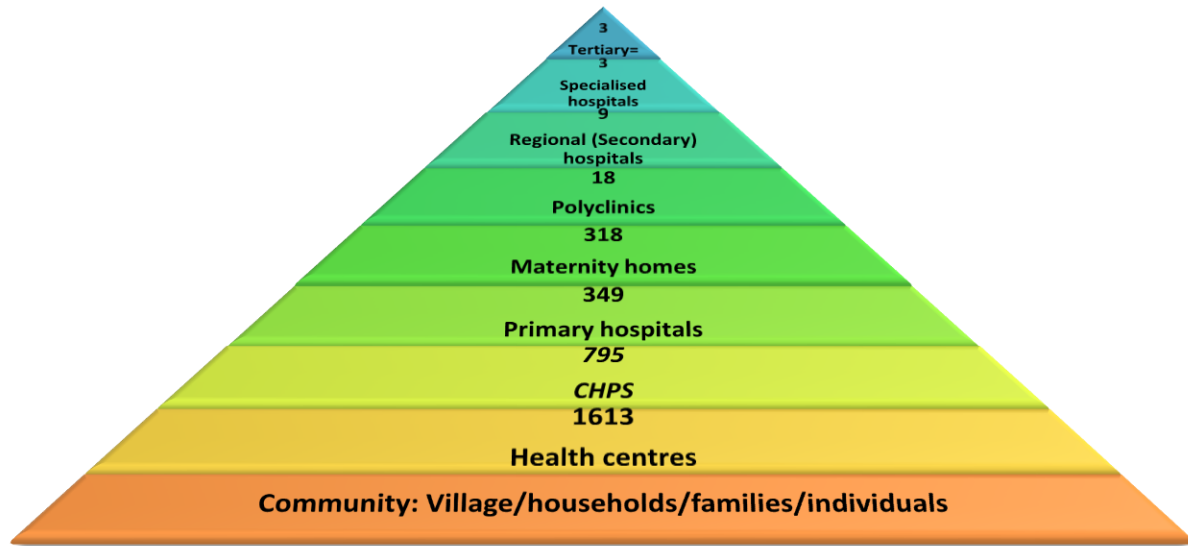
Regional hospitals provide secondary referral service with many specialized services. There are three teaching hospitals that are linked with Universities that are at the apex of the health care delivery system with advanced and very specialized care.

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<sup>5</sup> The Health Sector Medium-Term Development Plan (HSMTDP) 2010-2013

<sup>6</sup> CHIM 2009

**Fig. 1.03: Levels of Service Delivery**



The health system has many challenges. These include human resource inadequacy, particularly midwives, inadequate geographic access, inadequate equipment and infrastructure, issues with national health insurance, service inadequacy and quality and data management.

#### **1.04 Maternal Health Situation**

The maternal mortality ratio has improved at an accelerated rate in the past two decades compared to previous years. Between 1990 and 2007, the maternal mortality ratio dropped from 740 per 100,000 live births to 451 per 100,000 live births based on national data<sup>7</sup>. However, WHO/UNICEF/UNFPA maternal mortality estimation was 540 per 100,000 (1995), declining to an estimated figure of 500 maternal deaths per 100,000 live births in the year 2000, then to 400 in 2005 and then to 350 per 100,000 live births in 2008<sup>8</sup>. Despite the reductions in maternal mortality ratio there were over 800 institutional maternal deaths in 2009. If the current trends continue, maternal mortality will be reduced to only 340 per 100,000 instead of the MDG target of 185 per 100,000 by 2015. There are disparities in the institutional maternal mortality ratio across the 10 regions in Ghana from 1992-2008. Maternal mortality ratio decreased by up to, 195.2 deaths per 100,000 in Central and Upper East regions; 141 per 100,000 in Northern and Western Regions; 120.1 per 100,000 in Volta and Eastern Regions;

<sup>7</sup> Maternal Health Survey 2007

<sup>8</sup> World Health Organization (WHO), UNICEF, UNFPA, World Bank. Trends in maternal mortality: 1990 to 2008. Estimates developed by WHO, UNICEF, UNFPA, and The World Bank. Geneva, Switzerland: World Health Organization, 2010.

and 59.7 per 100,000 in Upper West, Brong Ahafo and Ashanti regions. The only region where the maternal mortality ratio has worsened is in Greater Accra (by 87.6 per 100,000). Maternal death was declared notifiable within 7 days in Ghana in 1996 and notification rate in 2007 was approximately 72% out of which three quarters (75%) of 751 maternal deaths in Ghana (2007) were audited<sup>9</sup>.

Skilled attendance at childbirth and facility-based delivery is not available to all citizens in all regions; currently nearly 60% of all births are attended by skilled personnel in health facilities. Unmet need for Family Planning has stagnated at 34% over the last decade and abortion-related complications are the second leading cause of death in pregnant women<sup>10</sup>.

In view of the issues and challenges the Government of Ghana in 2008 declared maternal mortality a national emergency and has since instituted a number of measures to improve maternal health and reduce maternal mortality. These measures includes among others the scaling up of the HIRDA nationwide, health facility assessment and equipping health facilities with EmONC equipment and increasing the production of midwives particularly for the rural areas.

#### ***1.05 Specific context and rationale of the study***

The Emergency Obstetric and Newborn Care (EmONC) assessment is focused on needs prioritized by the Ghanaian Government (GOG). It will concentrate on identifying gaps to improve maternal and neonatal health. The EmONC assessment was coordinated by the MOH and GHS. A multisectoral steering committee was set up to oversee and provide technical direction for the assessment. The design and scope was developed under the guidance of the steering committee and in consultation with the sub-committee on public sector services assessment<sup>11</sup>.

The assessment of EmONC in the public and private sector is timely because the quality of EmONC service delivery is becoming a major policy challenge as a result of ongoing health systems changes in Ghana. The effect of the increasing coverage of the health insurance and free maternal health services on maternal and newborn outcomes can best be assessed if current access to EmONC services and its infrastructure are known. Several sub-regional assessments for selected health areas have been carried out at different time and in different zones since the year 2000. Nevertheless, information for supporting policy debates and programming to improve the quality of health services is scarce in the country: the latest EmONC assessment in the health sector dates back to 2005 and was limited to the three

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<sup>9</sup> The Health Sector Medium-Term Development Plan (HSMTDP) 2010-2013

<sup>10</sup> (GMMS 2007).

<sup>11</sup> EmONC concept note

Northern regions in the country. A baseline study on Emergency Obstetric Care conducted in the three northern regions in 2005 revealed among others that:

- Most district hospitals had no theatres and hence did not provide comprehensive EmONC services.
- Majority of the health centres did not provide basic EmONC services.
- There was inadequate provision of drugs and supplies.
- There was poor record-keeping.
- There was inadequate staff especially midwives, with very few having benefited from Life Saving Skills / Safe Motherhood Initiative (LSS/SMI) training.
- Shortage of health personnel meant services could not be provided for 24 hours and 7 days per week.
- Supervision was weak and of poor quality at all levels.
- The study further showed that scattered settlement patterns affected geographical access to maternal health services and this was worsened by poor referral services due to poor communication and inadequate transport.
- Lack of facility-based accommodation for essential staff resulted in staff living far away from the health facilities and contributed to delays in providing care.
- Many health facility infrastructures require urgent rehabilitation as some lack adequate water and power supply.

Monitoring and supervisory reports indicate similar conditions in other parts of the country. The assessment was carried out through interviews, record reviews and observation.

### **1.06 Objectives**

The general objective of the 2010 EmONC assessment was to generate information that would be used to strengthen health systems to reduce maternal and child mortality in Ghana. Specifically, the assessment aimed to:

- Identify facilities and assess infrastructure including emergency transport systems and communication, payment of services and length of stay at facilities.
- Determine the staffing situation at the facilities. Data collected will be used to describe the availability of personnel for EmONC services and the training and services provided.
- Evaluate the availability and functionality of equipment, drugs and supplies necessary for the provision of EmONC services.
- Collect the data necessary to calculate the EmONC indicators and other important indicators.
- Provide information about how facilities function and whether they provide all, some or none of the EmONC signal functions as well as other important maternal health services.

- Assess the quality of intra-partum care, the quality of partograph completion in the facility and determine how many facilities are using the WHO partographs (modified, simplified and composite).
- Evaluate aspects of providers' knowledge and competence for maternal and newborn care.
- Understand the principal clinical indications (causes) of caesareans and evaluate some aspects of the quality of the procedure and record keeping.
- Identify factors that contribute to institutional maternal and newborn deaths.
- Evaluate the existing system for emergency referral of maternal and newborn complications.

The slow pace of achieving especially MDG5 has led the MOH/GHS and its partners to develop a Millennium Accelerated Framework (MAF). The main reason for the MAF is to redouble efforts to overcome bottlenecks in implementing interventions that have proven to have worked in reducing MMR in Ghana. The MAF focuses on improving maternal health at both community and health care facility levels through the use of evidence-based, feasible and cost effective interventions to achieve accelerated reduction in maternal and new born deaths. The EmONC assessment therefore fits within this framework as it aims to provide baseline information for evidence- based planning to address maternal health issues.

Assessing the availability and utilization of EmONC services for both private and public health facilities throughout the country was to ensure effective response to the identified gaps by enhancing evidence based planning. Quality assurance in existing public, private and mission facilities and the creation of a motivating environment for health workers are critical for maintaining and increasing quality improvements in the health sector. Information compiled from the EmONC assessment in the public and private sector is to be used to support policy debates on the quality of health care, advocate for funding from the government and partners, inform resource allocation to regions and districts, encourage public/private partnership, to motivate and respond to health staff needs and to promote effective clinical service delivery.

# CHAPTER TWO      Methodology

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## 2.01 Survey Overview

The Ghana EmONC assessment was a national cross-sectional facility-based survey that utilized 12 modules as data collection instruments. Data collection began April 28th and concluded June 4<sup>th</sup>, 2010 in Upper East Region. For all other regions, data collection began July 25th and concluded by 7<sup>th</sup> September 2010.

The following modules were used for the assessment:

- **Module 1: Identification of Facility and Infrastructure**  
Required interviewing a person of some authority at the facility and covered background information on the facility including capacity, infrastructure, and policies around payment for services.
- **Module 2: Human Resources**  
Involved interviewing one or more persons with excellent knowledge of the staffing patterns of health care workers providing obstetric and newborn care and which signal functions and essential services the staff provide. It also covered the staffing situation at the facility 24 hours / 7 days a week.
- **Module 3: Essential Drugs, Equipment & Supplies**  
Examined medications, equipment, and supplies that are necessary for the delivery of emergency obstetric and newborn services. This module was conducted primarily by interview with observation used to spot check items.
- **Module 4: Facility Case Summary**  
Used to collect the necessary data from facility registers and records in order to calculate the EmONC Indicators; these data included the number of deliveries (by type of delivery), obstetric complications (by cause), maternal deaths (by cause), stillbirths and very early neonatal deaths. The time period covered 12 months: For Upper East Region, the 12 month period covered April 2009-March 2010 and for the remaining regions the period covered July 2009-June 2010.
- **Module 5: EmONC Signal Functions & Other Important Services**  
Looked at how facilities *actually* function and whether they offer all, some or none of the primary services necessary to treat and save newborns and women with obstetric complications. It also looked at why these services had not been performed at the facility. Performance information was determined through interview and validation from the registers. This module referred to the three months and in some cases, 12 months, prior to the survey. The last three months would have covered part of the period from February 2010 – June 2010 for Upper East Region and from May 2010 – September 2010 for all other regions.

- **Module 6: Partograph Review**  
Used to determine how many facilities actually used the partograph and to assess the quality of completion of the partograph.
- **Module 7: Provider Knowledge & Competency for Maternal and Newborn Care**  
Assessed the knowledge of health providers about diagnosis and management of common maternal and newborn conditions; it also reviewed specific training for and performance of key services.
- **Module 8: Cesarean Delivery Review**  
Used to evaluate record-keeping for cesareans, indications for cesareans, fetal well-being and maternal outcome of the procedure.
- **Module 9: Review of Maternal Deaths**  
Designed to develop a profile of mothers who died from direct or indirect obstetric complications in health facilities over the 12-month period under review as well as information on contributory factors associated with maternal deaths.
- **Module 10: Neonatal Death Review**  
Designed to develop a profile of newborns that died within 28 days after delivery in health facilities over the 12-month period under review as well as contributory factors associated with neonatal deaths.
- **Module 11: Emergency Referral**  
Designed to collect details about the system for emergency referral of maternal and newborn complications. This included information about referral policies, communication and transportation available for emergency transport, use, management and maintenance of vehicles, driver availability and training, availability of protocols for pre-referral management, as well as patient escorting and feedback practices.
- **National Data Collection Tool**  
Designed to collect information at the national level. This tool helped the research team gather information such as: regional populations, lists of health facilities, national drug lists, scopes of work for midwives, information about policies on staffing levels, and availability of educational institutions for midwives, nurses and doctors.

## 2.02 Selection of facilities

Facilities in both the public and private sector (for-profit and not-for-profit) were included. Since the focus of the assessment was obstetric and newborn care, health facilities that do not offer maternal health services were not targeted.

For most regions, the sample of health care facilities was a census of all hospitals (teaching, regional and district) and all health centers, health clinics, maternities and CHPS compounds that recorded at least 5 deliveries per month in the HMIS for 2009. For the three regions that make up the North (Northern, Upper East and Upper West Regions), inclusion criteria differed.



In the UER, all health facilities above the CHPS level that performed any deliveries in the previous year were included and a random 30% sample of CHPS facilities was visited, regardless of the number of deliveries performed. In Northern and Upper West regions, facilities conducting at least one delivery per month (on average) were visited. This lower inclusion threshold ensured that most facilities offering maternal and newborn care in those two regions were visited despite the fact that many facilities had low patient volume (Table 2.01). Northern and Upper West Regions are also known for their low population density (35 and 27 people per square Km, respectively)<sup>12</sup>.

Based on the differences in inclusion criteria by region, one would expect the assessment results to show that the proportion of small facilities (1-4 deliveries per month) is highest in Upper West, Upper East and Northern regions. In fact, this is true, with small facilities accounting for between 23% and 52% of facilities that performed any deliveries (Table 2.01). However, the proportion of small facilities visited in Greater Accra, Volta and Eastern regions is also high (between 23% and 32%). The average monthly number of deliveries in all small facilities is 3 (results not shown).

In all but two regions, at least one facility included in the study reported not providing any delivery services in the 12 months prior to the visit by data collectors. The majority of these facilities were in Upper East, which is likely due to the 30% random sample of CHPS facilities that was made regardless of number of deliveries recorded in the HMIS.

Despite these differences, the results presented in this report include all facilities visited and no attempt was made to restrict analyses to a consistent sample of facilities (e.g., to present results for only facilities that attended 5 or more deliveries in the year prior to the survey). Also, despite the 30% random sample of CHPS in Upper East, results for that region are not weighted.

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<sup>12</sup> Ghana 2010 Census, provisional results

**Table 2.01: Inclusion criteria and percent of included facilities with few monthly deliveries, by region.**

|               | Inclusion Criteria <sup>1</sup>    | In the 12 months prior to the survey, facilities with <sup>2</sup> : |                |              |   |
|---------------|------------------------------------|--|----------------|--------------|---|
|               |                                    | No deliveries  | Any deliveries |              | Among facilities with any deliveries, percent with 1-4 deliveries per month |
|               |                                    |  | 1-4 per month  | 5+ per month |   |
| Ghana         | Deliveries by Region               | n  | n              | n            | %   |
|               |                                    |  |                |              |   |
| Region        |                                    |  |                |              |   |
| Western       | 5+ deliveries per month            | 0  | 5              | 112          | 4%  |
| Central       | 5+ deliveries per month            | 1  | 7              | 98           | 7%  |
| Greater Accra | 5+ deliveries per month            | 10   | 36             | 103          | 35%   |
| Volta         | 5+ deliveries per month            | 1  | 15             | 60           | 23%   |
| Eastern       | 5+ deliveries per month            | 3  | 26             | 96           | 27%   |
| Ashanti       | 5+ deliveries per month            | 2  | 24             | 191          | 13%   |
| Brong Ahafo   | 5+ deliveries per month            | 1  | 12             | 108          | 11%   |
| Northern      | 1+ delivery per month              | 0  | 23             | 85           | 27%   |
| Upper East    | 1+ delivery per month (above CHPS) | 62   | 16             | 69           | 23%   |
|               | 30% random sample of CHPS          |  |                |              |   |
| Upper West    | 1+ delivery per month              | 29   | 23             | 44           | 52%   |

<sup>1</sup>Based on HMIS reports

<sup>2</sup>Based on data collected during the needs assessment

A total of 1268 facilities were visited, of which 1159 performed a delivery in the 12 months before the survey (Table 2.02).

Table 2.02: Distribution of surveyed facilities according to facility type, by region and type of operating agency

|                          | Type of facility  |                   |                           |               |               |                |               |                |
|--------------------------|-------------------|-------------------|---------------------------|---------------|---------------|----------------|---------------|----------------|
|                          | Teaching Hospital | Regional Hospital | District (Other) Hospital | Health Centre | Health Clinic | Maternity Home | CHPS Compound | All facilities |
| Ghana                    | 3                 | 9                 | 273                       | 518           | 161           | 165            | 139           | 1,268          |
| Regions                  |                   |                   |                           |               |               |                |               |                |
| Western                  | 0                 | 1                 | 24                        | 44            | 25            | 16             | 10            | 120            |
| Central                  | 0                 | 1                 | 16                        | 50            | 15            | 15             | 9             | 106            |
| Greater Accra            | 1                 | 1                 | 70                        | 23            | 16            | 35             | 2             | 148            |
| Volta                    | 0                 | 1                 | 23                        | 47            | 5             | 6              | 0             | 82             |
| Eastern                  | 0                 | 1                 | 21                        | 52            | 23            | 11             | 16            | 124            |
| Ashanti                  | 1                 | 1                 | 67                        | 74            | 26            | 45             | 2             | 216            |
| Brong Ahafo              | 0                 | 1                 | 23                        | 57            | 10            | 30             | 0             | 121            |
| Northern                 | 1                 | 0                 | 18                        | 75            | 1             | 5              | 8             | 108            |
| Upper East               | 0                 | 1                 | 6                         | 37            | 40            | 1              | 62            | 147            |
| Upper West               | 0                 | 1                 | 5                         | 59            | 0             | 1              | 30            | 96             |
| Type of operating agency |                   |                   |                           |               |               |                |               |                |
| Government               | 3                 | 9                 | 117                       | 469           | 79            | 3              | 136           | 816            |
| Private (for             | 0                 | 0                 | 105                       | 2             | 32            | 161            | 0             | 300            |

|                   |   |   |    |    |    |   |   |     |
|-------------------|---|---|----|----|----|---|---|-----|
| profit)           |   |   |    |    |    |   |   |     |
| NGO               | 0 | 0 | 0  | 0  | 2  | 0 | 1 | 3   |
| Religious Mission | 0 | 0 | 51 | 47 | 48 | 1 | 2 | 149 |

As noted in Table 2.02, 64% (816 of 1268) of all surveyed facilities are managed by the government. These government facilities include all teaching and regional hospitals, 42% (117 of 273) of district hospitals, close to half of the health clinics, and the vast majority of health centers and CHPS compounds. The remaining facilities were managed by private for-profits, non-governmental organizations (NGOs), and religious institutions.

**Case selection within facilities**

Five modules required the data collector to make some choices about who to interview or what cases to review. In the Provider Knowledge & Competency Interview for Maternal and Newborn care, the instruction to data collectors was to interview the provider who attended the largest number of deliveries in the last month who was present at the time of the interview. In the Partograph, Cesarean Delivery, Maternal and Neonatal Death reviews, the data collectors selected up to three cases. The instructions for the Partograph review were to choose the three most recent partographs completed in the last month, preferably by different providers. Instructions for the Cesarean review were to select the last three cesareans performed within the previous 12 months belonging to women who had been discharged at the time of the survey. Instructions for the Maternal Death Review and Neonatal Death Review were to select the three most recent deaths that occurred in the previous 12 months.

Given the objectives of the survey, there was no attempt to make a random selection. The samples of providers, partographs, cesareans, maternal deaths and neonatal deaths are convenience samples. For this reason, inferences based on these samples should not be applied to the larger population.

NOTE: In Upper East Region, data collectors reviewed all maternal deaths that occurred in the last year. However, for consistency of analysis, only the three most recent maternal deaths were included in the analysis for this report.

### 2.03 Data collection modules and pre-testing

Data collection tools were adapted from a set of standard AMDD modules or questionnaires that have been used in many countries worldwide. The core country team<sup>13</sup> adapted the modules to the Ghana context. Local pre-testing of the instruments was conducted during the first week of data collector training in Upper East Region, March 2010. Revisions were made to the instruments and all supporting materials before the field work in Upper East began, and before the training of data collectors in other regions.

### 2.04 Recruitment and training of data collectors & supervisors

The data collectors and team supervisors were recruited by the Ghana Health Service through the respective regional health directorates. The regions were requested to select midwives, general and community nurses and other health professionals with some experience in data collection. Factors that were considered in determining the total number of data collectors to be recruited for the assessment included the number of districts in the country, the average number of facilities in a district and the time interval required to complete an assessment for the different types of health facility. An assumption of 30 days was made for the duration of field work for each team. From the pre-testing exercise, it was found that it would take a team of 4 persons about two days and half a day to fully assess a district hospital and a health centre respectively. It was then estimated that with an average of five health facilities, including a district hospital, it would take about 5-6 days to complete assessment in a district. A total number of 120 data collectors were deemed necessary for the countrywide assessment, excluding Upper East region. The number of teams allotted to each region was dependent on the number of districts and the total number of facilities to be assessed. The travelling days to reach health facilities within the region was also taken into consideration. All data collection team supervisors were health professionals as were most data collectors. The majority of data collectors were midwives.

With the exception of Upper East Region that conducted training for its own data collectors, the data collectors were grouped into three zones, with three regions per zone. Each zonal training program occurred over 5 days. The training session in Bolgatanga, Upper East Region was conducted from 19-24 April 2010 (5 ½ days); the training session for zone 1 in Sunyani, Brong Ahafo occurred 20-24 July 2010; the training session for zone 2 in Koforidua occurred 27-31 July 2010; and the training session for zone 3 in Mankessim occurred 3-7 August 2010. Data collection team supervisors were identified during each training session based on their performance during the training, as well as their previous obstetric and data collection experience. Regional public health nurses and deputy directors of public health (regional team) also participated in the training to understand the scope of the study, assist with logistical

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<sup>13</sup> Staff from the GHS, MOH, UNFPA, UNICEF, and GSS

planning and to facilitate entry to facilities. Staff from GSS who were to be responsible for data management entry and analysis participated in the first zonal training in Sunyani, Brong Ahafo.

A total of 132 data collectors (including those for Upper East region) and supervisors were trained and divided into 33 teams of four. Table 2.1A in the Appendix contains a list of data collectors and the regions where they worked while Table 2.2A in the Appendix has names of supervisors and facilitators. All team members collected data and the supervisor for each team had the additional responsibilities of:

- Communication with the field coordinator at the GHS.
- Coordination of the team's activities at each facility, often introducing the team and its mission with an official letter of introduction from the GHS.
- Quality control of the data collection and completion of the modules
- Delivery of completed modules in their respective envelopes to the regional team for onward transmission to GSS through national supervisory teams.
- Overall planning and logistics for the team.

The training team consisted of core country team members, AMDD staff and in the case of the trainings in July and August, data collectors and supervisors from Upper East Region who had completed data collection in June. These experienced data collectors were each assigned to support the data collection in one region and accompanied the newly trained data collectors into the field to support their first weeks of field work.

Each training session included an overview of the survey objectives, background information on EmONC, standard interviewer techniques, study behavior and etiquette, a detailed understanding of how Modules 1-11 and their worksheets were to be completed, and classroom practice. Didactic sessions entailed discussion of the definitions of obstetric complications, explanations of medical terminology, the need to consult multiple registers for complete information, and a review of critical equipment, supplies and medications. Each data collector and supervisor received a detailed manual explaining the objective of each module, which questions should be directed to whom, general rules about data collection and specific instructions for many individual questions. A post-training evaluation was completed by each data collector and supervisor. All participants passed the evaluation with 80% or more correct. Practice took place among the team members in the classroom and all teams also participated in a field activity where they practiced at facilities within a reasonable drive from the training sites. During the field activity, each team was accompanied by at least one member of the team of trainers. The quality of the "practice" facilities was sufficiently good that the data collected during the field activity were included in the survey. However, since some facilities could not be finished during the activity, data collection teams returned to complete the modules after the start of field work.

### 2.05 Research ethics

The data collectors were trained on the principles of confidentiality. No person's name (except for that of the data collector) was recorded on any of the modules. Permission to enter each facility and to consult with the different employees and registers was always requested at the beginning of each visit, accompanied by an official letter from the GHS. The medical director or matron's response was always respected. Providers who were interviewed for Module 7 granted oral consent prior to the interview itself, and this oral consent was recorded in the module.

### 2.06 Organization of data collection (field work)

GHS identified a staff person to coordinate the implementation of the assessment. This person was responsible for recruiting the data collectors, organizing and managing the field work, ensuring adequate logistics and transportation planning, determining the routes the teams would take to visit facilities, managing and oversight of data collection teams in the field, and communication with data collection teams and health facilities to ensure access to facilities. The GHS issued a letter to all public and private facilities requesting their support in the national EmONC assessment. Field work began immediately after data collector training.

### 2.07 Data entry and analysis

The Ghana Statistical Services was contracted to manage the data entry and to conduct analysis. Twenty data entry staff were hired and trained in early August. The GSS developed data entry screens in CSPro 4.0 and double data entry was performed between August and December 2010. GSS staff carried out some preliminary cleaning of the files and sent them to AMDD for further cleaning. Cleaning continued throughout the process of preparing preliminary findings.

The data files were exported into SPSS 13 and STATA 10 for analysis. GSS and AMDD shared analysis tasks. Facility fact sheets were developed by AMDD and were presented in April 2010 at the Health Summit. Preliminary results tables were developed by GSS and AMDD and discussed in an analysis planning workshop in March 2011. Attending the workshop were members of the Ministry of Health/GHS, KNUST and University of Ghana School of Public Health, GSS, AMDD and an international consultant.

Report writing began in July 2011, led by a consultant hired to coordinate the report writing process. Report writing began during a workshop of the core team which served to identify additional results tables, revise existing ones and draft key findings. Teams of experts were assigned to complete specific chapters, based on their area of expertise, and the consultant was charged with consolidating and harmonizing these chapters, as well as drafting critical sections of the report.

The analysis in this report is based on two groupings of facilities – all 1268 facilities and the 1159 facilities that provided delivery services in the past year. If the facility had done no deliveries in the past year, only Modules 1 – 3 were completed and part of Module 2 was left blank. Whenever possible the entire 1268 facilities are analyzed, but many of the analyses are restricted to those facilities providing maternity and childbirth services.

#### 2.08 Quality assurance

Some quality assurance measures were put in place from the recruitment of data collectors, through data collector training and the field work period. The inclusion of at least one midwife in each team served to ensure better understanding of technical issues relating to obstetric and newborn care. Secondly, the recruitment of data collectors involved in the Upper East data collection (which occurred earlier) to support teams in their first week of field work contributed to clarifying issues or solving initial problems that data collectors may have encountered. Furthermore, teams were enabled to make calls at anytime they needed assistance to regional and national level supervisory teams for additional clarification and solving of technical or logistic problems that were encountered by data collectors. Regional and national teams also conducted at least two weeks' supervisory visits to each zone to support data collector teams during the field work period. A major challenge that was faced by teams was the delay in topping up the stipend for accommodation and per diem for food when the first tranche of monies advanced to them ran out. This problem was resolved in various ways, including the advancing of monies from the regional level or the pooling of team members' monies to cover their accommodation and meals.

AMDD staff provided technical assistance throughout the process, particularly during module adaptation, data collector training, data analysis and report writing. The support included several trips to Ghana to work with the GHS, GSS, and other team members. Selected analysis results were independently verified both by AMDD and GSS.

#### 2.09 Limitations of the survey

Facility records of deliveries, obstetric complications, cesareans and deaths (maternal and newborn) are often incomplete. In particular, maternal deaths due to indirect causes are not likely to be found in the maternity or gynecological wards. Furthermore, not always will the pregnancy status of a woman who dies of hepatitis, for example, be prominently displayed in a logbook or register. Complications are frequently under-recorded and therefore "Met Need for EmONC" may be underestimated; under-recording of complications (and deaths) also will impact the direct obstetric case fatality rate. Misclassification of stillbirths and very early neonatal deaths may occur because staff feels unjustifiably guilty about the death of a newborn and will therefore classify it as a stillbirth. Or staff may not want to tell a mother that her newborn was born alive and then died.



Observation of equipment, supplies and drugs was encouraged for some items as spot checks. Given the very long lists of these articles, not all items were observed. It is possible that observation was not complete for how drugs were protected, stored, whether they were refrigerated or in dry climate-controlled areas.

Inclusion criteria for facilities were not consistent across the country. For the regions in the northern sector, namely Northern, Upper East and Upper West regions, facilities included in the assessment were birthing facilities that conducted at least one delivery. Upper East however assessed all birthing facilities whether a delivery had been recorded there or not in the year preceding the assessment. For the remaining seven regions health facilities that had conducted at least five deliveries per month in the year preceding the assessment was the criterion used. This would therefore make comparison across regions inappropriate and though it appears to be a limitation, the assessment seeks to determine region-specific problems in order to address problems peculiar to each region. As regions study their own results, they should keep in mind the variations in selection criteria.

#### 2.10 Organization of the report

Chapters 3 – 9 cover the results of the survey and recommendations are found in chapter 10. Because of the large number of tables in every chapter, the reader will find some tables in the text along with charts and graphs. The tables are numbered sequentially where the first number (to the left of the decimal place) refers to the chapter number. Some table numbers are followed by the letter 'A'. The letter means that these tables are found at the end of the report (in the Appendix, 'Tables' section). For example, Table 3.01A will be found at the end of the report while Table 3.01 is found in the body of the text.

# CHAPTER THREE Emergency Obstetric and Newborn Care Indicators

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This chapter is a review of the eight key indicators of Emergency Obstetric and Newborn Care. These indicators measure the availability and quality of life-saving care for pregnant women and newborn babies in the country. These indicators can be used to set priorities for programmes in Ghana as well as to monitor them. The indicators are described as follows:

- Indicator 1: Availability of emergency obstetric care: basic and comprehensive care facilities
- Indicator 2: Geographic distribution of emergency obstetric care facilities
- Indicator 3: Proportion of all births in emergency obstetric care facilities
- Indicator 4: Met need for emergency obstetric care
- Indicator 5: Caesarean sections as a proportion of all births
- Indicator 6: Direct Obstetric case fatality rate
- Indicator 7: Intrapartum and very early neonatal death rate
- Indicator 8: Proportion of maternal deaths due to indirect causes in emergency obstetric care facilities

The service statistics used to calculate these indicators were based on 12 consecutive months of data collected between April 2009 and June 2010. The data used to determine whether a signal function was performed were based on the 3 months period prior to the facility visit.

## *3.01 Indicator 1: Availability of EmONC services*

There are specific signal functions that are assessed in facilities to determine the availability of EmONC services. The presence or absence of these signal functions is used to determine whether a facility provides basic or comprehensive emergency obstetric and newborn care. The signal functions are shown in Table 3.01. For a facility to be considered a basic EmONC facility it needs to provide all 7 basic signal functions while all 9 need to be present for comprehensive EmONC facilities. Another level of classification was used in this assessment where facilities that performed 7 or 8 signal functions (if hospitals) or 5 or 6 signal functions (if maternities) were classified as partially functioning EmONC facilities. Signal functions had to have been performed in the three months prior to the facility visit.

**Table 3.01: Signal functions used to identify basic and comprehensive EmONC services**

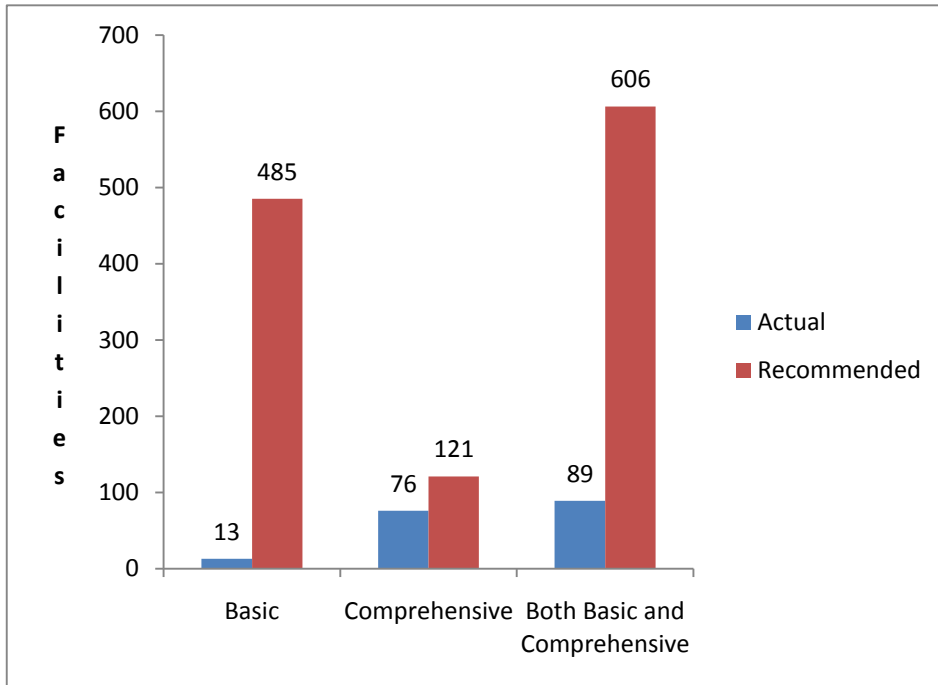
| <b>BASIC SERVICES</b>   | <b>COMPREHENSIVE SERVICES</b>  |
|---|--|
| (1) Administer parenteral antibiotics   | Perform signal functions 1-7 plus<br><br>(8) Perform surgery (e.g.) caesarean section<br><br>(9) Perform blood transfusion |
| (2) Administer uterotonic (e.g. parenteral oxytocin)  |  |
| (3) Administer parenteral anticonvulsants for pre-eclampsia and eclampsia (e.g. magnesium sulphate) |  |
| (4) Manual removal of placenta  |  |
| (5) Removal of retained products (e.g. manual vacuum extraction, dilatation and curettage)          |  |
| (6) Perform assisted vaginal delivery (e.g. vacuum extraction)                                      |  |
| (7) Perform basic neonatal resuscitation (e.g. with bag and mask)                                   |  |

National standards recommend that there should be 5 EmONC facilities per 200,000 population where at least one is a comprehensive facility. Using these standards we find that out of the recommended 606 EmONC facilities nationally, 89 exist leaving a gap of 517 facilities. Similarly, for comprehensive EmONC facilities nationally, we find there is a gap of 45. Out of 485 recommended basic sites, we have 13 leaving a gap of 472 (Table 3.01A in the Appendix and Fig. 3.1).

There is also regional variation in the distribution of EmONC facilities. The Ashanti and Greater Accra Regions have widest gap of EmONC facilities of 97 and 87 facilities respectively while the Upper West Region has the lowest gap of 12 facilities. In terms of CEmONC, the Greater Accra Region has the biggest gap of 13 while two regions (i.e. Eastern and Upper West) have exceeded the number recommended for CEmONC facilities. For Basic sites, the Ashanti has the biggest gap (91) while Upper West has lowest gap (14).

Please note that international recommendations are different from these national standards. UN guidelines recommend that there should be at least 5 EmONC facilities (including at least one comprehensive facility) per 500,000 population. In order to allow comparisons with other countries, the distribution of EmONC according to international standards is shown in Table 3.02A in the Appendix and Fig. 3.2. We find that using international standards, the gaps are significantly reduced suggesting that perhaps the international standards are more realistic in terms of achieving targets than the national standards.

**Fig. 3.01: Distribution of EmONC facilities using national standards (per 200,000 population)**



**Fig. 3.02: Distribution of EmONC facilities using UN standards (per 500,000 population)**

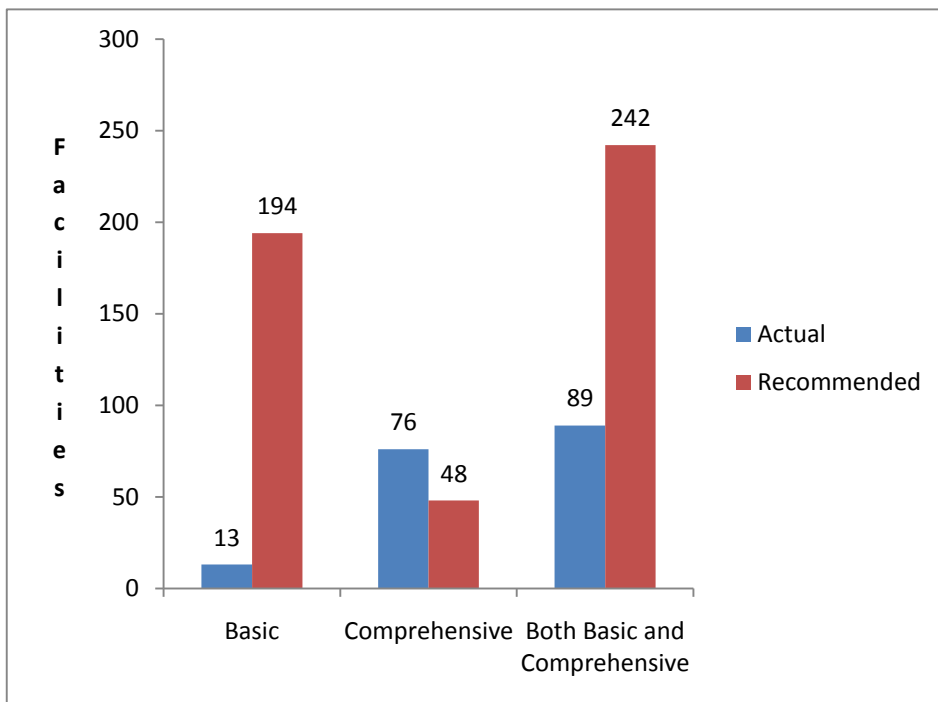


Table 3.02 shows the distribution of facilities by EmONC classification, region, facility type and designation. We find that of all hospitals providing deliveries (i.e. 281), 76 of them were comprehensive (27%), 7 of them were basic (2%), 111 were partial (40%), and 87 (31%) were non-EmONC. For Health centres, 0.4% was basic, 22% were partial and 77% were non-EmONC. For Health clinics, 0.7% was basic, 17% were partial and 82% were non-EmONC. For maternity homes, 2% were basic, 17% were partial and 81% non-EmONC. Similarly, for CHPS compounds, there were 4% partially functioning and 96% were non-EmONC and none basic. Table 3.05A in the Appendix gives similar results when the reference period is extended to 12 months. For a complete list of EmONC classification and signal function performance per facility, please see Table 3.07A in the Appendix.

It should be remembered that this EmONC classification is based on reported performance of signal functions and that actual performance was not ascertained which may have resulted in an overestimation or underestimation of numbers of EmONC facilities. Also, the reference period used here is 3 months. It is possible especially for lower level facilities that some signal functions were not performed simply because of low case-loads and not because facilities had no capacity. For such facilities, extending the reference period to say 12 months, may result in increased coverage of signal functions. Tables 3.03A to 3.04A in the Appendix gives results when the reference period used is 12 months. We find that there is a modest increase in number of BEmONC facilities from 13 to 30 and an increase in CEmONC facilities from 76 to 110 using national standards.

Table 3.06A in the Appendix looks more closely at whether every facility that performed the SF in last 12 months (but not recently) was 'ready' to perform it on the day of the assessment. For the first 4 signal functions, almost all these facilities were ready on the day of the assessment - meaning it is reasonable to assume they didn't perform it in the last 3 months because no patient needed it. For signal functions 5-9, fewer facilities were 'ready.'

**Table 3.02: Distribution of EmONC facilities by region, facility type and designation**

|               | EmONC Status <sup>1</sup> |         |       |               | Total number of facilities |
|---------------|---------------------------|---------|-------|---------------|----------------------------|
|               | Non-EmONC                 | Partial | Basic | Comprehensive |                            |
|               | n                         | n       | n     | n             | n                          |
| National      | 792                       | 278     | 13    | 76            | 1159                       |
| Region        |                           |         |       |               |                            |
| Western       | 69                        | 46      | 2     | 3             | 120                        |
| Central       | 71                        | 30      | 0     | 4             | 105                        |
| Greater Accra | 90                        | 37      | 2     | 9             | 138                        |
| Volta         | 44                        | 33      | 1     | 3             | 81                         |
| Eastern       | 90                        | 16      | 1     | 14            | 121                        |

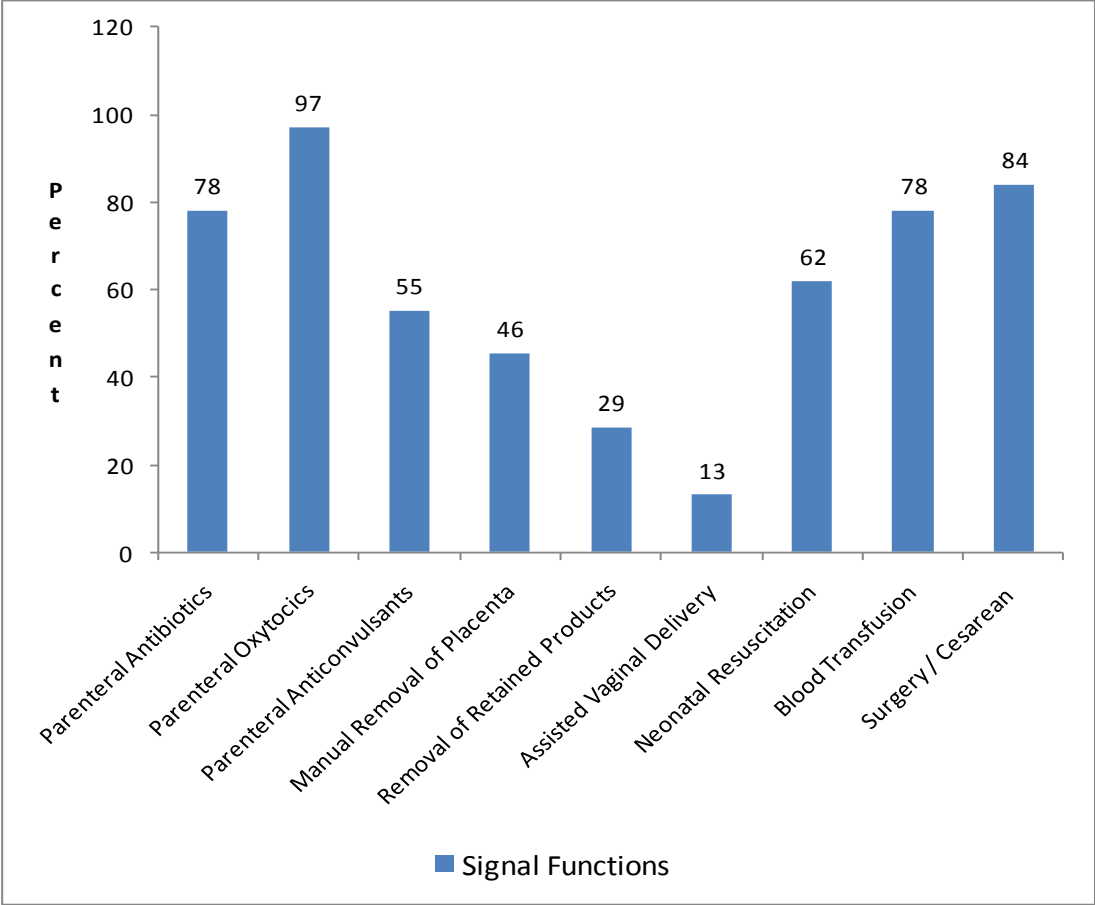
|  |     |     |    |    |     |
|--|-----|-----|----|----|-----|
| Ashanti  | 146 | 47  | 3  | 18 | 214 |
| Brong Ahafo  | 88  | 21  | 1  | 10 | 120 |
| Northern   | 68  | 29  | 3  | 8  | 108 |
| Upper East   | 69  | 13  | 0  | 3  | 85  |
| Upper West   | 57  | 6   | 0  | 4  | 67  |
|  |     |     |    |    |     |
| Type of facility   |     |     |    |    |     |
| Teaching Hospital  | 0   | 0   | 0  | 3  | 3   |
| Regional Hospital  | 0   | 3   | 0  | 6  | 9   |
| District Hospital  | 87  | 108 | 7  | 67 | 269 |
| Health Centre  | 394 | 113 | 2  | 0  | 509 |
| Health Clinic  | 112 | 23  | 1  | 0  | 136 |
| Maternity Home   | 133 | 28  | 3  | 0  | 164 |
| CHPS Compound  | 66  | 3   | 0  | 0  | 69  |
|  |     |     |    |    |     |
| Designation  |     |     |    |    |     |
| Urban  | 407 | 204 | 10 | 74 | 695 |
| Rural  | 385 | 74  | 3  | 2  | 464 |
| <sup>1</sup> Basic means 7 signal functions performed; Comprehensive means 9 signal functions performed; partial means 1 or 2 signal functions not performed (relative to expected performance) and Non-EmONC means more than 2 signal functions not performed |     |     |    |    |     |

### Performance of signal functions

Table 3.03 and Fig. 3.03, give the breakdown of signal functions that were performed in the last 3 months by type of facility and region. Out of the facilities surveyed 97% provided parenteral oxytocics and this was the signal function that had the highest coverage, followed by parenteral antibiotics (78%). Signal functions with the least coverage included assisted vaginal delivery (13% of facilities), (the absence of this signal function explained why many facilities did not qualify as basic EmONC facilities), removal of retained products (29% of facilities) and manual removal of placenta (46% of facilities). With the exception of the teaching hospitals, we find that this pattern of signal function coverage is similar when the data are analysed by region and facility type.

Please note that in Table 3.03 and Fig. 3.03, percentages for blood transfusion and obstetric surgery have been calculated for hospitals only as lower level facilities are not expected to perform these services.

**Fig. 3.03: National coverage of signal functions<sup>1</sup>**



<sup>1</sup>For Blood transfusion and Surgery, only hospitals are included

**Table 3.03: Percent of facilities that performed each signal function in the last 3 months, by region, type of facility and sector (among facilities that do deliveries)**

|                          | Total number of facilities that do deliveries | Signal Function        |                      |                            |                            |                              |                           |                       |                                |                                  |
|--------------------------|---|------------------------|----------------------|----------------------------|----------------------------|------------------------------|---------------------------|-----------------------|--------------------------------|----------------------------------|
|                          |   | Parenteral Antibiotics | Parenteral Oxytocics | Parenteral Anticonvulsants | Manual Removal of Placenta | Removal of Retained Products | Assisted Vaginal Delivery | Newborn resuscitation | Blood Transfusion <sup>1</sup> | Surgery / Caesarean <sup>1</sup> |
|                          |   | %                      | %                    | %                          | %                          | %                            | %                         | %                     | %                              | %                                |
| <b>National</b>          | <b>1159</b>                                   | <b>78</b>              | <b>97</b>            | <b>55</b>                  | <b>46</b>                  | <b>29</b>                    | <b>13</b>                 | <b>62</b>             | <b>78</b>                      | <b>84</b>                        |
| Region                   |   |                        |                      |                            |                            |                              |                           |                       |                                |                                  |
| Western                  | 120   | 87                     | 95                   | 72                         | 60                         | 31                           | 8                         | 56                    | 104                            | 96                               |
| Central                  | 105   | 84                     | 100                  | 48                         | 54                         | 25                           | 10                        | 61                    | 82                             | 82                               |
| Greater Accra            | 138   | 88                     | 99                   | 63                         | 40                         | 45                           | 14                        | 70                    | 58                             | 79                               |
| Volta                    | 81  | 81                     | 98                   | 63                         | 63                         | 21                           | 12                        | 75                    | 92                             | 100                              |
| Eastern                  | 121   | 78                     | 99                   | 40                         | 40                         | 26                           | 16                        | 67                    | 95                             | 95                               |
| Ashanti                  | 214   | 74                     | 98                   | 52                         | 45                         | 39                           | 18                        | 61                    | 64                             | 80                               |
| Brong Ahafo              | 120   | 68                     | 100                  | 55                         | 42                         | 24                           | 33                        | 74                    | 88                             | 83                               |
| Northern                 | 108   | 93                     | 99                   | 72                         | 53                         | 27                           | 15                        | 57                    | 84                             | 63                               |
| Upper East               | 85  | 52                     | 99                   | 28                         | 32                         | 13                           | 15                        | 48                    | 129                            | 86                               |
| Upper West               | 67  | 73                     | 75                   | 58                         | 21                         | 9                            | 10                        | 37                    | 100                            | 150                              |
| Type of facility         |   |                        |                      |                            |                            |                              |                           |                       |                                |                                  |
| Teaching Hospital        | 3   | 100                    | 100                  | 100                        | 100                        | 100                          | 100                       | 100                   | 100                            | 100                              |
| Regional Hospital        | 9   | 100                    | 100                  | 89                         | 100                        | 89                           | 89                        | 100                   | 100                            | 100                              |
| District /Other Hospital | 269   | 97                     | 99                   | 79                         | 71                         | 72                           | 39                        | 84                    | 75                             | 84                               |
| Health Centre            | 509   | 78                     | 96                   | 48                         | 42                         | 13                           | 3                         | 60                    | N/A                            | N/A                              |
| Health Clinic            | 136   | 65                     | 97                   | 54                         | 32                         | 18                           | 7                         | 49                    | N/A                            | N/A                              |
| Maternity Home           | 164   | 68                     | 99                   | 47                         | 35                         | 20                           | 7                         | 52                    | N/A                            | N/A                              |



|  |     |     |     |    |    |    |    |     |     |     |
|--|-----|-----|-----|----|----|----|----|-----|-----|-----|
| CHPS Compound  | 69  | 55  | 96  | 35 | 17 | 3  | 1  | 29  | N/A | N/A |
|  |     |     |     |    |    |    |    |     |     |     |
| <b>Sector</b>  |     |     |     |    |    |    |    |     |     |     |
| Government   | 727 | 77  | 96  | 54 | 46 | 24 | 12 | 61  | 91  | 85  |
| Private (for profit)   | 284 | 79  | 98  | 54 | 40 | 37 | 12 | 58  | 52  | 76  |
| NGO  | 3   | 100 | 100 | 67 | 33 | 67 | 0  | 100 | 0   | 0   |
| Religious Mission  | 145 | 83  | 97  | 66 | 52 | 36 | 22 | 71  | 96  | 96  |
|  |     |     |     |    |    |    |    |     |     |     |
| Urban/rural designation  |     |     |     |    |    |    |    |     |     |     |
| Urban  | 695 | 84  | 99  | 60 | 54 | 41 | 19 | 70  | 79  | 85  |
| Rural  | 464 | 70  | 95  | 48 | 33 | 10 | 5  | 49  | 67  | 78[ |
| <i>Note: Facilities that did not answer questions about the signal function are assumed not to perform it.</i> |     |     |     |    |    |    |    |     |     |     |
| <sup>1</sup> Only hospitals are included in the denominator of this column                                     |     |     |     |    |    |    |    |     |     |     |

### Provision of uterotonic drugs

Oxytocin is the drug of choice for active management of the third stage of labour and it was used as the only drug in 36% of facilities. Most facilities (62%) used both oxytocin and ergometrine. Very few facilities used only ergometrine. Exclusive use of ergometrine was found only at lower level facilities (Table 3.04).

**Table 3.04: Percentage of facilities that administered uterotonic drugs in the last 3 months, by type of medication, region, type of Facility and designation**

|                    | Total number of facilities that performed deliveries | Percentage of facilities that administered Uterotonic Drugs in last 3 months | Among facilities that administered Uterotonic Drugs in the last 3 months, percent that used: |                  |      |
|--------------------|--|--|--|------------------|------|
|                    |  |  | Oxytocin only  | Ergometrine only | Both |
|                    | n  | %  | %  | %                | %    |
| National           | 1159   | 97   | 36%  | 1%               | 62%  |
| Region             |  |  |  |                  |      |
| Western            | 120  | 95   | 40%  | 4%               | 56%  |
| Central            | 105  | 100  | 54%  | 4%               | 42%  |
| Greater Accra      | 138  | 99   | 29%  | 1%               | 71%  |
| Volta              | 81   | 98   | 38%  | 0%               | 62%  |
| Eastern            | 121  | 99   | 33%  | 1%               | 66%  |
| Ashanti            | 214  | 98   | 46%  | 1%               | 53%  |
| Brong Ahafo        | 120  | 100  | 27%  | 0%               | 73%  |
| Northern           | 108  | 99   | 17%  | 0%               | 82%  |
| Upper East         | 85   | 99   | 20%  | 2%               | 76%  |
| Upper West         | 67   | 75   | 72%  | 0%               | 28%  |
| Type of Facility   |  |  |  |                  |      |
| Teaching Hospital  | 3  | 100  | 33%  | 0%               | 67%  |
| Regional Hospital  | 9  | 100  | 11%  | 0%               | 89%  |
| District Hospital  | 269  | 100  | 32%  | 0%               | 67%  |
| Health Centre      | 509  | 95   | 35%  | 1%               | 64%  |
| Health Clinic      | 136  | 96   | 33%  | 2%               | 65%  |
| Maternity Home     | 164  | 99   | 54%  | 2%               | 44%  |
| CHPS Compound      | 69   | 96   | 33%  | 5%               | 62%  |
| Designation        |  |  |  |                  |      |
| <sup>1</sup> Urban | 695  | 99   | 40%  | 1%               | 60%  |
| Rural              | 464  | 94   | 34%  | 2%               | 64%  |

<sup>1</sup>Row percentage may not add up to 100% due to rounding

### Provision of parenteral anticonvulsants

Only 642 out of the 1157 facilities surveyed and with data, (55%) administered anticonvulsants in the 3 months preceding the survey (Table 3.05). This proportion is very low given the high incidence of severe pre-eclampsia and eclampsia in the country as well as the level of contribution of these conditions to maternal mortality (Table 3.14). It is also a cause for concern to see that out of all facilities that administered parenteral anticonvulsants in the last 3 months, only 40% used the recommended anticonvulsant which is magnesium sulphate. Up to 60% of the facilities used diazepam only, a drug no longer recommended for severe pre-eclampsia and eclampsia. All Regional hospitals used magnesium sulphate while health centres used it least (15%). It is not clear why uptake of magnesium sulphate is not higher in all facilities surveyed but, subsequent tables can provide more insight.

**Table 3.05: Percentage of facilities that administered parenteral anticonvulsants in the last 3 months, by type of medication and region.**

|                          | Total number of facilities that performed deliveries <sup>1</sup> | Total number of facilities that administered anticonvulsant in last 3 months |     | Among facilities that administered anticonvulsants in the last 3 months, percent that used: |               |      |
|--------------------------|---|--|-----|---|---------------|------|
|                          |   |  |     | Magnesium sulphate only   | Diazepam only | Both |
|                          | n   | n  | %   | %   | %             | %    |
| National                 | 1157 <sup>1</sup>   | 642  | 55  | 16  | 60            | 24   |
| Region                   |   |  |     |   |               |      |
| Western                  | 120   | 86   | 72  | 9   | 73            | 17   |
| Central                  | 105   | 50   | 48  | 36  | 48            | 16   |
| Greater Accra            | 138   | 87   | 63  | 18  | 44            | 37   |
| Volta                    | 81  | 51   | 63  | 10  | 57            | 31   |
| Eastern                  | 121   | 49   | 40  | 22  | 45            | 31   |
| Ashanti                  | 214   | 112  | 52  | 30  | 49            | 21   |
| Brong Ahafo              | 120   | 66   | 55  | 5   | 64            | 32   |
| Northern                 | 108   | 78   | 72  | 4   | 77            | 19   |
| Upper East               | 85  | 24   | 28  | 13  | 83            | 4    |
| Upper West               | 67  | 39   | 58  | 5   | 79            | 13   |
| Teaching Hospital        | 3   | 3  | 100 | 0   | 0             | 100  |
| Regional Hospital        | 9   | 8  | 89  | 37  | 0             | 63   |
| District /Other Hospital | 268   | 213  | 79  | 35  | 18            | 47   |
| Health Centre            | 508   | 244  | 48  | 5   | 84            | 10   |

|                |     |     |    |    |     |    |
|----------------|-----|-----|----|----|-----|----|
| Health Clinic  | 136 | 73  | 54 | 8  | 82  | 10 |
| Maternity Home | 164 | 77  | 47 | 9  | 77  | 14 |
| CHPS Compound  | 69  | 24  | 35 | 0  | 100 | 0  |
|                |     |     |    |    |     |    |
| Designation    |     |     |    |    |     |    |
| Urban          | 695 | 417 | 60 | 23 | 45  | 31 |
| Rural          | 464 | 225 | 48 | 3  | 87  | 9  |

<sup>1</sup>Two facilities that did not answer questions on type of Anticonvulsants were excluded. Column total is different from n=1159 (facilities that do deliveries)

### Provision of removal of retained products

In Table 3.06, we find that only 29% of facilities provided removal of retained products and MVA was frequently used (53%). Health centres used MVA less frequently (35%) than other facility types. We find that performance of this signal function is less frequent in lower level facilities such as health centres (13%), health clinics (18%), maternity homes (20%) and CHPS compounds (3%).

**Table 3.06: Percentage of facilities that removed retained products in the last 3 months, by method, region and facility type.**

|                  | Total number of facilities that performed deliveries | Total number of facilities that Removed retained products in last 3 months |      | Among facilities that removed retained products in the last 3 months, percent that used: |                                     |                                      |             |
|------------------|--|--|------|--|-------------------------------------|--------------------------------------|-------------|
|                  |  | n  | %    | Manual vacuum aspiration   | <sup>1</sup> Dilatation & curettage | <sup>1</sup> Dilatation & evacuation | Misoprostol |
|                  | n  |  |      | %  | %                                   | %                                    | %           |
| National         | 1159   | 332  | 29%  | 53%  | 53                                  | 27                                   | 18%         |
|                  |  |  |      |  |                                     |                                      |             |
| Region           |  |  |      |  |                                     |                                      |             |
| Western          | 120  | 37   | 31%  | 59%  | 55                                  | 27                                   | 19%         |
| Central          | 105  | 26   | 25%  | 31%  | 50                                  | 28                                   | 46%         |
| Greater Accra    | 138  | 62   | 45%  | 55%  | 49                                  | 34                                   | 13%         |
| Volta            | 81   | 17   | 21%  | 47%  | 42                                  | 31                                   | 41%         |
| Eastern          | 121  | 32   | 26%  | 84%  | 47                                  | 32                                   | 19%         |
| Ashanti          | 214  | 83   | 39%  | 37%  | 68                                  | 17                                   | 10%         |
| Brong Ahafo      | 120  | 29   | 24%  | 66%  | 44                                  | 30                                   | 24%         |
| Northern         | 108  | 29   | 27%  | 48%  | 69                                  | 23                                   | 10%         |
| Upper East       | 85   | 11   | 13%  | 64%  | 67                                  | 33                                   | 0%          |
| Upper West       | 67   | 6  | 9%   | 83%  | 40                                  | 20                                   | 33%         |
|                  |  |  |      |  |                                     |                                      |             |
| Type of facility |  |  |      |  |                                     |                                      |             |
| Teaching         | 3  | 3  | 100% | 100  | 33                                  | 33                                   | 100         |

|   |     |     |     |     |                  |     |     |
|---|-----|-----|-----|-----|------------------|-----|-----|
| Hospital <sup>1</sup>   |     |     |     |     |                  |     |     |
| Regional Hospital   | 9   | 8   | 89% | 100 | 50               | 20  | 38  |
| District/Other Hospital   | 269 | 194 | 72% | 50  | 55               | 27  | 19  |
| Health Centre   | 509 | 68  | 13% | 35  | N/A <sup>2</sup> | N/A | 15  |
| Health Clinic   | 136 | 24  | 18% | 67  | N/A              | N/A | 17  |
| Maternity Home  | 164 | 33  | 20% | 76  | N/A              | N/A | 12  |
| CHPS Compound   | 69  | 2   | 3%  | 100 | N/A              | N/A | 0   |
|   |     |     |     |     |                  |     |     |
| <b>Designation</b>  |     |     |     |     |                  |     |     |
| Urban   | 695 | 285 | 41% | 55% | 55               | 26  | 19% |
| Rural   | 464 | 47  | 10% | 38% | 31               | 31  | 13% |
| <i>Note: Facilities that did not answer a question about method used are assumed to have not used the method. This provides a conservative estimate of method use</i> |     |     |     |     |                  |     |     |
| <sup>1</sup> Only Hospitals included in the denominator for this column. (Only hospitals are expected to perform either D&C or D&E)                                   |     |     |     |     |                  |     |     |
| <sup>2</sup> N/A: These facilities are not expected to perform either D&C or D&E  |     |     |     |     |                  |     |     |

### Provision of assisted vaginal delivery

In Table 3.07, we find that assisted vaginal delivery was the least performed signal function as only 13% of facilities that provided deliveries performed it. Where this procedure was performed, most facilities used vacuum extractor only (94%).

**Table 3.07: Percentage of facilities that performed assisted vaginal delivery in the last 3 months, by method, region and facility type**

|                      | Total number of facilities that performed deliveries | Total number of facilities performed assisted vaginal delivery in last 3 months |    | Among those that performed assisted vaginal delivery in last 3 months, percent that used: |              |      |
|----------------------|--|---|----|---|--------------|------|
|                      |  |   |    | Vacuum extractor only   | Forceps only | Both |
|                      | n  | n   | %  | %   | %            | %    |
| National             | 1159   | 153   | 13 | 94  | 3            | 1    |
| Region               |  |   |    |   |              |      |
| <sup>1</sup> Western | 120  | 9   | 6  | 100   | 0            | 0    |
| <sup>1</sup> Central | 105  | 11  | 7  | 91  | 0            | 0    |
| Greater Accra        | 138  | 19  | 12 | 89  | 11           | 0    |
| Volta                | 81   | 10  | 7  | 90  | 10           | 0    |

|  |     |     |     |     |   |    |
|--|-----|-----|-----|-----|---|----|
| Eastern  | 121 | 19  | 12  | 100 | 0 | 0  |
| Ashanti  | 214 | 39  | 25  | 92  | 3 | 3  |
| Brong Ahafo  | 120 | 16  | 10  | 94  | 6 | 0  |
| Northern   | 108 | 13  | 8   | 100 | 0 | 0  |
| Upper East   | 85  | 7   | 5   | 100 | 0 | 0  |
| Upper West   | 67  | 10  | 7   | 90  | 0 | 0  |
|  |     |     |     |     |   |    |
| Type of facility   |     |     |     |     |   |    |
| Teaching Hospital  | 3   | 3   | 100 | 67  | 0 | 33 |
| Regional Hospital  | 9   | 8   | 89  | 100 | 0 | 0  |
| District Hospital  | 269 | 105 | 39  | 96  | 4 | 0  |
| <sup>1</sup> Health Centre                                       | 509 | 16  | 3   | 88  | 0 | 0  |
| Health Clinic  | 136 | 9   | 7   | 100 | 0 | 0  |
| <sup>1</sup> Maternity Home                                      | 164 | 11  | 7   | 82  | 9 | 0  |
| CHPS Compound  | 69  | 1   | 1   | 100 | 0 | 0  |
|  |     |     |     |     |   |    |
| Urban/rural designation  |     |     |     |     |   |    |
| <sup>1</sup> Urban   | 695 | 132 | 86  | 93  | 4 | 1  |
| Rural  | 464 | 21  | 14  | 100 | 0 | 0  |
| <sup>1</sup> Row total may not add up due to missing information |     |     |     |     |   |    |

### Reasons for not performing the signal functions

Facilities that did not provide the signal functions were asked why these functions were not provided (Table 3.08). The most common recurring reason for not performing a function was the lack of an indication for the function. However in the case of assisted vaginal delivery, the commonest response for not performing the function was lack of training. Availability of human resources for caesarean delivery was the commonest reason why this was not performed, while for blood transfusion, the problem was policy issues.

Certain facilities where signal functions were not performed were found not to have either the appropriate equipment/drugs or personnel to perform the functions. This was highest for assisted vaginal delivery, blood transfusion and caesarean section. Some facilities that reported 'no indication' for not performing a signal function also had other reasons for not performing that signal function, such as lack of drugs, equipment or skilled personnel so that, this signal function could still not be provided even when there was indication (Table 3.08A in the Appendix).

**Table 3.08: Percentage of facilities that provided the signal functions in the last 3 months and reasons for not providing, by function (among facilities that do deliveries)**

| Signal Function                  | Number of facilities that DID perform the procedure in the last 3 months | Percentage of facilities (N=1159) that provided the procedure in the last 3 months | Number of facilities that did not perform the procedure in the last 3 months | Percentage of facilities that responded that the procedure                         |                 |                          |                   |               |               |
|----------------------------------|--|--|--|--|-----------------|--------------------------|-------------------|---------------|---------------|
|                                  |  |  |  | was not provided in the last 3 months due to lack of (multiple responses allowed): |                 |                          |                   |               |               |
|                                  |  |  |  | availability of human resources  | training issues | supplies/equipment/drugs | management issues | policy issues | no indication |
| n                                | %  | n  | %  | %  | %               | %                        | %                 | %             | %             |
| Parenteral antibiotics           | 906  | 78   | 252  | 2  | 6               | 12                       | 5                 | 15            | 70            |
| Parenteral oxytocics             | 1124   | 97   | 30   | 7  | 15              | 0                        | 0                 | 11            | 71            |
| Parenteral anticonvulsants       | 642  | 55   | 515  | 3  | 7               | 8                        | 3                 | 4             | 83            |
| Manual removal of placenta       | 529  | 46   | 628  | 5  | 18              | 3                        | 2                 | 2             | 81            |
| Removal of retained products     | 332  | 29   | 826  | 7  | 31              | 16                       | 2                 | 4             | 66            |
| Assisted vaginal delivery        | 153  | 13   | 1004   | 13   | 46              | 32                       | 6                 | 9             | 40            |
| Neonatal resuscitation           | 717  | 62   | 440  | 3  | 12              | 19                       | 2                 | 0             | 75            |
| Blood transfusion <sup>1</sup>   | 221  | 78   | 64   | 18   | 16              | 41                       | 10                | 51            | 18            |
| Surgery (caesarean) <sup>1</sup> | 239  | 84   | 46   | 41   | 25              | 38                       | 11                | 53            | 11            |

<sup>1</sup> Only hospitals are included

### ***3.02 Indicator 2: Geographical distribution of EmONC facilities***

This indicator is calculated in the same way as the first indicator but takes into consideration the geographical distribution and accessibility of facilities which helps programme managers and planners to gather information about equity in access to services at district level. To ensure equity and access, all districts should have the minimum acceptable numbers of EmONC facilities (i.e. at least 5 facilities including at least one comprehensive facility per 200,000 population). We see from Tables 3.01A and 3.02A in the Appendix that none of the regions meet this recommended minimum. For EmONC facility district distribution, please refer to Regional reports.

**Fig. 3.04: Distribution of Basic and Comprehensive EmONC facilities in Ghana, by district**

**Fig. 3.05: Distribution of partially functioning EmONC EmONC facilities in Ghana, by district**

### ***3.03 Indicator 3: Proportion of births in facilities***

In order to reduce maternal mortality it is recommended that 80% of births be conducted by skilled birth attendants. Since home delivery by skilled attendants is rare in Ghana, the proportion of births attended in health facilities can serve as a reliable proxy for births attended by skilled attendants. In order to obtain the total number of expected births in the country during the period under review the regional crude birth rates were applied to the regional population figures and the figures were totaled. The births attended in all facilities over the 12 month period preceding the survey were obtained by collecting data using module 4 from all the facilities which were surveyed (Table 3.09).



**Table 3.09: Percentage of expected births attended in all facilities and EmONC facilities, by region (EmONC Indicator 3).**

|  | Population <sup>1</sup> | Number of expected births (CBR*pop) <sup>2</sup> | All facilities                          |                            | EmONC facilities                        |                            |
|--|-------------------------|--|---|----------------------------|---|----------------------------|
|  |                         |  | Number of births attended in facilities | Percent of expected births | Number of births attended in facilities | Percent of expected births |
| National   | 24,232,431              | 751,205  | 434,508                                 | 58%                        | 155,932                                 | 21%                        |
| Region   |                         |  |   |                            |   |                            |
| Western  | 2,325,597               | 72,094   | 40,731                                  | 56%                        | 5,560                                   | 8%                         |
| Central  | 2,107,209               | 80,074   | 45,474                                  | 57%                        | 8,594                                   | 11%                        |
| Greater Accra  | 3,909,764               | 93,834   | 75,274                                  | 80%                        | 37,505                                  | 40%                        |
| Volta  | 2,099,876               | 58,797   | 28,474                                  | 48%                        | 2,164                                   | 4%                         |
| Eastern  | 2,596,013               | 70,092   | 44,026                                  | 63%                        | 23,581                                  | 34%                        |
| Ashanti  | 4,725,046               | 141,751  | 89,507                                  | 63%                        | 40,583                                  | 29%                        |
| Brong Ahafo  | 2,282,128               | 75,310   | 46,274                                  | 61%                        | 16,127                                  | 21%                        |
| Northern   | 2,468,557               | 108,617  | 31,709                                  | 29%                        | 15,579                                  | 14%                        |
| Upper East   | 1,031,478               | 28,881   | 22,130                                  | 77%                        | 3,806                                   | 13%                        |
| Upper West   | 677,763                 | 23,044   | 10,909                                  | 47%                        | 2,433                                   | 11%                        |
| 1. Source of population estimates: Ghana Statistical Service (GSS) 2010 Population and Housing Census Provisional results  |                         |  |   |                            |   |                            |
| 2. Crude birth rate(CBR) = 31 per 1000 population for Nation (Regional CBRs range from 24 (Greater Accra) to 44 (Northern) per 1000 population). Source: Population Reference Bureau Data Sheet, accessed 03/18/2011 |                         |  |   |                            |   |                            |

Comparing the number of expected births with the births attended in all facilities shows that only 58% of births in the country are attended by skilled birth attendants and that 21% of births took place in EmONC facilities. The regional figures for coverage range from 80% for the Greater Accra Region to 29% for the Northern Region. Institutional births in facilities that fulfill the EmONC criteria range from 4% in the Volta Region to 40% in the Greater Accra Region.

### **3.04 Indicator 4: Met need for EmONC**

It is estimated that in each population 15% of pregnancies will result in obstetric complications. Met need for EmONC is assessed by measuring the number of obstetric complications treated in facilities and seeing how this compares with the expected number of pregnancy complications. The number of women expected to develop pregnancy complications for Ghana in 2010 was 112,874. Of these expected complications only 38,437 (34%) were seen at health facilities nationally. By Region, met need ranged from 21% in the Northern Region to 45% in the

Central and Eastern Regions. Met need in EmONC facilities was 17% nationally and ranged from 4% in the Volta Region to 36% in the Eastern Region (Table 3.10).

**Table 3.10: Percentage of women with expected major direct obstetric complications treated in all facilities and EmONC facilities, by region (EmONC Indicator 4 - Met Need)**

|  | Expected births <sup>1</sup> | Expected complications <sup>2</sup> | All Facilities  |          | EmONC Facilities  |          |
|--|------------------------------|-------------------------------------|---|----------|---|----------|
|  |                              |                                     | Number of women with direct complications treated in facility | Met need | Number of women with direct complications treated in facility | Met need |
| National   | 751,205                      | 112,874                             | 38,437  | 34%      | 19,741  | 17%      |
| Region   |                              |                                     |   |          |   |          |
| Western  | 72,094                       | 10,814                              | 4,249   | 39%      | 657   | 6%       |
| Central  | 80,074                       | 12,011                              | 5,433   | 45%      | 2,258   | 19%      |
| Greater Accra  | 93,834                       | 14,075                              | 6,196   | 44%      | 4,307   | 31%      |
| Volta  | 58,797                       | 8,820                               | 3,303   | 37%      | 327   | 4%       |
| Eastern  | 70,092                       | 10,514                              | 4,729   | 45%      | 3,805   | 36%      |
| Ashanti  | 141,751                      | 21,263                              | 5,169   | 24%      | 3,177   | 15%      |
| Brong Ahafo  | 75,310                       | 11,297                              | 3,391   | 30%      | 1,811   | 16%      |
| Northern   | 108,617                      | 16,293                              | 3,422   | 21%      | 2,669   | 16%      |
| Upper East   | 28,881                       | 4,332                               | 1,407   | 32%      | 492   | 11%      |
| Upper West   | 23,044                       | 3,457                               | 1,138   | 33%      | 238   | 7%       |
| 1. Expected births are calculated as (population) * (crude birth rate)           |                              |                                     |   |          |   |          |
| 2. Expected complications are calculated as 15% of the number of expected births |                              |                                     |   |          |   |          |

### **3.05 Indicator 5: Caesarean deliveries as a proportion of all births**

It has been suggested by WHO that caesarean section rates for populations should range between 5 and 15% in order to show adequate obstetric coverage. Using the expected births as a denominator, the caesarean sections performed in all facilities resulted in a national population-based caesarean section rate of 7% and 4% in EmONC facilities. The caesarean section rates in all facilities for the regions ranged from 2% in the Northern Region to 16% in the Greater Accra Region and in EmONC facilities ranged from 1% in the Volta and Upper West Regions to 11% in the Greater Accra Regions. The three regions in the northern part of the country were the only ones where the caesarean section rate in all facilities was less than 5% (Table 3.11).

**Table 3.11: Percentage of all expected births by caesarean section in all facilities and in EmONC facilities, by region (EmONC Indicator 5)**

| Region        | Expected births <sup>1</sup> | All Facilities       |   | EmONC Facilities     |   |
|---------------|------------------------------|----------------------|---|----------------------|---|
|               |                              | Number of caesareans | Percent of expected births by caesarean | Number of caesareans | Percent of expected births by caesarean |
| National      | 751,205                      | 53,436               | 7%                                      | 31,706               | 4%                                      |
| Region        |                              |                      |   |                      |   |
| Western       | 72,094                       | 4,468                | 6%                                      | 1,182                | 2%                                      |
| Central       | 80,074                       | 5,088                | 6%                                      | 2,526                | 3%                                      |
| Greater Accra | 93,834                       | 14,993               | 16%                                     | 10,495               | 11%                                     |
| Volta         | 58,797                       | 3,958                | 7%                                      | 314                  | 1%                                      |
| Eastern       | 70,092                       | 5,510                | 8%                                      | 4,231                | 6%                                      |
| Ashanti       | 141,751                      | 10,632               | 8%                                      | 7,364                | 5%                                      |
| Brong Ahafo   | 75,310                       | 4,925                | 7%                                      | 2,747                | 4%                                      |
| Northern      | 108,617                      | 2,174                | 2%                                      | 2,083                | 2%                                      |
| Upper East    | 28,881                       | 1,015                | 4%                                      | 500                  | 2%                                      |
| Upper West    | 23,044                       | 673                  | 3%                                      | 264                  | 1%                                      |

1. Expected births are calculated as (population) \* (crude birth rate)

### Caesarean performance by public and private facilities

The population-based caesarean rate is the preferred indicator but most facilities that perform caesareans also calculate their own institutional rate. Because hospitals and other facilities that provide major obstetric surgery differ in terms of their patient mix, whether they are a referral centre or whether other hospitals are located nearby, no evidence-based standards exist as a guide about what is the most appropriate institutional caesarean section rate. Nevertheless, Table 3.12 shows that 27% of the deliveries in the private-for-profit sector were resolved by caesarean section compared to 20% and 19% in Government and Religious sectors, respectively.

**Table 3.12: Percentage of institutional deliveries by caesarean section by operating agency**

| Table 3.12: Percentage of institutional deliveries resolved by caesarean section, by operating agency (among facilities that perform cesarean deliveries) |                      |                  |     |
|---|----------------------|------------------|-----|
|   | No of                |                  | %   |
|   | Caesarean deliveries | Total deliveries |     |
| National  | 53,431               | 266,426          | 20% |
| Government  | 36,448               | 184,309          | 20% |

|  |        |        |     |
|--|--------|--------|-----|
| Private  | 4,752  | 17,814 | 27% |
| Religious  | 12,231 | 64,303 | 19% |
| <i>NOTE: No NGO facilities performed cesarean deliveries so they are excluded from this table.</i> |        |        |     |

### 3.06 Indicator 6: Direct Obstetric Case Fatality Rate

A direct maternal death arises from a cause directly related to the pregnancy or its management. The direct obstetric case fatality rate (DOCFR) is the proportion of obstetric complications that ended as a direct maternal death. This measure gives an indication of the ability of facilities to handle obstetric emergencies. The maximum acceptable rate is less than 1%. Nationally, the DOCFR was 1% in all facilities and 2% in EmONC facilities. By region, the range was 1-2% in all facilities and 1-4% in EmONC facilities (Table 3.13).

**Table 3.13: Direct obstetric case fatality rate (DOCFR) in all facilities and EmONC facilities, by region (EmONC Indicator 6)**

|  | All Facilities   |  |                    | EmONC Facilities                                       |  |                    |
|--|--|--|--------------------|--|--|--------------------|
|  | Number of women with direct complications <sup>1</sup> | Number of maternal deaths by direct cause <sup>1</sup> | DOCFR <sup>2</sup> | Number of women with direct complications <sup>1</sup> | Number of maternal deaths by direct cause <sup>1</sup> | DOCFR <sup>2</sup> |
| National   | 38,437   | 486  | 1%                 | 19,741   | 315  | 2%                 |
| Region   |  |  |                    |  |  |                    |
| Western  | 4,249  | 55   | 1%                 | 657  | 23   | 4%                 |
| Central  | 5,433  | 37   | 1%                 | 2,258  | 27   | 1%                 |
| Greater Accra  | 6,196  | 93   | 2%                 | 4,307  | 82   | 2%                 |
| Volta  | 3,303  | 55   | 2%                 | 327  | 7  | 2%                 |
| Eastern  | 4,729  | 49   | 1%                 | 3,805  | 41   | 1%                 |
| Ashanti  | 5,169  | 69   | 1%                 | 3,177  | 59   | 2%                 |
| Brong Ahafo  | 3,391  | 61   | 2%                 | 1,811  | 35   | 2%                 |
| Northern   | 3,422  | 32   | 1%                 | 2,669  | 26   | 1%                 |
| Upper East   | 1,407  | 17   | 1%                 | 492  | 9  | 2%                 |
| Upper West   | 1,138  | 18   | 2%                 | 238  | 6  | 3%                 |
| <p>1. Direct complications and direct causes of maternal death include: APH, PPH, obstructed/prolonged labour, ectopic pregnancy, severe abortion complications, retained placenta, ruptured uterus, postpartum sepsis, and severe pre-eclampsia/eclampsia. Excludes "other" direct complications or causes of death.</p> <p>2. DOCFR (direct obstetric case fatality rate) = (number of maternal deaths by direct causes) / (number of women with direct complications)</p> |  |  |                    |  |  |                    |

There were a total of 840 identified maternal deaths (of known cause) with 71% due to direct causes, 29% due to indirect causes. The commonest cause of direct maternal death from the survey was severe pre-eclampsia/ eclampsia which accounted for 23% of all direct maternal deaths or 16% of all maternal deaths. The other leading causes of direct maternal deaths were postpartum haemorrhage and other direct obstetric complications, each contributing 13% of all maternal deaths. Abortion complications contributed 8% of all maternal deaths. However, when antepartum haemorrhage and postpartum haemorrhage are combined, haemorrhage becomes the leading cause of direct maternal deaths (Table 3.14).

**Table 3.14: Numeric and percent distribution of direct and indirect complications and maternal deaths**

|  | Women with complications | Women with complications | Maternal deaths | Maternal deaths |
|--|--------------------------|--------------------------|-----------------|-----------------|
|  | n                        | %                        | n               | %               |
| Total DIRECT complications/causes  | 52,645                   | 54%                      | 593             | 71%             |
| Antepartum haemorrhage   | 3,953                    | 4%                       | 33              | 4%              |
| Postpartum haemorrhage   | 3,849                    | 4%                       | 111             | 13%             |
| Retained placenta  | 2,339                    | 2%                       | 10              | 1%              |
| Prolonged/obstructed labour  | 15,618                   | 16%                      | 14              | 2%              |
| Ruptured uterus  | 441                      | 0%                       | 36              | 4%              |
| Postpartum sepsis  | 493                      | 1%                       | 60              | 7%              |
| Severe pre-eclampsia/<br>eclampsia   | 3,503                    | 4%                       | 137             | 16%             |
| Abortion complications<br>(haemorrhage and/or sepsis <sup>1</sup> )  | 6,062                    | 6%                       | 70              | 8%              |
| Ectopic pregnancy  | 2,179                    | 2%                       | 15              | 2%              |
| Other direct obstetric complications <sup>2</sup>  | 14,208                   | 14%                      | 107             | 13%             |
|  |                          |                          |                 |                 |
| Total INDIRECT complications/causes  | 45,501                   | 46%                      | 247             | 29%             |
| Malaria  | 33,315                   | 34%                      | 61              | 7%              |
| HIV/AIDS - related   | 3,852                    | 4%                       | 29              | 3%              |
| Severe anaemia   | 4,824                    | 5%                       | 55              | 7%              |
| Sickle cell disease crisis   | 1,064                    | 1%                       | 25              | 3%              |
| Hepatitis  | 310                      | 0%                       | 10              | 1%              |
| Other indirect complications <sup>3</sup>  | 2136                     | 2%                       | 67              | 8%              |
|  |                          |                          |                 |                 |
| TOTAL  | 98,146                   | 100%                     | 840             | 100%            |
| <i>1. Only the severe abortion complications are included here (PAC cases and safe abortions or TOP are not included).</i> |                          |                          |                 |                 |
| <i>2. Other direct obstetric complications include: premature rupture of membranes, preterm labour, post-</i>              |                          |                          |                 |                 |

*term labour, previous caesarean, cord prolapse, and multiple gestations.*

*3. Other indirect obstetric complications include: typhoid, cardiac disease, diabetes (including gestational diabetes), tuberculosis (TB), etc.*

Postpartum sepsis recorded the highest cause specific CFR of 12% followed by ruptured uterus at 8%, severe pre-eclampsia/eclampsia at 4% and postpartum haemorrhage at 3% (Table 3.15).

**Table 3.15: Direct cause-specific obstetric case fatality rates in all facilities, by cause**

| Direct causes                                     | Number of women with direct complications <sup>1</sup> | Number of maternal deaths by direct cause | Cause-specific case fatality rate |
|---|--|---|-----------------------------------|
| Postpartum sepsis                                 | 493  | 60  | 12%                               |
| Ruptured uterus                                   | 441  | 36  | 8%                                |
| Severe pre-eclampsia/eclampsia                    | 3,503  | 137                                       | 4%                                |
| Postpartum haemorrhage                            | 3,849  | 111                                       | 3%                                |
| Severe abortion complications                     | 6,062  | 70  | 1%                                |
| Antepartum haemorrhage                            | 3,953  | 33  | 1%                                |
| Ectopic pregnancy                                 | 2,179  | 15  | 1%                                |
| Prolonged/obstructed labour                       | 15,618   | 14  | 0%                                |
| Retained placenta                                 | 2,339  | 10  | 0%                                |
| Other direct obstetric complications <sup>2</sup> | 14,208   | 107                                       | 1%                                |

<sup>1</sup>*Women with less severe abortion complications are not included. If a woman died of abortion, by definition she died of severe complications.*

<sup>2</sup>*Other direct obstetric complications causing fatalities could include embolism, anaesthesia, suicide, etc.*

### **3.07 Indicator 7: Intrapartum and very early neonatal mortality rate**

The objective of this indicator is to measure the quality of intrapartum and newborn care. Tables 3.16 and 3.17 show the distribution of perinatal deaths in the country. The national intrapartum and very early neonatal mortality rate for all facilities was 16 per 1000 deliveries while that for EmONC facilities was 26 per 1000 deliveries. The lowest mortality rate in all facilities (8 per 1000 deliveries) was recorded in the Upper East Region while the highest (33 per 1000 deliveries) was for the Upper West Region. In EmONC facilities, the highest rate was recorded in the Northern Region (47 per 1000) and lowest in the Volta Region (12 per 1000).

**Table 3.16: Intrapartum and very early neonatal death rate in all facilities by region (EmONC Indicator 7)**

| All Facilities  |                                    |                                 |  |  |   |   |
|---|------------------------------------|---------------------------------|--|--|---|---|
|   | Number of institutional deliveries | Number of macerated stillbirths | Number of unspecified stillbirths (unknown weight or timing) | Number of intrapartum deaths (fresh stillbirths) | Number of very early neonatal deaths <sup>1</sup> | Intrapartum + very early neonatal death rate (per 1000 deliveries) <sup>2</sup> |
| National  | 434,508                            | 3,989                           | 1,223  | 4,685  | 2,201   | 16  |
| Region  |                                    |                                 |  |  |   |   |
| Western   | 40,731                             | 533                             | 196  | 284  | 145   | 11  |
| Central   | 45,474                             | 446                             | 99   | 371  | 98  | 10  |
| Greater Accra   | 75,274                             | 615                             | 67   | 788  | 389   | 16  |
| Volta   | 28,474                             | 366                             | 381  | 336  | 101   | 16  |
| Eastern   | 44,026                             | 362                             | 90   | 448  | 194   | 15  |
| Ashanti   | 89,507                             | 688                             | 126  | 795  | 827   | 18  |
| Brong Ahafo   | 46,274                             | 495                             | 24   | 681  | 171   | 18  |
| Northern  | 31,709                             | 203                             | 80   | 551  | 143   | 22  |
| Upper East  | 22,130                             | 139                             | 112  | 151  | 30  | 8   |
| Upper West  | 10,909                             | 142                             | 48   | 280  | 103   | 33  |
| NOTE: Unspecified stillbirths are not included in the calculation of intrapartum and very early neonatal death rate. Since some of these unspecified stillbirths are likely fresh stillbirths, the calculated intrapartum and very early neonatal death rate is a likely an underestimate of the true rate. |                                    |                                 |  |  |   |   |
| <sup>1</sup> Very early neonatal death was defined as a death occurring within 24 hours after delivery  |                                    |                                 |  |  |   |   |
| <sup>2</sup> Intrapartum and very early neonatal death rate = (intrapartum + v. early neonatal deaths)/(number of institutional deliveries)   |                                    |                                 |  |  |   |   |

**Table 3.17: Intrapartum and very early neonatal death rate in EmONC facilities, by region (EmONC Indicator 7).**

| EmONC Facilities |                                    |                                 |  |  |   |   |
|------------------|------------------------------------|---------------------------------|--|--|---|---|
|                  | Number of institutional deliveries | Number of macerated stillbirths | Number of unspecified stillbirths (unknown weight or timing) | Number of intrapartum deaths (fresh stillbirths) | Number of very early neonatal deaths <sup>1</sup> | Intrapartum + very early neonatal death rate (per 1000 deliveries) <sup>2</sup> |
| National         | 155,932                            | 2,091                           | 370  | 2,506  | 1,472   | 26  |
| Region           |                                    |                                 |  |  |   |   |

|   |        |     |    |     |     |    |
|---|--------|-----|----|-----|-----|----|
| Western   | 5,560  | 131 | 29 | 58  | 94  | 27 |
| Central   | 8,594  | 126 | 37 | 78  | 79  | 18 |
| Greater Accra   | 37,505 | 482 | 15 | 561 | 332 | 24 |
| Volta   | 2,164  | 29  | 30 | 22  | 4   | 12 |
| Eastern   | 23,581 | 276 | 69 | 371 | 124 | 21 |
| Ashanti   | 40,583 | 517 | 65 | 528 | 534 | 27 |
| Brong Ahafo   | 16,127 | 286 | 13 | 327 | 133 | 30 |
| Northern  | 15,579 | 158 | 58 | 461 | 133 | 47 |
| Upper East  | 3,806  | 48  | 54 | 66  | 18  | 22 |
| Upper West  | 2,433  | 38  | 0  | 34  | 21  | 23 |
| NOTE: Unspecified stillbirths are not included in the calculation of intrapartum and very early neonatal death rate. Since some of these unspecified stillbirths are likely fresh stillbirths, the calculated intrapartum and very early neonatal death rate is a likely an underestimate of the true rate. |        |     |    |     |     |    |
| <sup>1</sup> Very early neonatal death was defined as a death occurring within 24 hours after delivery  |        |     |    |     |     |    |
| <sup>2</sup> Intrapartum and very early neonatal death rate = (intrapartum + v. early neonatal deaths)/(number of institutional deliveries)   |        |     |    |     |     |    |

### 3.08 Indicator 8: Proportion of maternal deaths due to indirect causes

Indirect causes of death result from previous existing disease or disease that developed during pregnancy and which was not due to direct obstetric causes but was aggravated by the physiological effects of pregnancy. There were a total of 247 indirect maternal deaths out of 908 maternal deaths giving the proportion of maternal deaths due to indirect causes to be 27% (Table 3.18). 'Other indirect complications', malaria and severe anaemia were the leading causes of indirect deaths accounting for 8%, 7% and 7% of all maternal deaths respectively (Table 3.14).

**Table 3.18: Percentage of maternal deaths due to indirect causes in all facilities and EmONC facilities, by region (EmONC Indicator 8)**

|          | All Facilities   |                                  |  | EmONC Facilities   |                                  |  |
|----------|--|----------------------------------|--|--|----------------------------------|--|
|          | Number of maternal deaths due to indirect cause <sup>1</sup> | All maternal deaths <sup>2</sup> | Percent of all maternal deaths due to indirect cause | Number of maternal deaths due to indirect cause <sup>1</sup> | All maternal deaths <sup>2</sup> | Percent of all maternal deaths due to indirect cause |
| National | 247  | 908                              | 27%  | 136  | 585                              | 23%  |
| Region   |  |                                  |  |  |                                  |  |
| Western  | 30   | 95                               | 32%  | 0  | 29                               | 0%   |
| Central  | 15   | 58                               | 26%  | 8  | 38                               | 21%  |



|                  |    |     |     |  |    |     |     |
|------------------|----|-----|-----|--|----|-----|-----|
| Greater<br>Accra | 31 | 170 | 18% |  | 29 | 154 | 19% |
| Volta            | 19 | 90  | 21% |  | 2  | 11  | 18% |
| Eastern          | 23 | 89  | 26% |  | 19 | 73  | 26% |
| Ashanti          | 38 | 165 | 23% |  | 23 | 137 | 17% |
| Brong<br>Ahafo   | 22 | 96  | 23% |  | 17 | 56  | 30% |
| Northern         | 29 | 65  | 45% |  | 26 | 55  | 47% |
| Upper East       | 23 | 43  | 53% |  | 4  | 16  | 25% |
| Upper West       | 17 | 37  | 46% |  | 8  | 16  | 50% |

<sup>1</sup>*Includes maternal deaths due to malaria, anaemia, HIV-AIDS related and other indirect causes.*

<sup>2</sup>*Includes all recorded maternal deaths in facilities regardless of cause (also includes maternal deaths due to unknown causes).*

# CHAPTER FOUR Performance of other MNH Services and Procedures

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## *4.01 Overview of maternal and newborn services in all facilities*

### **FANC, PNC, Diagnosis and treatment of STIs, PMTCT, FP**

Nationally, at least 80% of all facilities reported that they provided FANC, PNC, Diagnosis and treatment of STIs and FP. A total of 78% of facilities reported that they provide PMTCT services. Marked disparities exist in the provision of PMTCT services by operating agency. Whereas at least 98% of government and mission hospitals provided PMTCT services, only 53% of privately owned hospitals provided the services. Nearly all (99%) of government owned hospitals also provided family planning services as compared to 63% of privately owned and 69% of mission hospitals at the time of the survey (Tables 4.01 & 4.02).

### **Provision of Obstetric Surgery and General Anesthesia**

Nationally only 20% of all facilities provide obstetric surgery and general anesthesia services. This observation is to be expected since lower level facilities such as health centers, maternity homes and clinics usually do not provide such services. However among hospitals, over 80% provide these services. Not surprisingly, hospitals are concentrated in urban areas. While about 33% of urban facilities provide these services, only 1% of rural facilities provide such services (Table 4.02).

### **Cervical Cancer Screening**

Nationally very few facilities below the level of regional hospitals provide cervical cancer screening by the pap smear method. Apart from the teaching hospitals and 8 out of the 9 regional hospitals, less than a quarter of district hospitals provide the service regardless of operating agency. This service is almost not provided outside the hospitals.

### **Treatment and Repair of Obstetric Fistula**

Nationally only 6% of facilities providing delivery services treat and repair obstetric fistula. It is to be expected that only hospitals will provide this specialized service. It is nonetheless surprising that two of three teaching hospitals and eight out of nine of the regional hospitals treat and repair obstetric fistula. Only about 1/5<sup>th</sup> of government owned district hospitals reported that they provide the service. About a quarter (24%) of mission hospitals and 28% of private hospitals reported that they treat and repair obstetric fistula.

**Table 4.01: Percentage of facilities providing selected services by region**

|               | Total number of facilities | Does the facility provide: |                |                                   |                     |  |                                |                                  |                 |       |
|---------------|----------------------------|----------------------------|----------------|-----------------------------------|---------------------|--|--------------------------------|----------------------------------|-----------------|-------|
|               |                            | Focused antenatal care     | Postnatal care | Obstetric surgery, e.g. caesarean | General anaesthesia | Treatment or repair of obstetric fistula | Cervical screening (pap smear) | Diagnosis and treatment for STIs | Family planning | PMTCT |
|               |                            | %                          | %              | %                                 | %                   | %  | %                              | %                                | %               | %     |
| National      | 1,268                      | 80                         | 95             | 20                                | 19                  | 6  | 6                              | 80                               | 91              | 78    |
| Region        |                            |                            |                |                                   |                     |  |                                |                                  |                 |       |
| Western       | 120                        | 83                         | 97             | 20                                | 18                  | 6  | 3                              | 67                               | 92              | 64    |
| Central       | 106                        | 72                         | 98             | 14                                | 14                  | 2  | 2                              | 77                               | 95              | 88    |
| Greater Accra | 148                        | 62                         | 86             | 41                                | 41                  | 18                                       | 17                             | 84                               | 79              | 61    |
| Volta         | 82                         | 87                         | 90             | 29                                | 26                  | 9  | 6                              | 76                               | 90              | 78    |
| Eastern       | 124                        | 98                         | 99             | 17                                | 17                  | 2  | 4                              | 90                               | 96              | 95    |
| Ashanti       | 216                        | 75                         | 97             | 28                                | 27                  | 9  | 7                              | 82                               | 84              | 69    |
| Brong Ahafo   | 121                        | 82                         | 98             | 18                                | 17                  | 5  | 3                              | 93                               | 92              | 84    |
| Northern      | 108                        | 93                         | 97             | 11                                | 10                  | 3  | 4                              | 92                               | 96              | 94    |
| Upper East    | 147                        | 66                         | 88             | 5                                 | 5                   | 2  | 4                              | 60                               | 94              | 68    |
| Upper West    | 96                         | 96                         | 100            | 7                                 | 5                   | 1  | 3                              | 82                               | 97              | 97    |

**Table 4.02: Percentage of facilities providing selected services by facility type, operating agency and designation**

|                          | Total number of facilities | Does the facility provide: |                |                                   |                     |  |                                |                                  |                 |       |
|--------------------------|----------------------------|----------------------------|----------------|-----------------------------------|---------------------|--|--------------------------------|----------------------------------|-----------------|-------|
|                          |                            | Focused antenatal care     | Postnatal care | Obstetric surgery, e.g. caesarean | General anaesthesia | Treatment or repair of obstetric fistula | Cervical screening (pap smear) | Diagnosis and treatment for STIs | Family planning | PMTCT |
|                          |                            | %                          | %              | %                                 | %                   | %  | %                              | %                                | %               | %     |
| National                 | 1,268                      | 80                         | 95             | 20                                | 19                  | 6  | 6                              | 80                               | 91              | 78    |
| Teaching Hospital        |                            |                            |                |                                   |                     |  |                                |                                  |                 |       |
| Government               | 3                          | 67                         | 100            | 100                               | 100                 | 67                                       | 100                            | 100                              | 100             | 100   |
| Regional Hospital        |                            |                            |                |                                   |                     |  |                                |                                  |                 |       |
| Government               | 9                          | 100                        | 89             | 100                               | 100                 | 89                                       | 89                             | 100                              | 100             | 100   |
| District/ Other Hospital |                            |                            |                |                                   |                     |  |                                |                                  |                 |       |
| Government               | 117                        | 79                         | 99             | 85                                | 82                  | 21                                       | 18                             | 98                               | 99              | 98    |
| Private (for profit)     | 105                        | 67                         | 89             | 85                                | 83                  | 28                                       | 24                             | 93                               | 63              | 53    |
| Religious Mission        | 51                         | 72                         | 96             | 96                                | 84                  | 24                                       | 18                             | 98                               | 69              | 98    |
| Health Centre            |                            |                            |                |                                   |                     |  |                                |                                  |                 |       |
| Government               | 469                        | 89                         | 99             | 0                                 | 0                   | 0  | 0                              | 88                               | 99              | 92    |
| Private (for profit)     | 2                          | 0                          | 100            | 0                                 | 50                  | 0  | 0                              | 50                               | 100             | 0     |
| Religious Mission        | 47                         | 85                         | 98             | 0                                 | 0                   | 2  | 0                              | 85                               | 94              | 89    |
| Health Clinic            |                            |                            |                |                                   |                     |  |                                |                                  |                 |       |
| Government               | 79                         | 82                         | 96             | 0                                 | 0                   | 0  | 1                              | 73                               | 96              | 77    |
| Private (for profit)     | 32                         | 41                         | 66             | 3                                 | 3                   | 0  | 3                              | 88                               | 78              | 40    |
| NGO                      | 2                          | 100                        | 100            | 0                                 | 0                   | 0  | 0                              | 100                              | 100             | 100   |
| Religious Mission        | 48                         | 79                         | 94             | 0                                 | 0                   | 0  | 0                              | 72                               | 77              | 66    |
| Maternity Home           |                            |                            |                |                                   |                     |  |                                |                                  |                 |       |
| Government               | 3                          | 67                         | 100            | 0                                 | 0                   | 0  | 0                              | 67                               | 100             | 100   |

|                      |     |     |     |    |    |    |   |     |     |     |
|----------------------|-----|-----|-----|----|----|----|---|-----|-----|-----|
| Private (for profit) | 161 | 71  | 88  | 2  | 1  | 0  | 1 | 63  | 83  | 46  |
| Religious Mission    | 1   | 100 | 100 | 0  | 0  | 0  | 0 | 100 | 0   | 100 |
| CHPS Compound        |     |     |     |    |    |    |   |     |     |     |
| Government           | 136 | 77  | 93  | 0  | 0  | 0  | 1 | 44  | 97  | 68  |
| NGO                  | 1   | 100 | 0   | 0  | 0  | 0  | 0 | 0   | 100 | 0   |
| Religious Mission    | 2   | 100 | 100 | 0  | 0  | 0  | 0 | 50  | 100 | 0   |
|                      |     |     |     |    |    |    |   |     |     |     |
| Designation          |     |     |     |    |    |    |   |     |     |     |
| Urban                | 716 | 78  | 94  | 34 | 33 | 10 | 9 | 85  | 87  | 78  |
| Rural                | 552 | 82  | 96  | 1  | 1  | 1  | 1 | 73  | 95  | 78  |

#### *4.02 Length of Stay of women following normal delivery*

The median length of stay in hours after normal delivery in almost all facilities assessed was reportedly 24 hours irrespective of the facility type (data not shown).

#### *4.03 Provision of other essential services*

Table 4.03 shows a number of procedures and services that were asked about in facilities that conduct deliveries. Staff was asked either if the procedures were done routinely or in the last three months. Table 4.04 on the other hand, shows the percentage of health facilities that reported having not provided the different services/ procedures in the last three months and the reasons for not having performed the procedure.

In more than two-fifths (43%) of facilities that conduct deliveries, Rapid HIV testing was not done in the maternity/labour ward in last three months. Rapid HIV testing in maternity wards offers the opportunity for pregnant women who do not know their HIV status to be tested. This service is useful in labour in that women found to be HIV infected in labour can benefit especially from postpartum ARV prophylaxis to protect their babies after delivery, when breastfeeding is almost universally the infant feeding choice of mothers.

As shown in Table 4.04, ARVs to mothers during delivery and to the newborn in maternity wards were performed by only one in five facilities in the last three months. The commonest reason given was lack of supplies (49%). Other reasons given for not dispensing ARVs to mothers and newborn were lack of training (33%) and no indication to give ARVs (28%). A critical look at the level of health facility in which ARVs were not dispensed to mothers and their newborn revealed that health centres, clinics and CHPS compounds were mostly affected. Supply of ARVs at lower level facilities that conduct deliveries appears to be an issue. One possible reason is that ARVs are dispensed to pregnant women only in facilities designated as ARV sites, where laboratory tests can be carried out to determine eligibility for antiretroviral therapy for HIV infected women.

About four-fifths (79%) of facilities that conducted deliveries did not provide extra care to premature or low birth weight babies. The commonest reason stated was that there was no indication providing such care (66%). This commonly stated reason could probably be related to the fact that lower level facilities tend to refer mothers having premature labour to higher level facilities since they are better equipped to care for premature and low birth weight babies.

**Table 4.03: Percentage of facilities that performed the procedure in the last 3 months by facility type (among facilities that do deliveries)**

| Other essential services                   | Teaching Hospital | Regional Hospital | District /Other Hospital | Health Centre | Health Clinic | Maternity Home | CHPS Compound |
|--|-------------------|-------------------|--------------------------|---------------|---------------|----------------|---------------|
|  | (n=3)             | (n=9)             | (n=269)                  | (n=509)       | (n=136)       | (n=164)        | (n=69)        |
|  | %                 | %                 | %                        | %             | %             | %              | %             |
| Active management of third stage of labour | 100               | 100               | 98                       | 98            | 93            | 95             | 94            |
| Extra care to premature or LBW baby        | 100               | 89                | 38                       | 19            | 13            | 7              | 12            |
| Partograph                                 | 100               | 100               | 84                       | 71            | 71            | 67             | 41            |
| Episiotomy                                 | 100               | 100               | 94                       | 71            | 64            | 64             | 43            |
| Breech Delivery                            | 100               | 100               | 70                       | 48            | 37            | 40             | 19            |
| Craniotomy                                 | 0                 | 0                 | 1                        | 0             | 0             | 0              | 0             |
| Rapid HIV testing in maternity ward        | 67                | 100               | 57                       | 67            | 50            | 37             | 43            |
| ARV to mothers during delivery             | 67                | 89                | 52                       | 10            | 5             | 5              | 4             |
| ARV to newborns in maternity ward          | 67                | 89                | 52                       | 9             | 4             | 4              | 3             |
| Temporary FP Methods                       | 100               | 100               | 71                       | 94            | 88            | 82             | 100           |
| Surgical / permanent FP                    | 100               | 89                | 62                       | 2             | 1             | 1              | 1             |
| Fistula been repaired (at least 1 )        | 67                | 43                | 12                       | 0             | 0             | 0              | 0             |

**Table 4.04: Percentage of facilities that responded that the service was not provided in the last 3 months and reasons for not providing**

| Other essential services                            | Percentage of facilities that performed the procedure in the last 3 months (n=1159) |    | Percentage of facilities that did not provide the service in the last 3 months | Reasons for not providing service |                 |                          |                   |               |               |
|---|---|----|--|-----------------------------------|-----------------|--------------------------|-------------------|---------------|---------------|
|   |   |    |  | availability of human resources   | training issues | supplies/equipment/drugs | management issues | policy issues | no indication |
|   | n   | %  | %  | %                                 | %               | %                        | %                 | %             | %             |
| Active management of the third stage                | 1117  | 96 | 4  | 18                                | 92              | 5                        | 3                 | 5             | 0             |
| Episiotomy  | 849   | 73 | 27   | 4                                 | 15              | 4                        | 1                 | 3             | 88            |
| Partograph  | 830   | 72 | 28   | 27                                | 39              | 21                       | 5                 | 0             | 15            |
| Breech Delivery                                     | 574   | 50 | 50   | 3                                 | 7               | 1                        | 4                 | 5             | 86            |
| Special or intensive care for a preterm of LBW baby | 247   | 21 | 79   | 47                                | 12              | 22                       | 2                 | 7             | 32            |
| Rapid HIV testing in maternity ward                 | 663   | 57 | 43   | 11                                | 41              | 26                       | 6                 | 5             | 36            |
| ARV to mothers during delivery                      | 222   | 19 | 81   | 6                                 | 32              | 49                       | 10                | 12            | 28            |
| ARV to newborns in maternity ward                   | 211   | 18 | 82   | 6                                 | 33              | 49                       | 11                | 11            | 29            |
| Temporary FP Methods                                | 999   | 86 | 14   | 14                                | 17              | 21                       | 22                | 26            | 24            |
| Surgical / permanent FP                             | 191   | 16 | 84   | 39                                | 46              | 27                       | 8                 | 33            | 13            |



Temporary or reversible family planning methods were not offered in 14% of facilities while permanent or irreversible family methods were not offered in 84% of facilities in the past three months. Permanent family planning methods will normally be available only in hospitals and therefore its relative high unavailability is to be expected. It is noteworthy however, that one of the nine regional hospitals and over a third of district hospitals had not offered this service in the last three months (data not shown).

Staff was asked if there was any health worker trained to repair fistula and if the response was yes they were asked whether at least one case of fistula had been repaired in the last three months and if not whether in the last 12 months. Out of 1154 facilities assessed, 76 said that they have at least one health worker trained to repair fistula. Of these 76 facilities, 17 reported that they had repaired at least one fistula in the past 12 months. All of the repairs were done at the level of Teaching, Regional and District hospitals, with most of the facilities being owned by Government (data not shown).

Surgical repair, especially for complex forms of the fistula is not done on a routine basis. The procedure involves a number of pre-operative activities such as community sensitization and mobilization of affected individuals, some of whom may have been ostracized from their communities. There is also the need to mobilize experts to perform the surgery at a designated site, which may be a teaching, regional or district hospital. It is therefore possible that even though a facility may respond that no one has been trained in the repair of fistula, that facility could be a centre for the repair of fistula because of the mobilization of outside human resources.

# CHAPTER FIVE Facility infrastructure and referral for maternal and newborn emergencies

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Most aspects of infrastructure are important for all patient services in surgical, medical and maternity wards and are crucial prerequisites for effective maternal and newborn care. The first part of this chapter looks at facility infrastructure while the second part looks at referral for maternal and newborn emergencies.

## *5.01 Bed Complement of health facilities*

Table 5.01 shows the ratio of delivery beds and tables per 1000 deliveries. The bed complement in all 1,268 health facilities is 28,687 for all beds out of which 8,858 are maternity beds and 2,575 delivery beds. Government Health facilities in both urban and rural areas have the highest obstetric bed complement, followed by the religious mission facilities. This is a reflection of the fact that there are more facilities belonging to Government than any other sector. However, for Maternity Homes, obstetric bed complement is higher for the Private-for-profit than government operated Health Facilities.

### **RATIO OF BEDS TO 1000 DELIVERIES**

International standards stipulate that there should be 30-32 beds for every 1000 deliveries for a first level referral such as district hospital<sup>14</sup>. We find that nationally, the ratio of 26.3 is less than the recommended ratio. However, the Volta Region and the Upper West Region exceeded this ratio. When data are analyzed by sector, we find that the NGO and the private-for-profit facilities have higher ratios than Government and Mission facilities. For Maternity homes, this ratio reaches 70 beds per 1000 deliveries in Mission facilities.

These ratios were calculated based on number of institutional deliveries and not expected births and because of this some facilities may falsely appear to have the recommended number of beds when in fact this could be attributed to low number of deliveries. In this case, using expected births would be more appropriate.

The survey found that there were 2,390 functional beds idle in store rooms of health facilities. These are beds that can be distributed to facilities in desperate need of beds.

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<sup>14</sup> WHO, 1991. Essential elements of obstetric care at first referral level

**Table 5.01: Ratio of maternity beds and delivery tables to 1,000 deliveries by region, operating agency, facility type/operating agency and designation**

| Type of facility | Total number of facilities | Number of institutional deliveries (12 months in 2009-2010) | Number of |                |                 |                                   | Ratio of maternity beds to 1000 deliveries | Ratio of delivery tables to 1000 deliveries | Ratio of maternity beds plus delivery tables to 1000 deliveries |
|------------------|----------------------------|---|-----------|----------------|-----------------|-----------------------------------|--|---|---|
|                  |                            |   | All beds  | Maternity beds | Delivery tables | Functional beds in the store room |  |   |   |
| National         | 1,268                      | 435,331   | 28,687    | 8,858          | 2,575           | 2,390                             | 20.3                                       | 5.9   | 26.3  |
|                  |                            |   |           |                |                 |                                   |  |   |   |
| Region           |                            |   |           |                |                 |                                   |  |   |   |
| Western          | 120                        | 40,583  | 2,832     | 786            | 329             | 328                               | 19.4                                       | 8.1   | 27.5  |
| Central          | 106                        | 45,986  | 2,520     | 844            | 170             | 117                               | 18.4                                       | 3.7   | 22.1  |
| Greater Accra    | 148                        | 75,696  | 4,112     | 1,573          | 279             | 229                               | 20.8                                       | 3.7   | 24.5  |
| Volta            | 82                         | 27,703  | 2,823     | 806            | 166             | 384                               | 29.1                                       | 6.0   | 35.1  |
| Eastern          | 124                        | 44,105  | 3,184     | 1,025          | 212             | 174                               | 23.2                                       | 4.8   | 28.0  |
| Ashanti          | 216                        | 89,446  | 5,821     | 1,654          | 615             | 618                               | 18.5                                       | 6.9   | 25.4  |
| Brong Ahafo      | 121                        | 46,348  | 2,808     | 952            | 226             | 282                               | 20.5                                       | 4.9   | 25.4  |

|                         |     |         |        |       |       |     |      |      |      |
|-------------------------|-----|---------|--------|-------|-------|-----|------|------|------|
| Northern                | 108 | 31,595  | 2,081  | 538   | 194   | 120 | 17.0 | 6.1  | 23.2 |
| Upper East              | 147 | 22,125  | 1,505  | 381   | 184   | 87  | 17.2 | 8.3  | 25.5 |
| Upper West              | 96  | 11,744  | 1,001  | 299   | 200   | 51  | 25.5 | 17.0 | 42.5 |
|                         |     |         |        |       |       |     |      |      |      |
| Operating agency        |     |         |        |       |       |     |      |      |      |
| Government              | 816 | 302,043 | 16,788 | 5,564 | 1,602 | 766 | 18.4 | 5.3  | 23.7 |
| Private (for profit)    | 300 | 50,665  | 4,845  | 1,706 | 625   | 861 | 33.7 | 12.3 | 46.0 |
| NGO                     | 3   | 316     | 25     | 11    | 6     | 0   | 34.8 | 19.0 | 53.8 |
| Religious Mission       | 149 | 82,307  | 7,029  | 1,577 | 342   | 763 | 19.2 | 4.2  | 23.3 |
|                         |     |         |        |       |       |     |      |      |      |
| Teaching Hospital       | 3   | 29,064  | 1,497  | 597   | 34    | 20  | 20.5 | 1.2  | 21.7 |
| Regional Hospital       | 9   | 30,449  | 2,056  | 562   | 53    | 3   | 18.5 | 1.7  | 20.2 |
| District/Other Hospital |     |         |        |       |       |     |      |      |      |
| Government              | 117 | 138,420 | 8,929  | 2,251 | 368   | 384 | 16.3 | 2.7  | 18.9 |
| Private (for profit)    | 105 | 21,566  | 3,142  | 817   | 241   | 532 | 37.9 | 11.2 | 49.1 |
| Religious Mission       | 51  | 64,403  | 5,775  | 1,088 | 161   | 627 | 16.9 | 2.5  | 19.4 |
| Health Centre           |     |         |        |       |       |     |      |      |      |

|                      |     |        |       |       |     |     |      |      |      |
|----------------------|-----|--------|-------|-------|-----|-----|------|------|------|
| Government           | 469 | 89,276 | 3,721 | 1,813 | 909 | 309 | 20.3 | 10.2 | 30.5 |
| Private (for profit) | 2   | 438    | 80    | 17    | 4   | 0   | 38.8 | 9.1  | 47.9 |
| Religious Mission    | 47  | 10,237 | 539   | 214   | 91  | 15  | 20.9 | 8.9  | 29.8 |
| Health Clinic        |     |        |       |       |     |     |      |      |      |
| Government           | 79  | 8,142  | 355   | 189   | 120 | 25  | 23.2 | 14.7 | 38.0 |
| Private (for profit) | 32  | 3,751  | 466   | 119   | 37  | 103 | 31.7 | 9.9  | 41.6 |
| NGO                  | 2   | 224    | 22    | 10    | 4   | 0   | 44.6 | 17.9 | 62.5 |
| Religious Mission    | 48  | 7,521  | 694   | 266   | 89  | 117 | 35.4 | 11.8 | 47.2 |
| Maternity Home       |     |        |       |       |     |     |      |      |      |
| Government           | 3   | 2,278  | 25    | 24    | 9   | 0   | 10.5 | 4.0  | 14.5 |
| Private (for profit) | 161 | 24,910 | 1,157 | 753   | 343 | 226 | 30.2 | 13.8 | 44.0 |
| Religious Mission    | 1   | 128    | 16    | 8     | 1   | 4   | 62.5 | 7.8  | 70.3 |
| CHPS Compound        |     |        |       |       |     |     |      |      |      |
| Government           | 136 | 4,414  | 205   | 128   | 109 | 25  | 29.0 | 24.7 | 53.7 |
| NGO                  | 1   | 92     | 3     | 1     | 2   | 0   | 10.9 | 21.7 | 32.6 |
| Religious Mission    | 2   | 18     | 5     | 1     | 0   | 0   | 55.6 | 0.0  | 55.6 |
|                      |     |        |       |       |     |     |      |      |      |

|             |     |         |        |       |       |       |      |      |      |
|-------------|-----|---------|--------|-------|-------|-------|------|------|------|
| Designation |     |         |        |       |       |       |      |      |      |
| Urban       | 716 | 373,947 | 25,081 | 7,309 | 1,703 | 1,981 | 19.5 | 4.6  | 24.1 |
| Rural       | 552 | 61,384  | 3,606  | 1,549 | 872   | 409   | 25.2 | 14.2 | 39.4 |

### *5.02 Availability of Electricity*

Utilities play a critical role in the health delivery setting and contribute not only to promote quality of care but are also an essential tool for the operation of high, medium and low risk levels of equipment. The assessment sought to find out whether all the 1,268 health facilities have these basic amenities. The first highlight was electricity and the assessment enquired on primary source of electricity per health facility. The assessment further probed whether electricity was available and functioning at the time of the visit.

The survey found that 9% of facilities surveyed had no source of electricity. From the rest of the facilities that had electricity, the study found that 91% of the facilities had powerlines (Grid) as their primary source of electricity where as 8% of facilities had solar energy as their primary source of electricity and less than 1% of facilities had a generator as their primary source. It can be observed from Table 5.02 that across the regions Western, Central and Greater Accra have the highest percentage of facilities (100%) having their primary source of electricity as power lines. Brong Ahafo has the lowest percentage of facilities with the power grid (57%) as their primary source. In this Region, 41 % of the facilities use solar energy while 2% use generator as primary source of electricity.

All Teaching and Regional hospitals (100%) have the power grid as their primary source of electricity. About 96% of District hospitals and Health Centers use the power line as their primary source of electricity. Sixty-nine percent of the maternity homes use the power grid while 31% use solar energy as primary source. Just over half of the CHPS compounds which are spread across the rural areas of Ghana use the power grid and 45% use solar energy as their primary source of electricity.

**Table 5.02: Percent of facilities with no electricity and among those with electricity, percent distribution according to primary source and percent with functioning electricity during survey, by region and facility type**

|               | Total number of facilities | No Electricity | Number of facilities with any source | Primary sources of electricity |           |       |       | Electricity functioning at time of survey |
|---------------|----------------------------|----------------|--------------------------------------|--------------------------------|-----------|-------|-------|---|
|               |                            |                |                                      | Power lines (grid)             | Generator | Solar | Total |   |
|               | n                          | %              | n                                    | %                              | %         | %     | %     | %   |
| Ghana         | 1,268                      | 8.9            | 1,155                                | 91.3                           | 0.8       | 8.0   | 100.0 | 94.5                                      |
| Region        |                            |                |                                      |                                |           |       |       |   |
| Western       | 120                        | 14.2           | 3                                    | 100.0                          | 0.0       | 0.0   | 100.0 | 91.3                                      |
| Central       | 106                        | 6.6            | 9                                    | 100.0                          | 0.0       | 0.0   | 100.0 | 88.9                                      |
| Greater Accra | 148                        | 0.0            | 273                                  | 99.6                           | 0.0       | 0.4   | 100.0 | 97.3                                      |
| Volta         | 82                         | 1.2            | 464                                  | 91.2                           | 0.6       | 8.2   | 100.0 | 98.8                                      |
| Eastern       | 124                        | 4.0            | 145                                  | 91.7                           | 1.4       | 6.9   | 100.0 | 93.3                                      |
| Ashanti       | 216                        | 4.2            | 160                                  | 97.5                           | 1.3       | 1.3   | 100.0 | 95.2                                      |
| Brong Ahafo   | 121                        | 4.1            | 101                                  | 57.4                           | 2.0       | 40.6  | 100.0 | 97.4                                      |



|                   |     |      |       |       |     |      |       |      |
|-------------------|-----|------|-------|-------|-----|------|-------|------|
| Northern          | 108 | 16.7 | 1,155 | 91.3  | 0.8 | 8.0  | 100.0 | 90.0 |
| Upper East        | 147 | 13.6 | 103   | 94.2  | 4.9 | 1.0  | 100.0 | 95.3 |
| Upper West        | 96  | 32.3 | 99    | 99.0  | 0.0 | 1.0  | 100.0 | 95.4 |
|                   |     |      |       |       |     |      |       |      |
| Type of facility  |     |      |       |       |     |      |       |      |
|                   |     |      |       |       |     |      |       |      |
| Teaching Hospital | 3   | 0.0  | 81    | 100.0 | 0.0 | 0.0  | 100.0 | 66.7 |
| Regional Hospital | 9   | 0.0  | 119   | 100.0 | 0.0 | 0.0  | 100.0 | 88.9 |
| District Hospital | 273 | 0.0  | 207   | 95.7  | 1.0 | 3.4  | 100.0 | 98.5 |
| Health Centre     | 518 | 10.4 | 116   | 95.7  | 1.7 | 2.6  | 100.0 | 92.2 |
| Health Clinic     | 161 | 9.9  | 90    | 86.7  | 0.0 | 13.3 | 100.0 | 95.2 |
| Maternity Home    | 165 | 3.0  | 127   | 69.3  | 0.0 | 30.7 | 100.0 | 95.6 |
| CHPS Compound     | 139 | 27.3 | 65    | 55.4  | 0.0 | 44.6 | 100.0 | 92.1 |

### 5.03 Availability of Water

Table 5.03 shows the primary source of water by region and facility type. In all the 1,268 facilities surveyed, 8% of facilities had no source of water. Of all facilities with a source of water, 88% had potable water (i.e. piped or borehole). All the regions have at least 77% of their facilities using a potable water supply. Fifteen percent of facilities in the Western Region use well water as their primary source while 8% of facilities in the Northern Region use rain water for the same purpose. 25% of Health facilities in the Upper West, 21% in the Northern region 12% in Upper East and 11% in the Western region have no source of water.

Virtually, all the regional and district hospitals use potable water as their primary source of water. In the case of the Teaching hospitals 67% (i.e. 2 of 3 facilities) get their primary supply of water from potable source. Over 80% of the rest of the facility types have potable water as primary source of water supply. However, 9% of maternity homes obtain water from the wells and 6% from unspecified source. Five percent of health centers use rain water and 3% get their water from a well.

**Table 5.03: Percent distribution of facilities according to their primary source of water, by region and facility type**

|               | Total number of facilities | No water | Total number of facilities with any source of water | Potable (pipe/bore hole) | Well | River | Rain | Other (Dam, polytanks) |
|---------------|----------------------------|----------|---|--------------------------|------|-------|------|------------------------|
|               |                            | %        |   | %                        | %    | %     | %    | %                      |
| National      | 1,268                      | 8        | 1,168   | 88                       | 4    | 1     | 2    | 5                      |
| Region        |                            |          |   |                          |      |       |      |                        |
| Western       | 120                        | 11       | 107   | 80                       | 15   | 0     | 0    | 5                      |
| Central       | 106                        | 0        | 106   | 77                       | 6    | 1     | 6    | 10                     |
| Greater Accra | 148                        | 4        | 142   | 94                       | 1    | 0     | 0    | 6                      |
| Volta         | 82                         | 1        | 81  | 85                       | 1    | 2     | 4    | 7                      |
| Eastern       | 124                        | 6        | 116   | 85                       | 3    | 2     | 3    | 6                      |

|                          |     |    |     |     |   |   |   |    |
|--------------------------|-----|----|-----|-----|---|---|---|----|
| Ashanti                  | 216 | 2  | 212 | 89  | 3 | 0 | 2 | 6  |
| Brong Ahafo              | 121 | 2  | 118 | 93  | 3 | 0 | 3 | 1  |
| Northern                 | 108 | 21 | 85  | 78  | 5 | 4 | 8 | 6  |
| Upper East               | 147 | 12 | 129 | 95  | 4 | 0 | 0 | 2  |
| Upper West               | 96  | 25 | 72  | 96  | 1 | 0 | 0 | 3  |
|                          |     |    |     |     |   |   |   |    |
| Facility Type            |     |    |     |     |   |   |   |    |
| Teaching Hospital        | 3   | 0  | 3   | 67  | 0 | 0 | 0 | 33 |
| Regional Hospital        | 9   | 0  | 9   | 100 | 0 | 0 | 0 | 0  |
| District /Other Hospital | 273 | 1  | 270 | 96  | 0 | 0 | 0 | 3  |
| Health Centre            | 518 | 8  | 478 | 84  | 3 | 1 | 5 | 6  |
| Health Clinic            | 161 | 11 | 143 | 86  | 8 | 0 | 1 | 6  |
| Maternity Home           | 165 | 2  | 162 | 86  | 9 | 0 | 0 | 6  |
| CHPS Compound            | 139 | 26 | 103 | 88  | 6 | 1 | 3 | 2  |

## Referral for maternal and newborn emergencies

Many pregnancy complications are unpredictable and many women in developing countries may reside far away from where life-saving care is available. Referral interventions aim to mitigate these problems. The importance of referral in maternal and newborn care, especially in the event of an obstetric and/or newborn emergency, is related to the unpredictability of pregnancy complications, many of which cannot be dealt with at the primary level.

In order to assess referrals related to obstetric and newborn emergencies, providers likely to be knowledgeable about the referral system were asked a series of questions; the interview was directed at the transport officer, hospital administrator or a person in charge (this person could be the head of a department, a midwife or public health nurse in charge). The series of questions covered the 24 hour/7 days per week availability of the facility for emergencies, communication and transportation, protocols for referral and feedback, referral system management and health information related to referral.

### *5.04 Availability of services twenty-four hours a day, seven days a week*

Nationally, among the facilities that performed deliveries, 94% reported 24/7 coverage for obstetric and newborn emergencies while 92% did so for other emergencies. Among the facility types, only maternity homes reported less than 90% coverage for other emergencies. Regionally, more than 90% of facilities reported 24/7 coverage for emergency obstetric and newborn care; ranging from 91% in Ashanti to 100% in Upper West. Only Upper West reported 100% facilities offering around the clock coverage for all types of emergencies. Nearly all (99%) facilities under the management of religious institutions provided emergency obstetric and newborn care (Table 5.04).

**Table 5.04: Percentage of facilities with services available 24 hours a day, 7 days a week, by facility type, Region and managing organization (among facilities that performed deliveries in last 12 months)**

|               | Total number of facilities that performed deliveries | emergency obstetric and newborn care <sup>1</sup> | emergency care for other patients <sup>2</sup> |
|---------------|--|---|--|
|               |  | %   | %  |
| National      | 1159   | 94  | 92   |
| Facility Type |  |   |  |
| Hospital      | 281  | 98  | 98   |
| Health Center | 509  | 93  | 91   |
| Maternity     | 164  | 91  | 82   |

|  |     |     |     |
|--|-----|-----|-----|
| Health Clinic  | 136 | 94  | 92  |
| CHPS   | 69  | 94  | 94  |
|  |     |     |     |
| Region   |     |     |     |
| Western  | 120 | 96  | 98  |
| Central  | 105 | 94  | 82  |
| Greater Accra  | 138 | 96  | 92  |
| Volta  | 81  | 95  | 93  |
| Eastern  | 121 | 93  | 93  |
| Ashanti  | 214 | 91  | 88  |
| Brong Ahafo  | 120 | 94  | 95  |
| Northern   | 108 | 92  | 93  |
| Upper East   | 85  | 93  | 92  |
| Upper West   | 67  | 100 | 100 |
|  |     |     |     |
| Managing organization  |     |     |     |
| Government   | 727 | 94  | 92  |
| Private (for profit)   | 284 | 93  | 88  |
| NGO  | 3   | 33  | 33  |
| Religious Mission  | 145 | 99  | 98  |
| <i>1. One government health center in Upper East and one private maternity in Ashanti did not answer and are excluded from the percentage calculation in those rows.</i> |     |     |     |
| <i>2. Two hospitals in Greater Accra (one government and one private) did not answer and are excluded from the percentage calculation in those rows.</i>                 |     |     |     |

### **5.05 Communication and transportation**

Nationally, less than half (43%) of facilities reported facility-owned communication equipment that was functioning; 99% of facilities reported that staff personally owned functioning cell phones. Across the facility types, only 7% of CHPS compounds reported a functioning mode of facility-owned communication on site while 93% of hospitals reported the same. The functioning communication tool was more likely to be a fixed line in the maternity (58%) or elsewhere in the facility (75%). Greater Accra Region recorded the highest proportion of facilities with functioning facility-owned communication equipment (78%) while Upper East and Northern Regions reported the least (25% and 26% respectively). (Table 5.05).

**Table 5.05: Percentage of facilities with a functional mode of communication, by facility type and region (among facilities that performed deliveries in last 12 months)**

|               | Total number of facilities that performed deliveries | On-site, facility-owned communication   |  |  |                              |  | Functioning cell phone (owned by individual staff) | Functioning public telephone in vicinity |
|---------------|--|---|--|--|------------------------------|--|--|--|
|               |  | Functioning land telephone in maternity | Functioning land telephone elsewhere in facility | Functioning cell phone (owned by facility) | Functioning radio (Motorola) | At least one functioning mode of facility-owned communication on-site <sup>1</sup> |  |  |
|               | n  | %                                       | %  | %  | %                            | %  | %  | %  |
| National      | 1159   | 20                                      | 26   | 18   | 5                            | 43   | 99   | 6  |
| Facility Type |  |   |  |  |                              |  |  |  |
| Hospital      | 281  | 58                                      | 75   | 44   | 6                            | 93   | 99   | 10                                       |
| Health Center | 509  | 5                                       | 9  | 6  | 7                            | 23   | 99   | 4  |
| Maternity     | 164  | 25                                      | 16   | 22   | 1                            | 49   | 99   | 7  |
| Health Clinic | 136  | 4                                       | 15   | 14   | 1                            | 27   | 98   | 6  |
| CHPS          | 69   | 0                                       | 0  | 6  | 1                            | 7  | 99   | 3  |
| Region        |  |   |  |  |                              |  |  |  |
| Western       | 120  | 13                                      | 21   | 11   | 6                            | 31   | 98   | 3  |
| Central       | 105  | 13                                      | 21   | 14   | 1                            | 31   | 96   | 8  |

|               |     |    |    |    |    |    |     |    |
|---------------|-----|----|----|----|----|----|-----|----|
| Greater Accra | 138 | 45 | 59 | 25 | 6  | 78 | 99  | 3  |
| Volta         | 81  | 16 | 23 | 21 | 1  | 37 | 100 | 2  |
| Eastern       | 121 | 14 | 19 | 26 | 3  | 34 | 99  | 9  |
| Ashanti       | 214 | 30 | 30 | 23 | 3  | 52 | 99  | 11 |
| Brong Ahafo   | 120 | 19 | 26 | 18 | 0  | 41 | 100 | 7  |
| Northern      | 108 | 11 | 18 | 14 | 1  | 26 | 98  | 3  |
| Upper East    | 85  | 4  | 13 | 15 | 0  | 25 | 100 | 2  |
| Upper West    | 67  | 16 | 18 | 7  | 43 | 63 | 100 | 4  |

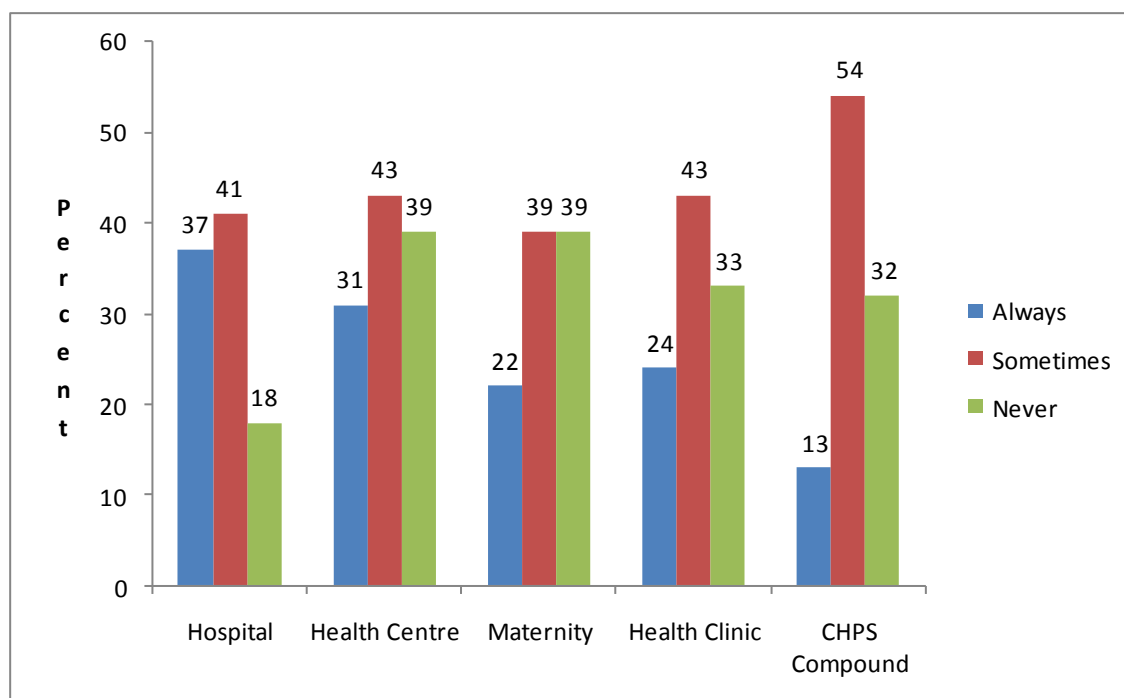
*Note: Denominators includes missing responses (<0.5% of all responses). This provides a conservative estimate of availability of communication.*

*1. Facilities included here are those that have at least one of the listed means of communication.*

Even though nationally, 83% of facilities reported that staff used their personal phones for emergency referral, only 19% of facilities regularly reimbursed staff for the expenditure (Table 5.01A in the appendix).

Nationally, facilities were not likely to call ahead to inform receiving facilities of a referral case; In fact, nationally, 27% of facilities never called while 39% of maternities and health centres never called ahead. CHPS compounds were the least likely to always call ahead to inform receiving facilities of a referral case (13%) while hospitals were the most likely to always call (37%) (Table 5.02A in the appendix and Fig. 5.01).

**Fig. 5.01: Frequency with which facility staff call ahead to inform receiving facility that a patient is coming<sup>1</sup>.**



<sup>1</sup>Don't know' responses not shown therefore bars may not add up to 100%

Nationally, 33% of facilities in Ghana depended upon the national ambulance system for emergency referral while 51% of the facilities arranged with private parties (taxis, buses) to transport referred cases to next facility while 46% assumed the client will make their own transport arrangements; 70% of maternities used the private parties while 62% of CHPS compounds assumed the clients will arrange their own transport. Hospitals were most likely to use the national ambulance system (68%) while maternity homes were the least likely (13%) to use this system. Eastern and Western regions were the heaviest users of private parties (70%



and 72% respectively) while Upper East Region was the least likely to have this arrangement (Table 5.06).

**Table 5.06: Percent of facilities using various strategies for emergency referral (either to go pick up patients or to transport patients to another facility), by facility type and region (among facilities that performed deliveries in last 12 months).**

|  | Total number of facilities that performed deliveries | Referral strategies (multiple responses allowed) |   |  |                        |  |
|--|--|--|---|--|------------------------|--|
|  |  | Use national ambulance system                    | Have agreements with private parties (taxis, buses, etc.) | Work with Ghana Private Road Transport Union | Use vehicles from DHMT | Assume patients will provide own transport |
|  |  | %  | %   | %  | %                      | %  |
| National   | 1159   | 33   | 51  | 11   | 13                     | 46   |
| <b>Facility Type</b>   |  |  |   |  |                        |  |
| Hospital   | 281  | 68   | 27  | 6  | 10                     | 34   |
| Health Center  | 509  | 24   | 57  | 17   | 17                     | 51   |
| Maternity  | 164  | 13   | 70  | 8  | 1                      | 43   |
| Health Clinic  | 136  | 25   | 57  | 6  | 13                     | 47   |
| CHPS   | 69   | 22   | 49  | 10   | 25                     | 62   |
| <b>Region</b>  |  |  |   |  |                        |  |
| Western  | 120  | 13   | 72  | 6  | 0                      | 41   |
| Central  | 105  | 32   | 49  | 32   | 5                      | 61   |
| Greater Accra  | 138  | 45   | 39  | 1  | 1                      | 37   |
| Volta  | 81   | 17   | 65  | 10   | 7                      | 40   |
| Eastern  | 121  | 27   | 70  | 5  | 2                      | 30   |
| Ashanti  | 214  | 33   | 58  | 5  | 7                      | 47   |
| Brong Ahafo  | 120  | 28   | 51  | 23   | 6                      | 48   |
| Northern   | 108  | 35   | 35  | 21   | 38                     | 54   |
| Upper East   | 85   | 47   | 21  | 6  | 60                     | 62   |
| Upper West   | 67   | 67   | 34  | 7  | 30                     | 46   |
| <i>Note: Up to 8% of facilities in Ashanti did not answer and are excluded from the percentage calculations in that row. Up to 4% of facilities excluded from calculation in any other row due to missing information.</i> |  |  |   |  |                        |  |

Nationally, only 17% of facilities had a functioning 4-wheel ambulance; 51% had some sort of motorized transportation, whether ambulance or a non-ambulance vehicle. Hospitals were the most likely to have a 4-wheel non-ambulance (66%) while CHPS compounds were the most likely to have a 2-wheel non-ambulance (45%). The regional proportional distribution of 4-

wheel ambulances was fairly even (18%-23%) except for Upper East (9%) and Western (10%) (Table 5.07).

**Table 5.07: Percentage of facilities with a functional mode of motorized transport, by facility type and region (among facilities that performed deliveries in last 12 months)**

|               | Total number of facilities that performed deliveries | 4-wheeled motor vehicle ambulance | Motorcycle ambulance | Motorized tricycle ambulance | Tractor ambulance | 4-wheeled non-ambulance (e.g. pickup, Land Rover minivan, etc.) | 2-wheeled non-ambulance (e.g. motorbike) | At least one functioning mode of motorized transport <sup>1</sup> |
|---------------|--|-----------------------------------|----------------------|------------------------------|-------------------|---|--|---|
|               |  | %                                 | %                    | %                            | %                 | %   | %  | %   |
| National      | 1159   | 17                                | 3                    | 0                            | 0                 | 26  | 22                                       | 51  |
| Facility Type |  |                                   |                      |                              |                   |   |  |   |
| Hospital      | 281  | 48                                | 4                    | 0                            | 0                 | 66  | 8  | 78  |
| Health Center | 509  | 8                                 | 4                    | 1                            | 0                 | 15  | 36                                       | 53  |
| Maternity     | 164  | 3                                 | 0                    | 0                            | 1                 | 10  | 0  | 13  |
| Health Clinic | 136  | 12                                | 2                    | 1                            | 0                 | 16  | 15                                       | 35  |
| CHPS          | 69   | 2                                 | 2                    | 0                            | 0                 | 3   | 45                                       | 46  |
| Region        |  |                                   |                      |                              |                   |   |  |   |
| Western       | 120  | 10                                | 0                    | 0                            | 0                 | 14  | 17                                       | 33  |
| Central       | 105  | 20                                | 3                    | 0                            | 0                 | 16  | 0  | 29  |

|  |     |    |    |   |   |    |    |    |
|--|-----|----|----|---|---|----|----|----|
| Greater Accra  | 138 | 22 | 2  | 1 | 0 | 43 | 7  | 51 |
| Volta  | 81  | 19 | 26 | 0 | 0 | 35 | 16 | 67 |
| Eastern  | 121 | 23 | 1  | 0 | 0 | 27 | 46 | 60 |
| Ashanti  | 214 | 16 | 2  | 0 | 0 | 28 | 15 | 48 |
| Brong Ahafo  | 120 | 18 | 0  | 0 | 2 | 20 | 18 | 42 |
| Northern   | 108 | 18 | 4  | 3 | 0 | 29 | 37 | 74 |
| Upper East   | 85  | 9  | 0  | 1 | 0 | 27 | 34 | 52 |
| Upper West   | 67  | 18 | 0  | 0 | 0 | 18 | 54 | 69 |
| <i>Approximately 4% of facilities did not answer questions about available transportation. These missing responses are excluded from the percentage calculation.</i> |     |    |    |   |   |    |    |    |
| <i>1. Facilities included here are those that have at least one of the listed modes of motorized transportation.</i>   |     |    |    |   |   |    |    |    |

Ghana has a total of 231 functioning 4-wheel ambulances with most located at the hospitals (Table 5.03A in the appendix). Nearly all the facilities with ambulances (94%) reported using their ambulances for emergencies (Table 5.04A in the appendix). Nationally, on average, 105,000 Ghanaians shared one (1) 4-wheel motor ambulance. Regionally, the per capita distribution of 4-wheel motor ambulance ranged from 1:52,136 in Upper West Region to 1:178,892 in Western Region (Data not shown).

In the 12-month period preceding the survey, the nurse or midwife in charge was the person most likely to be responsible for organizing emergency transport at any given facility; nationally, one-in-two cases of emergency transport was arranged by a nurse or midwife. These same personnel were also responsible for supervising the drivers of the vehicles in all facilities except in hospitals; health centre (24%), health clinic (45%), maternity (75%) versus hospital (1%). Except in Maternity Homes, the facility administrator or transportation officer was the person responsible for ensuring that the vehicles were in working order; in 75% of maternities, the nurse/midwife was responsible (Tables 5.05A, 5.06A and 5.07A in the appendix).

Among the facilities that used their own vehicles for emergency transportation (n=335), nearly half (49%) used written guidelines to manage and regulate their use and one in five produced these guidelines for inspection. Almost half of the facilities (49%) reported using Ministry of Health (MOH) guidelines while 37% of facilities use guidelines produced by the facility. Regionally, the proportion of facilities using written guidelines varied from 40% to 61% (Table 5.08A in the Appendix).

Most facilities (83%) expected their drivers to maintain logbooks to track and manage the use of vehicles; hospitals (89%) and health centres (91%) respectively. Nationally among the facilities where the driver was expected to maintain a logbook, recordings of departure and arrival times, mileage at departure and arrival, and trip purpose were high; 84%, 81%, 75%, 71% and 74% respectively. Drop-off location and fuel purchases were the least likely to be recorded (45% and 61% respectively). A similar trend was reported by facility type (Table 5.09 A in the Appendix).

Driver availability for emergency transportation was high nationally, regionally and by facility type. Among the facilities that used their own vehicles for emergency transport, only 49% have first-aid trained drivers; 61% at the hospital level versus 15% at the maternity home level. Regionally, the percentage of first-aid trained drivers ranged from 27% in Northern to 70% in Central. The most common topics for training were: fire extinguisher use and external bleeding control. Extrication and triage were the least likely topics for training (Table 5.10A in the Appendix).

More than three-in-four primary emergency vehicles in Ghana had a dedicated radio communication device in the vehicle or on the driver; slightly more than half had a drip line or stretcher (52% and 54%) but only 5% were equipped with an incubator (Table 5.08).

**Table 5.08: Percentage of facilities where primary emergency vehicle has indicated equipment, by facility type and region (among facilities that use their own vehicles for emergency transport).**

|                            | Total number of facilities using vehicles for emergency transport <sup>1</sup> | Percentage of facilities where primary emergency vehicle is equipped with: |           |           |           |                    |         |                                |
|----------------------------|--|--|-----------|-----------|-----------|--------------------|---------|--------------------------------|
|                            |  | Dedicated radio in vehicle (or on driver)?                                 | Drip line | Incubator | Stretcher | Pressure dressings | Splints | Protective wear for attendants |
|                            |  | %  | %         | %         | %         | %                  | %       | %                              |
| National                   | 335  | 76   | 52        | 5         | 54        | 36                 | 36      | 36                             |
| Facility Type <sup>1</sup> |  |  |           |           |           |                    |         |                                |
| Hospital                   | 188  | 77   | 70        | 9         | 73        | 52                 | 51      | 52                             |
| Health Center              | 95   | 72   | 32        | 0         | 33        | 19                 | 17      | 19                             |
| Maternity Health Clinic    | 20   | 75   | 25        | 0         | 25        | 10                 | 35      | 10                             |
|                            | 32   | 84   | 28        | 0         | 28        | 13                 | 13      | 13                             |
| Region                     |  |  |           |           |           |                    |         |                                |
| Western                    | 17   | [94]   | [53]      | [18]      | [53]      | [47]               | [47]    | [47]                           |
| Central                    | 27   | 85   | 56        | 7         | 59        | 37                 | 37      | 33                             |
| Greater Accra              | 47   | 70   | 62        | 4         | 64        | 51                 | 47      | 51                             |
| Volta                      | 27   | 56   | 56        | 4         | 56        | 41                 | 33      | 37                             |
| Eastern                    | 36   | 75   | 69        | 6         | 69        | 42                 | 53      | 36                             |
| Ashanti                    | 61   | 80   | 44        | 5         | 48        | 28                 | 31      | 31                             |
| Brong Ahafo                | 37   | 76   | 57        | 3         | 59        | 27                 | 27      | 27                             |
| Northern                   | 41   | 85   | 41        | 5         | 41        | 37                 | 39      | 41                             |
| Upper East                 | 24   | 58   | 29        | 0         | 33        | 17                 | 21      | 13                             |
| Upper West                 | 18   | [78]   | [56]      | [0]       | [61]      | [44]               | [22]    | [33]                           |

*NOTE: Estimates in [brackets] are based on fewer than 20 observations.*

*1. Facilities that have any type of ambulance and/or a 4-wheeled vehicle that is ever used for emergency transportation are included. Only 3 CHPS compounds met this description and therefore, due to small sample size, CHPS compounds are excluded from this table.*

Of the three variables studied to assess vehicle maintenance and repair, fuel and funds for maintenance were available for 90% or more of the facilities. Levels were high (>80%) across facility types and regions. Nationally, 67% of facilities that had their own vehicles for emergency transport had access to a garage locally; this was lowest for health centres and health clinics (56% and 50% respectively) (Table 5.11A in the Appendix).

The majority of hospitals (99%), maternities (85%) and health clinics (74%) are within 25km of a facility with surgical capacity but this declines at the health centre (66%) and CHPS (49%) levels. Only 14% of facilities are more than one (1) hour away from a facility with surgical capacity; however, it is important to note that close to 20% of facilities did not provide information on time to surgical care. (Tables 5.12A, 5.13A, 5.14A and 5.15A in the Appendix). In view of the poor appreciation of time and distance by most Ghanaians, the use of GPS equipment is expected to provide a more accurate account of these measurements.

#### ***5.06 Practices related to referral and feedback***

Nationally among the facilities that performed deliveries, the percentage of facilities that referred to a private facility and the percentage that received clients from a private facility did not differ; 29% versus 27%. Maternities (37%) and health clinics (35%) were the most likely to have referred a client to a private facility while the CHPS compounds and the maternities were the least likely to have received referrals from a private facility (4% and 5% respectively). Regionally, referrals to private facilities ranged from 3% in Upper West to 52% in Volta Region. Facilities in Volta Region were the most likely to receive referrals from a private facility (36%) while those in Upper West the least likely to do so (4%) (Table 5.16A in the Appendix).

Nearly half (47%) of the facilities that did deliveries reported having received referrals nationally. By facility-type, hospitals were the most likely to have received referrals (87%) while the CHPS compounds were the least likely to have received referrals (20%). Referrals to CHPS compounds are likely to have been from community-based volunteers and traditional birth attendants. Regionally, the percentage of facilities that reported having received referrals ranged from 36% to 54%. Two-thirds of religious mission hospitals reported having received referrals (Table 5.09).

**Table 5.09: Number of facilities that should receive referred patients, based on type of facility and sector, and number of facilities that are receiving referrals, based on answers in questionnaire**

|  | Total number of facilities that do deliveries | Total number of facilities that SHOULD receive referrals <sup>1</sup> | Total number of facilities that reported receiving referrals <sup>2</sup> |
|--|---|---|---|
| National   | 1159  | 761   | 547   |
| Facility Type  |   |   |   |
| Hospital   | 281   | 230   | 244   |
| Health Center  | 509   | 460   | 218   |
| Maternity  | 164   | 3   | 34  |
| Health Clinic  | 136   | 68  | 37  |
| CHPS   | 69  | 0   | 14  |
| Region   |   |   |   |
| Western  | 120   | 77  | 58  |
| Central  | 105   | 68  | 52  |
| Greater Accra  | 138   | 91  | 59  |
| Volta  | 81  | 61  | 34  |
| Eastern  | 121   | 78  | 61  |
| Ashanti  | 214   | 136   | 117   |
| Brong Ahafo  | 120   | 73  | 43  |
| Northern   | 108   | 78  | 51  |
| Upper East   | 85  | 49  | 41  |
| Upper West   | 67  | 50  | 31  |
| Managing organization  |   |   |   |
| Government   | 727   | 660   | 341   |
| Private (for profit)   | 284   | 101   | 109   |
| NGO  | 3   | 0   | 1   |
| Religious Mission  | 145   | 0   | 96  |
| <sup>1</sup> Included here are all government run facilities that are health center and above. Though health centers may not typically be referral centers, they will receive cases from the CHPS compound sometimes.  |   |   |   |
| <sup>2</sup> These facilities are classified based on their responses to 8 questions in Module 11. If they replied “never receive patients” to at least 5 of the 8 questions, they are classified as NOT receiving referrals. All others are assumed to receive referrals. There are many inconsistencies in the way facilities replied to these 8 questions. This approach identifies those facilities that were relatively consistent that they do/do not receive referrals. |   |   |   |



With reference to the practice of requiring fees for emergency patients referred out of a facility, national data show that (data for teaching and regional hospitals on out-referrals are excluded), 73% of facilities that referred obstetric and general patients out required that transportation/fuel fees be paid before the patient was transported. Facilities in Eastern (90%) and Volta (91%) were the most likely to require that such fees were paid while the facilities in Upper East (43%) were the least likely to do so. Compared with private-for-profit facilities, government-owned and facilities owned by religious bodies were more likely to require the payment of such fees (62% versus 78% and 70% respectively). Less than half (44%) of facilities (teaching and regional hospitals are included) that receive emergency patients reported waiving certain fees for pregnant, recently delivered women or their newborns on their arrival. Patients in the Northern, Eastern and Volta regions were the most likely to enjoy this waiver while those in the Western and Upper East Regions were the least likely. When the data were disaggregated by the management institution, the NGO and mission facilities were the most likely to waive certain fees (Table 5.17A in the Appendix).

The provision by facilities of certain services such as food, lodging and or fuel to families of emergency obstetric and newborn patients was minimal; lodging was the only service that was provided in very few cases. This pattern was observed facility-wise and regionally (Table 5.18A).

Among the facilities that undertake out-referrals only 15% reported receiving feedback all the time, while nearly half (49%) reported sometimes. This pattern was repeated facility-wise and regionally; CHPS compounds are the least likely to have received feedback each time they made a referral (6%) while no facility in the Volta Region reported always receiving feedback. Facilities were fairly likely to have sent a medical escort with the referral (43% always and 43% sometimes). Usually, the midwife was the medical escort (76%). In CHPS facilities, the community health officer (CHO) or the community health nurse (CHN) was the typical escort. Regionally, even though the midwife was the escort of choice, Brong Ahafo and Ashanti reported a fair number of health assistants as escorts (59% and 52% respectively) (Table 5.19A in the Appendix).

Written guidelines for the management of various obstetric and newborn complications were not widely available; guidelines for the management of newborn complications were the least likely to be available. Among facilities that conducted deliveries across the nation, the complications for which management guidelines were observed most by data collectors were severe pre-eclampsia/eclampsia (57%) and postpartum bleeding (55%). The conditions least likely to have had management guidelines were: ectopic pregnancy (8%), jaundice (7%) and malformations (5%). The hospitals were more likely than other facilities to have written guidelines for referral and management; however, except for guidelines for severe pre-eclampsia/eclampsia (70%) and postpartum bleeding (62%), management guidelines for the

rest of the selected complications were not widely available in hospitals. Regionally, Eastern Region reported wide availability of management guidelines ranging between 17% for malformations and 93% for postpartum bleeding; All regions except Volta, reported 10% or fewer facilities had guidelines for malformations (Table 5.10).

**Table 5.10: Percent of facilities with explicit written guidelines<sup>1</sup> for the referral management of selected complications, by facility type and region (among facilities to perform deliveries)**

|               | Total number of facilities | Antepartum bleeding | Postpartum bleeding | Severe pre-eclampsia/eclampsia | Prolonged/obstructed labor | Ectopic pregnancy | Shock / sepsis | Abortion complications | Fetal distress | Jaundice | Asphyxia | Low birth weight | Newborn infection / sepsis | Malformations |
|---------------|----------------------------|---------------------|---------------------|--------------------------------|----------------------------|-------------------|----------------|------------------------|----------------|----------|----------|------------------|----------------------------|---------------|
|               |                            | %                   | %                   | %                              | %                          | %                 | %              | %                      | %              | %        | %        | %                | %                          | %             |
| National      | 1,159                      | 30                  | 55                  | 57                             | 35                         | 8                 | 34             | 12                     | 15             | 7        | 21       | 10               | 14                         | 5             |
| Facility Type |                            |                     |                     |                                |                            |                   |                |                        |                |          |          |                  |                            |               |
| Hospital      | 281                        | 36                  | 62                  | 70                             | 42                         | 13                | 39             | 17                     | 21             | 8        | 27       | 14               | 18                         | 6             |
| Health center | 509                        | 28                  | 58                  | 57                             | 36                         | 8                 | 38             | 12                     | 14             | 6        | 21       | 9                | 13                         | 4             |
| Maternity     | 164                        | 28                  | 48                  | 52                             | 31                         | 6                 | 25             | 10                     | 11             | 5        | 16       | 8                | 13                         | 3             |
| Health clinic | 136                        | 31                  | 51                  | 47                             | 26                         | 8                 | 32             | 11                     | 16             | 9        | 20       | 11               | 16                         | 8             |
| CHPS          | 69                         | 20                  | 36                  | 29                             | 19                         | 4                 | 14             | 9                      | 7              | 4        | 9        | 10               | 9                          | 4             |
| Region        |                            |                     |                     |                                |                            |                   |                |                        |                |          |          |                  |                            |               |
| Western       | 120                        | 21                  | 30                  | 37                             | 13                         | 3                 | 10             | 4                      | 6              | 4        | 7        | 3                | 4                          | 3             |
| Central       | 105                        | 23                  | 61                  | 57                             | 22                         | 6                 | 39             | 13                     | 6              | 3        | 14       | 7                | 17                         | 1             |

|               |     |    |    |    |    |    |    |    |    |    |    |    |    |    |
|---------------|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Greater Accra | 138 | 18 | 32 | 38 | 16 | 1  | 13 | 5  | 14 | 1  | 17 | 6  | 10 | 1  |
| Volta         | 81  | 14 | 65 | 61 | 53 | 3  | 54 | 13 | 4  | 1  | 4  | 1  | 6  | 0  |
| Eastern       | 121 | 83 | 93 | 89 | 54 | 31 | 53 | 31 | 31 | 18 | 34 | 22 | 26 | 17 |
| Ashanti       | 214 | 31 | 54 | 59 | 25 | 6  | 18 | 10 | 17 | 7  | 25 | 14 | 11 | 6  |
| Brong Ahafo   | 120 | 27 | 88 | 95 | 78 | 8  | 77 | 3  | 12 | 3  | 32 | 5  | 16 | 1  |
| Northern      | 108 | 37 | 61 | 53 | 46 | 13 | 49 | 23 | 21 | 13 | 25 | 19 | 25 | 10 |
| Upper East    | 85  | 19 | 31 | 35 | 29 | 12 | 19 | 15 | 22 | 13 | 22 | 14 | 19 | 7  |
| Upper West    | 67  | 11 | 30 | 22 | 18 | 1  | 22 | 10 | 7  | 1  | 21 | 4  | 4  | 1  |

*1. These percentages represent the facilities where the guidelines were observed by the data collector. An additional 3-5% of facilities reported having guidelines but could not produce them for observation.*

For all complications, the most frequently cited producer of referral guidelines was the Ghana Health Services (typically over 75% of facilities reported GHS as the producer). The GHS was sometimes cited in conjunction the Ministry of Health or the District Health Management Teams, and GRMA (what does this stand for?), WHO, etc. Other producers of guidelines included the facility itself and the UN agencies (WHO, UNICEF, UNFPA and World Bank Group). For asphyxia and fetal distress, the American Heart Association was identified as the producer of guidelines in a few cases. The Safe Motherhood group and the regional or district hospitals were occasionally cited as producing the guidelines.

Nationally, less than one third of all direct obstetric complications admitted were out-referred by facilities. The most often referred complications were: retained placenta and post-partum hemorrhage (23%), pregnancy-induced hypertension (25%) and ante-partum hemorrhage (29%). For most complications, district hospitals referred 3%-16% of the admitted patients. Lower level facilities such as health centres, health clinics, maternity homes and CHPS compounds referred virtually all the complications they saw; in many instances the referral was made without admission accounting for the referral rates higher than 100%. Among the indirect obstetric complications that were admitted in a year, HIV-positive women were the most likely to be out-referred; district hospitals referred 31% of their HIV-positive obstetric clients while other facility levels referred over 100% (Tables 5.20A and 5.21A in the Appendix).

The majority (87%) of facilities reported that they were required to report on the number of clients referred out but less than half of facilities that referred clients to another facility (43%) recorded the out-referred maternity patients in an exclusive register. Most clients (82%) were sent with a completed referral form. These patterns are repeated across facility type and regions. The average monthly numbers of newborn and obstetric clients referred out were 0.7 and 3.0 respectively. Brong Ahafo and Greater Accra recorded the highest average monthly number of out-referred obstetric cases (4.4 and 4.8 respectively) while Ashanti and Western recorded the highest average monthly number of out-referred newborn cases (0.8 and 0.9 respectively) (Table 5.22A in the Appendix).

### ***5.07 Health information system and in-referral***

Of the facilities that reported receiving referred emergencies, 22% reported always and 44% reported sometimes sending or giving feedback to the referring facility. Except for Volta Region where less than half (39%) of the facilities reported sending feedback (always or sometimes), facilities in the other regions reported more than 50% feedback; ranging from 50% in Ashanti to 94% in Upper West. Nationally, 66% of facilities reported that patients referred in, always or sometimes came with a referral form (Table 5.23A in the Appendix). The reporting of sending/giving feedback corresponds well with the reports that receive it, as shown in Table 5.19A.

In summary, the dearth of facilities with skilled personnel and equipment and supplies to support emergency obstetric and newborn care, poor attitudes of providers, unavailability and cost of transportation, and the high costs of services are referred to repeatedly as the major obstacles to using services. Specific country-level efforts such as this survey, aimed at detailing these barriers to access essential obstetric and newborn services.

Round the clock availability of EmONC is universal; 94% of facilities report 24/7 coverage. A cell phone owned by individual staff is the most common functional mode of communication in

facilities that perform deliveries; 99% of staff report owning a functional cell phone and 83% report using their cell phones for emergency referral. The majority of primary emergency vehicles (75%) in Ghana have a dedicated radio communication device on the vehicle or on the driver. Transport arrangements for referred emergencies are quite dependent on the clients' ability to arrange their own transport; 46% of facilities that perform deliveries assume the client will make this arrangement as there is only one each functioning 4-wheel ambulance to serve 105,000 people in Ghana. Few drivers (45%) make entries in their logbooks on drop-off location and, fewer still are trained in triage (38%) and extrication (21%). Feedback on referrals is a serious shortcoming; only 15% of facilities always receive feedback and even though 82% of referred cases were sent with a completed form, only 66% of facilities report that patients came with a referral form. There is a dearth of management guidelines for newborn emergencies. In absolute figures, district hospitals refer more than 4600 women annually.

# CHAPTER SIX Human Resources

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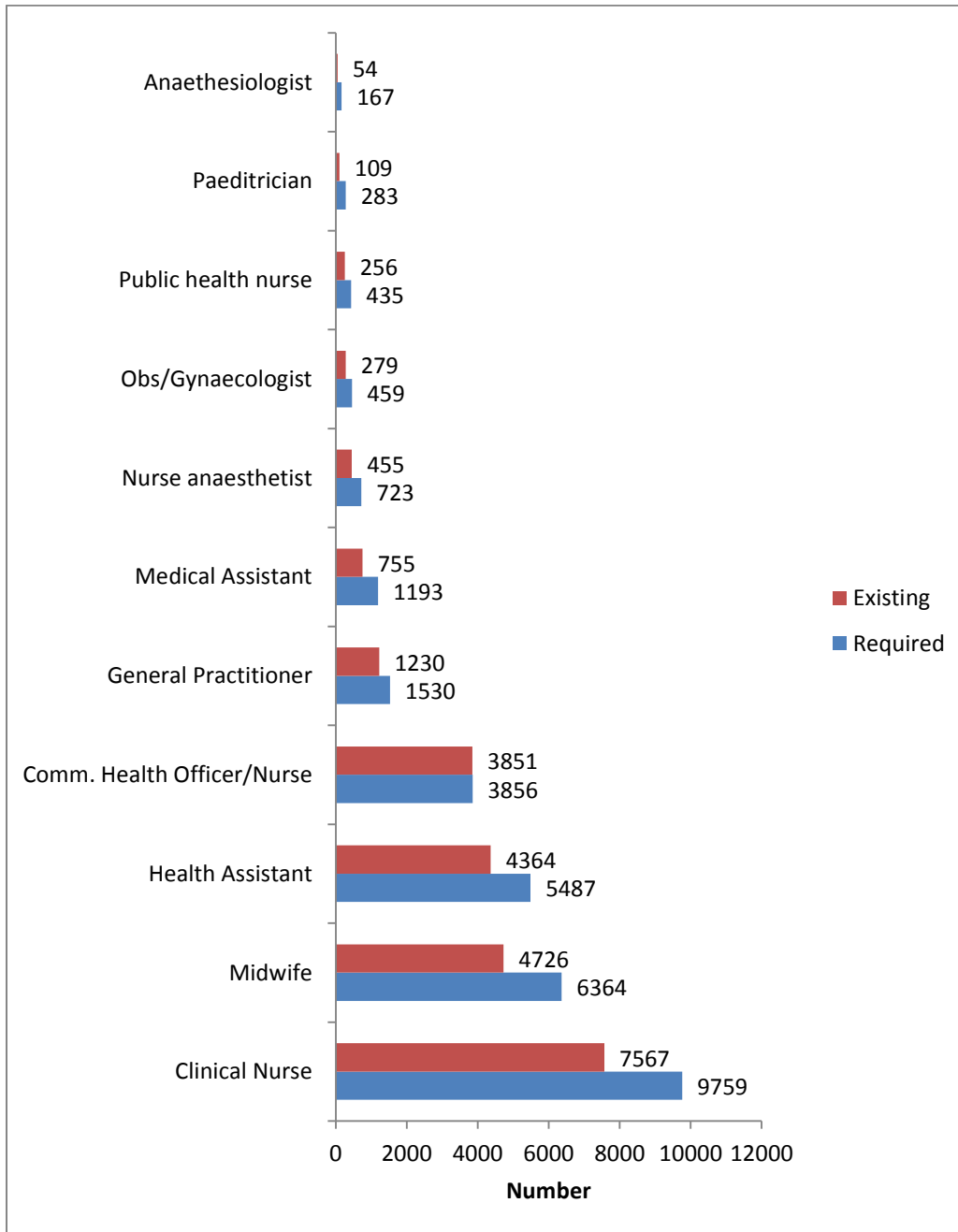
## *6.01 Meeting targets for human resources*

### **Overall staffing**

Table 6.01A in the Appendix shows national targets of required staff for selected health worker cadre by Region while Table 6.02A in the Appendix shows the number of selected health worker cadres currently working in facilities by Region. This information is also presented as Fig. 6.01 below. Heads of facilities were asked to provide the numbers needed as well as those currently working. It should be noted that no information on staffing norms was available and so heads of facilities merely reported what they perceived were staffing norms. For every health worker cadre, there is a gap in the number of workers required for service delivery. In terms of absolute numbers, the community health nurse/community health officer cadre shows almost no gap, while the clinical nurse category shows the widest gap of 2,192.

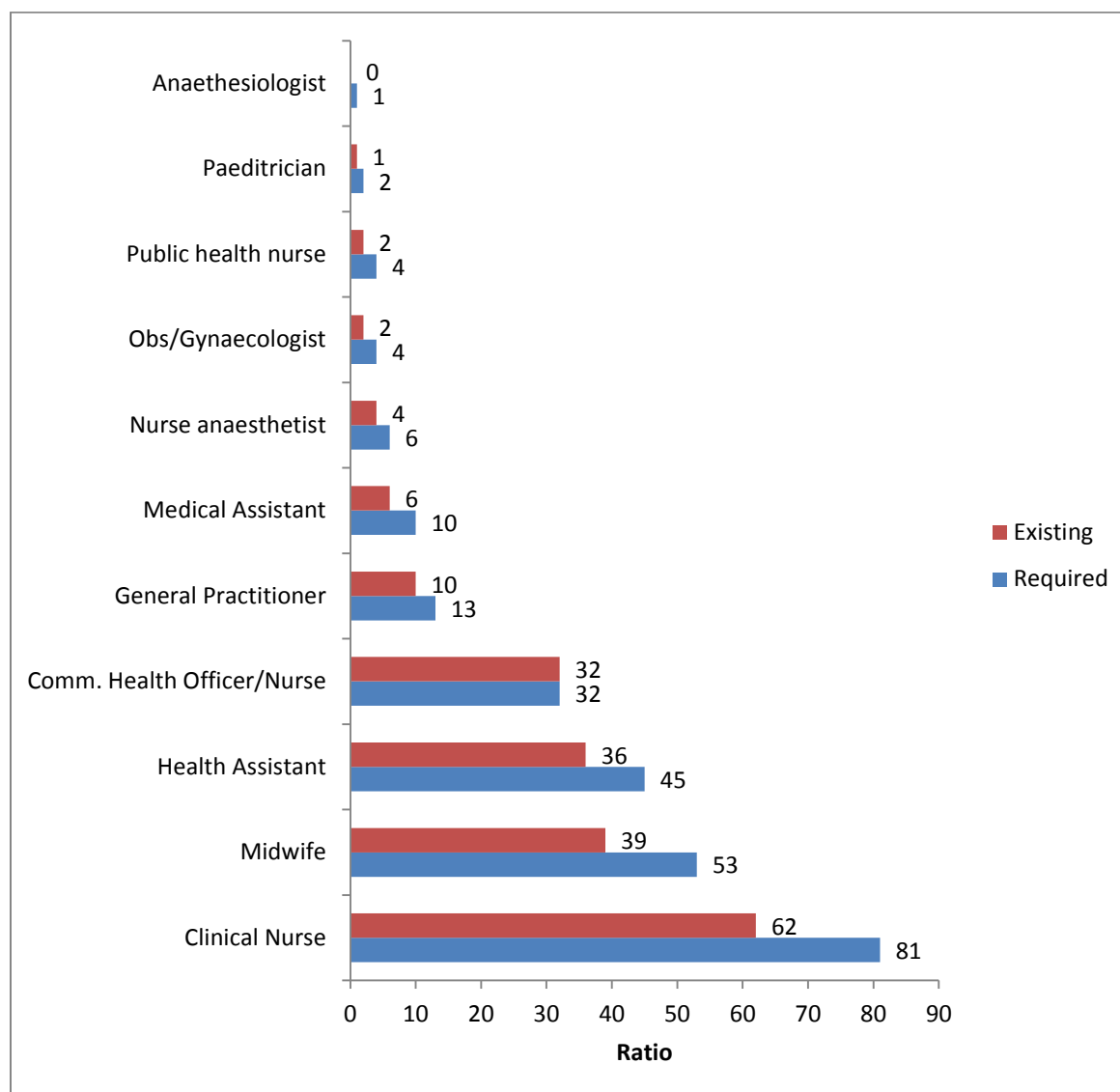
Tables 6.03A and 6.04A in the Appendix and Fig. 6.02 below show number of health worker cadres required and those currently working per 200,000 population. Nationally, for every 200,000 population, there are 2 obstetrician gynaecologists, 10 general practitioners, 39 midwives and 4 anaesthetists (anaesthesiologist and nurse anaesthetists). The least ratio is observed among the anaesthesiologist and paediatrician cadres, about 1 to every 200,000 population. Greater Accra has the highest numbers of obstetrician/gynaecologists (7.2), general practitioners (27.2) and midwives (62.6) for every 200,000 population and the Northern region has the least (0.4, 3.2 and 25.0, respectively). Greater Accra has more than two times the national average for most cadres except health assistant and CHO/CHN.

**Fig. 6.01: National level targets for selected health worker cadre**





**Fig. 6.02: Number of selected health worker cadres currently working in facilities by region per 200,000 population**



### 6.02 Health worker cadres and recent posting

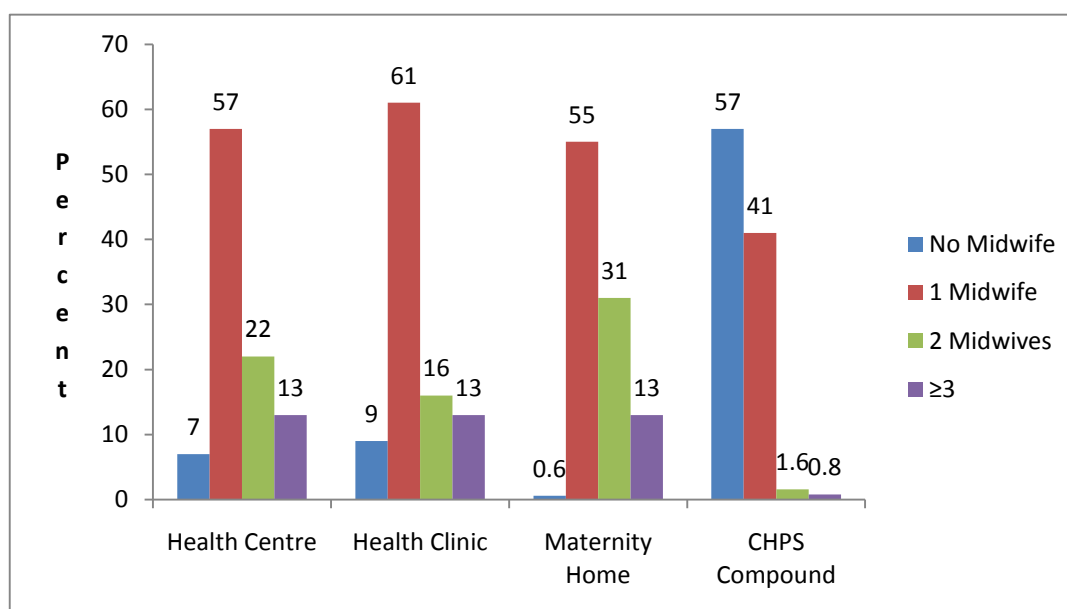
Tables 6.05A, 6.06A and 6.07A in the Appendix show the absolute numbers of health workers by cadre who either left or were posted to the various levels of facility in the 12 months preceding the survey. Nationally, there was an overall net gain among the various cadres with the exception of paediatrician, where there was a net loss of 1. By facility types there was a net loss of anaesthetists in regional hospitals (of 4) and obstetrician/gynaecologists in Teaching hospital (of 1).

### 6.03 Distribution pattern of health worker cadres by facility type

#### Distribution of midwives in health centres, health clinics, maternity homes and CHPS Compounds

Figure 6.03 and Tables 6.08A and 6.09A in the Appendix show the distribution pattern of midwives in health centres, health clinics, maternity homes and CHPS compounds. Most health centres, clinics, maternity homes and CHPS Compounds had only 1 midwife (57%, 61%, 55%, 41% of facilities, respectively) while 7%, 9%, 1% and 57% of these facilities had no midwife. A total of 35% of health centres, 29% of Health clinics, 44% of Maternity homes and 2% of CHPS Compounds had two or more midwives currently working.

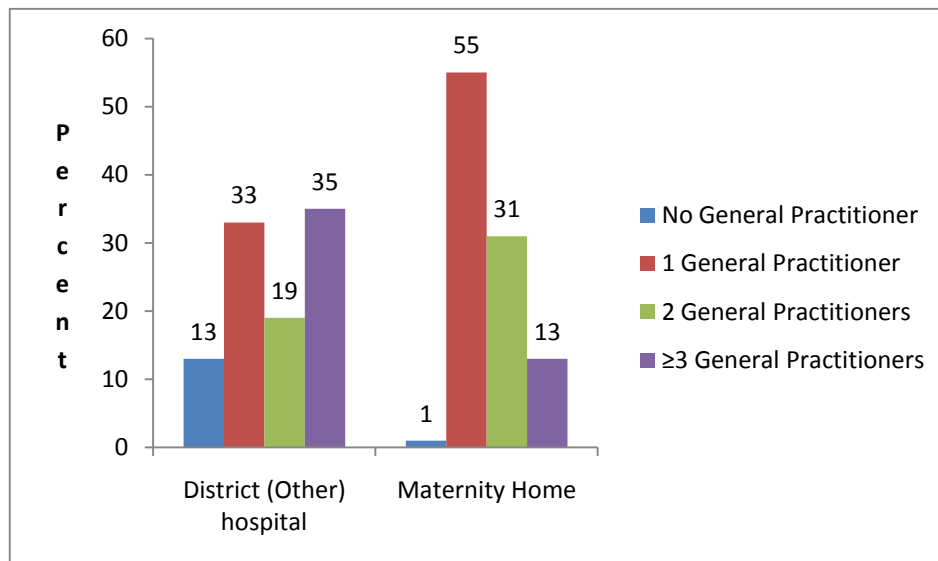
**Fig. 6.03: Percent distribution of midwives in Health centres, Health clinics, Maternity homes and CHPS Compounds**



#### Distribution of general practitioners in District (Other) hospitals and Maternity homes

Figure 6.04 and Tables 6.10A and 6.11A in the Appendix show the distribution pattern of general practitioners in District (Other) hospitals and Maternity homes. Out of the total number of 272 District (Other) hospitals, 13% had no general practitioner and 33% had one general practitioner and 55% had two or more general practitioners. There were 5 government and 5 mission hospitals without a general practitioner. Out of the 89 hospitals that had only 1 general practitioner working, more than half (49) were owned by government. A total of 1%, 55% and 44% of Maternity homes had no general practitioner, 1 general practitioner and 2 or more general practitioners, respectively.

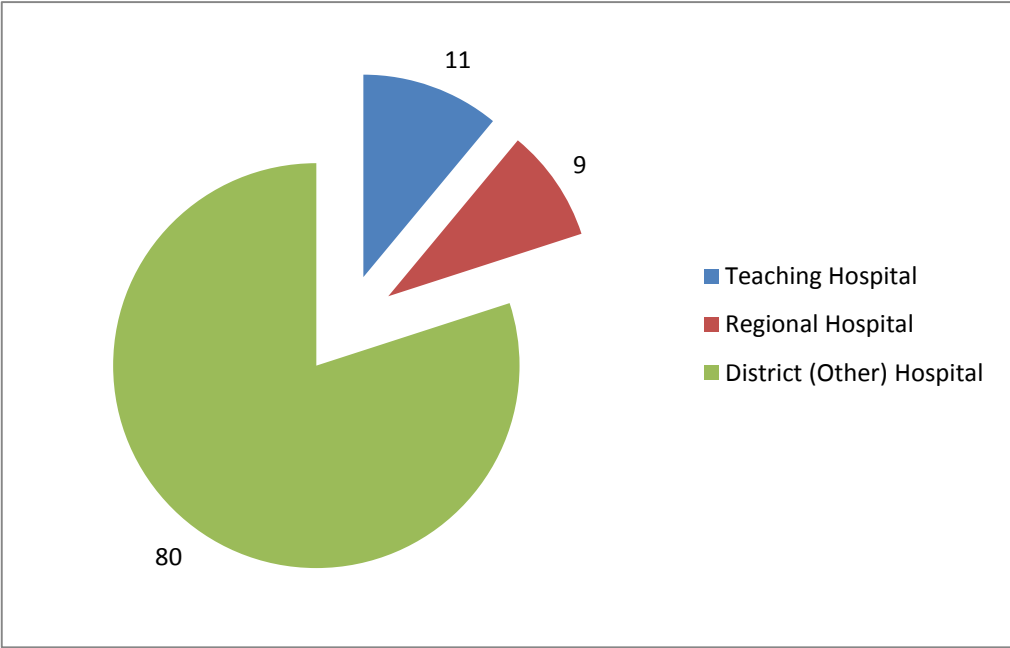
**Fig. 6.04: Percent distribution of general practitioners in District (Other) hospitals and Maternity homes**



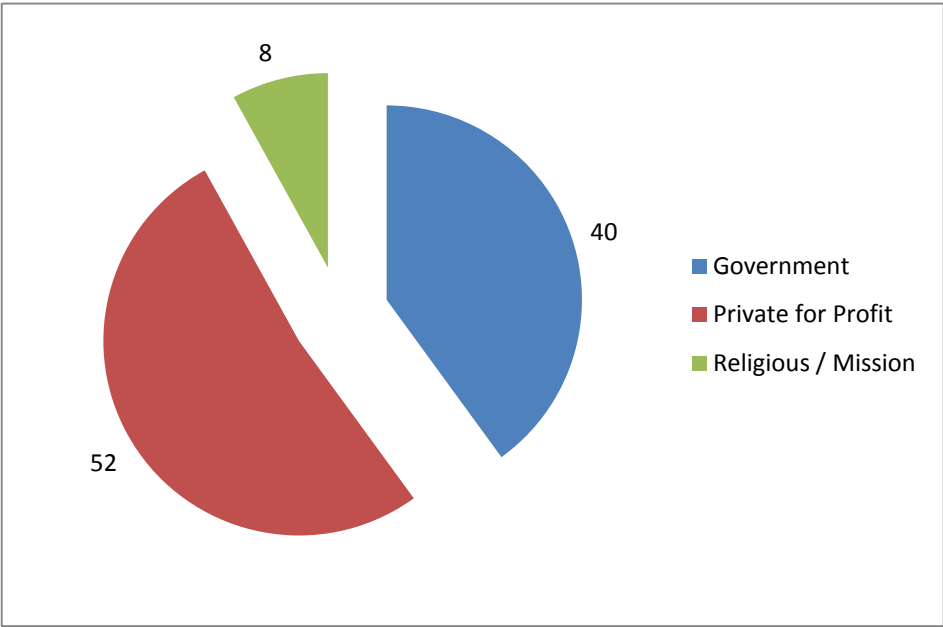
#### **Distribution of obstetrician/gynaecologists working in hospitals**

Figures 6.05 and 6.06 and Table 6.12A in the Appendix show the distribution pattern of obstetrician/gynaecologists working in hospitals by facility type and operating agency. We find that 80% of obstetrician/gynaecologists were in District (Other) hospitals, 11% in Teaching hospitals and 9% in Regional hospitals. When the data are analysed by operating agency, we find that 52% of obstetrician/gynaecologists were in the Private-For-Profit sector, 40% were in Government hospitals while 8% were in Religious / Mission hospitals. The total number of Obstetrician/Gynecologist in hospitals does not add up to the national total of 279 because there are 19 Ob/Gyns currently working at lower level facilities.

**Fig. 6.05: Percentage distribution of obstetrician/gynaecologists working in hospitals by facility type**



**Fig. 6.06: Percentage distribution of obstetrician/gynaecologists working in hospitals by operating agency**



#### **6.04 Availability of health worker cadre 24/7**

Labour and delivery and obstetric emergencies occur at anytime, requiring facilities to be open 24/7 with staff who can attend to patients quickly. Hospitals, being referral facilities need to be covered with cadres who can attend to emergencies, including C/S. Health worker cadres whose presence is critical to the management of obstetric emergencies, including C/S are obstetrician gynaecologists, general practitioners, midwives, anaesthetists and sometimes paediatricians. Tables 6.13A and 6.14A in the Appendix show the overall availability of different cadres in hospitals, whether the cadre was on duty or on call Monday – Friday, Saturday – Sunday, during the day and at night.

Obstetrician gynaecologists were found in about half of the hospitals (54%) while paediatricians were found in about a quarter (26%) of the hospitals. About nine in ten hospitals (89%) had general practitioners while almost eight in ten (77%) had nurse anaesthetists. Anaesthesiologists were working in less than one-fifth (16%) of the hospitals (Table 6.15A).

##### **On Duty**

For Monday to Friday, 23% of hospitals had obstetrician/gynaecologists on duty during the daytime while 11% of hospitals had the same cadre on duty at night. Over the weekend, 14% of hospitals had obstetrician/gynaecologists on duty during the daytime while 8% of hospitals had this cadre on duty at night.

For Monday to Friday, 26% of hospitals had general practitioners on duty during the daytime while 17% of hospitals had the same cadre on duty at night. Over the weekend, 21% of hospitals have a general practitioner on duty during the day while 17% of hospitals had general practitioners on duty at night.

For Monday to Friday nurse anaesthetists were on duty during the day in 22% of the hospitals and in 17% of the hospitals at night. Over the weekend, only 13% of hospitals had nurse anaesthetists on duty during the day and 9% of hospitals had the same cadre on duty at night.

The pattern here is that more facilities had these cadres of staff on duty during the day than during the night both week days and during weekends.

##### **On Call**

For Monday to Friday, 3% of hospitals have obstetrician/gynaecologists on call during the daytime while 14% have them on call during the night. Over the weekend, 11% of hospitals have this cadre on call during the day and 17% of hospitals have them on call during the night.

For Monday to Friday, no hospital had a general practitioner on call during the day and 8% of hospitals had them on call at night. Over the weekend, 4% of hospitals had general practitioners on call during the day and 8% had them on call at night.

For Monday to Friday nurse anaesthetists were on call during the day in 3% of the hospitals and in 8% of hospitals at night. Over the weekend, only 12% of hospitals had nurse anaesthetists on duty during the day and 16% of hospitals had the same cadre on duty at night.

Generally, for critical staff needed for the management of obstetric emergencies hospitals are better staffed during the day than at night. However emergencies occur at anytime within the 24 hour period. The pattern here is that more facilities depend upon cadres of staff on call during the night than during the day, both week days and during weekends.

#### ***6.05 Facilities that provide EmONC signal functions by health worker cadre***

Midwives are expected to provide all basic emergency obstetric and newborn care signal functions but also provide blood transfusion. General practitioners are expected to provide all the basic and comprehensive signal functions. Tables 6.15A and 6.16A in the Appendix shows the percentages of facilities that provide EmONC signal functions by health worker cadre. In the assessment, the health worker cadre that was present in almost all hospitals was the midwife (98%). This was followed by the clinical nurse (92%) and the general practitioner (89%). Midwives were found to provide almost all the basic signal functions except removal of retained products (by either MVA or D&C) and assisted vaginal delivery, where general practitioners mostly performed the procedures. In hospitals, blood transfusion to the newborn was also more likely be provided by a general practitioner than a midwife. In lower level facilities like health centres, clinics and maternity homes the midwife mostly does all of the basic signal functions including assisted vaginal delivery with vacuum extractor and removal of retained products with manual vacuum aspiration (MVA). Table 6.17A in the Appendix gives percentage of hospitals and health centres/clinics that provide other essential services or procedures, by health worker cadre.

#### ***6.06 Ratio of midwives to 1000 deliveries in a year***

The number of midwives attending 100 deliveries gives an indication of the workload borne by midwives. A benchmark sometimes used to plan midwifery workforce is that on average one midwife attends 175 births during one year<sup>15</sup>. This is more easily conceptualized as 6 midwives required to provide care for 1,000 births in a year. Table 6.01 shows the number of midwives attending 1000 institutional deliveries for the various regions. The actual number of midwives attending deliveries may be smaller since this assessment recorded all midwives working in a facility (both antenatal, delivery and postnatal) and not only those attending deliveries. These figures were calculated from the number of institutional deliveries that were conducted within a period of one year.

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<sup>15</sup> UNFPA (2011). The state of the World's Midwifery 2011 report

All the Regions had more than 6 midwives required to provide care for 1,000 births a year. Greater Accra Region had the highest number of midwives attending 1,000 deliveries (16.3), followed by Upper West region with 14.5 midwives for every 1,000 deliveries. Central Region had the lowest number attending the same number of deliveries (7.9), followed by Brong Ahafo, Upper East and Western regions (8.5, 8.6 and 9.5 respectively).

**Table 6.01: Number of Midwives per 1,000 institutional deliveries by Region**

|   | Population <sup>1</sup> | All facilities                          |                                  |  |
|---|-------------------------|---|----------------------------------|--|
|   |                         | Number of births attended in facilities | Number of Midwives in facilities | Number of Midwives per 1000 institutional delivery |
| National  | 24,232,431              | 434,508                                 | 4726                             | 10.9   |
| Region  |                         |   |                                  |  |
| Western   | 2,325,597               | 40,731                                  | 385                              | 9.5  |
| Central   | 2,107,209               | 45,474                                  | 359                              | 7.9  |
| Greater Accra   | 3,909,764               | 75,274                                  | 1224                             | 16.3   |
| Volta   | 2,099,876               | 28,474                                  | 342                              | 12.0   |
| Eastern   | 2,596,013               | 44,026                                  | 476                              | 10.8   |
| Ashanti   | 4,725,046               | 89,507                                  | 892                              | 10.0   |
| Brong Ahafo   | 2,282,128               | 46,274                                  | 392                              | 8.5  |
| Northern  | 2,468,557               | 31,709                                  | 308                              | 9.7  |
| Upper East  | 1,031,478               | 22,130                                  | 190                              | 8.6  |
| Upper West  | 677,763                 | 10,909                                  | 158                              | 14.5   |
| <sup>1</sup> Source of population estimates: Ghana Statistical Service (GSS) 2010 Population and Housing Census Provisional results |                         |   |                                  |  |

Table 6.02 shows the ratio of midwives to 1000 deliveries for the various facility types and by operating agency. CHPS compounds have the most favorable ratio of midwives to 1000 institutional deliveries or the smallest caseload, 12.5 midwives to 1000 deliveries. Midwives working in religious institutions generally have the highest caseload (between 7 and 9.1 midwives per 1000 deliveries). Midwives in private health centres have the highest workload.

**Table 6.02: Number of Midwives per 1,000 institutional deliveries by Facility Type and Operating Agency**

|   | Number of births attended in facilities | Number of Midwives in facilities | Number of Midwives per 1000 institutional deliveries |
|---|---|----------------------------------|--|
| National  | 434,508                                 | 4,726                            | 10.9   |
|   |   |                                  |  |
| Type of Facility/ Operating agency  |   |                                  |  |
| Hospitals <sup>1</sup>  | 283,754                                 | 3,175                            | 11.2   |
| Government  | 197,778                                 | 2257                             | 11.4   |
| Private/For Profit  | 21,532                                  | 428                              | 19.9   |
| NGO   | N/A                                     | N/A                              | N/A  |
| Religious/Mission   | 64,444                                  | 490                              | 7.6  |
|   |   |                                  |  |
| Health Centers  | 99,712                                  | 983                              | 9.9  |
| Government  | 89,041                                  | 909                              | 10.2   |
| Private/For Profit  | 438                                     | 2                                | 4.6  |
| NGO   | N/A                                     | N/A                              | N/A  |
| Religious/Mission   | 10,233                                  | 72                               | 7.0  |
|   |   |                                  |  |
| Health Clinics  | 19,523                                  | 220                              | 11.3   |
| Government  | 8,000                                   | 87                               | 10.9   |
| Private/For Profit  | 3,751                                   | 62                               | 16.5   |
| NGO   | 224                                     | 2                                | 8.9  |
| Religious/Mission   | 7,548                                   | 69                               | 9.1  |
|   |   |                                  |  |
| Maternity Homes   | 26,959                                  | 291                              | 10.8   |
| Government  | 2,278                                   | 32                               | 14.0   |
| Private/For Profit  | 24,553                                  | 258                              | 10.5   |
| NGO   | N/A                                     | N/A                              | N/A  |
| Religious/Mission   | 128                                     | 1                                | 7.8  |
|   |   |                                  |  |
| CHPS compounds  | 4,560                                   | 57                               | 12.5   |
| Government  | 4,450                                   | 56                               | 12.6   |
| Private/For Profit  | N/A                                     | N/A                              | N/A  |
| NGO   | 92                                      | 1                                | 10.9   |
| Religious/Mission   | 18                                      | 0                                | 0.00   |
| <i>N/A indicates that there are none of that facility type managed by the corresponding operating agency.</i> |   |                                  |  |
| <sup>1</sup> . Hospitals include : Teaching , Regional , District/Other                                       |   |                                  |  |



# CHAPTER SEVEN Provider knowledge and competency for maternal and newborn care

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Knowledge measurements are difficult to interpret clearly. It is expected that high knowledge scores translate into quality outcomes but in many instances this has not been the case. Given the already demanding scope of this survey, observation – a better method of measuring quality of care – was not possible.

Face-to-face interviews were employed to obtain responses from providers in health facilities that offer obstetric care. To be included, the provider had to be the one who conducted the greatest number of deliveries in the facility the month prior to the assessment and be present at the time of the visit. As part of the methodology, the response options to the questions were not communicated to the interviewees unless specific instructions requested that. But, interviewees were prompted to respond with as many answers as possible. The consent of the providers was sought after the purpose of the assessment was explained to them. It was emphasized that the interview was not a test and the respondents were assured of confidentiality (no names were recorded), and that the interview was voluntary. After observing these consent guidelines, the interview proceeded if the provider agreed to the interview.

At the 1,159 facilities that offered delivery services in the previous year, 1145 providers consented to be interviewed. Responses from two interviews were dropped from analysis because, despite consenting, the providers did not answer any of the questions. Therefore, the total number of providers whose answers are included is 1143 (Table 7.01A in the Appendix). The cadre of staff interviewed that carried out the greatest number of deliveries was the midwife, representing 88% of responses, followed by Community Health Nurse/Officer (6%), Health Assistants (3%) and medical assistants (1%). On average, midwives had attended 13.5 deliveries and medical assistants 10 in the previous month.

In all subsequent tables, some health workers were grouped with others of similar expected experience and training. The cadre of workers with smallest numbers and without affiliation by experience to any particular cadre of staff were dropped (i.e. 9 Clinical Nurses, 8 Traditional Birth Attendants, 14 categorized as 'Other's'). The number of providers included in the analysis is 1119.

In this chapter, emphasis is based on Midwives, Community Health Nurse/Officers, Health Assistants and Medical Assistants. Overall, 44% of these cadre of staff have been working in

their respective facilities for up to three years, 71% have spent up to 7 years (Table 7.02A in the Appendix).

### *7.1 Pregnancy and Delivery Care*

The first question in the interview was on the primary attributes of Focused Antenatal Care, with a perfect score of 6. Midwives were more knowledgeable with an average score of 2.9 while health assistants were least knowledgeable with a score of 2.1. Table 7.01 is the summary table of their performance to the 9 questions related to basic maternity care. (Table 7.03A in the Appendix gives the full details of the questions and responses). The average score of 2.8 out of 6 indicates that the providers interviewed did not have sufficient knowledge in primary aspects of FANC. Please note that mean scores in Table 7.01 and subsequent Tables have also been converted to percentage in the preceding text.

The second question asked which women required a special care plan. The average score out of 8 was 4.3 with midwives scoring highest (4.5) and CHN/CHO scoring lowest 3.2. The midwives and medical assistants scored slightly over 50% which shows that knowledge in this area is minimal.

The highest mean score was obtained in response to the question on the signs of labour in a pregnant woman (78%), the highest being midwives and MA (80%) and lowest being Community Health Nurses/Officers who scored 68%.

When it comes to what to monitor when a woman is in labour, Midwives scored 76% and medical assistants had the lowest score (58%). The poorest scores were registered in relation to where the information related to monitoring a woman in labour should be recorded. The highest score was 38% (midwives) and the lowest 26% (CHN/CHO). However, all cadres scored over 50% on the steps of active management of the third stage of labour (AMTSL), the highest being midwives scoring 70%.

Midwives and medical assistants scored the highest on how to assess and manage women who arrive with or develop heavy bleeding after birth. However, the CHO/CHN cadre registered the lowest score of 36%. Also, CHO/CHN scored the lowest on management of retained placenta (26%) compared to midwives who scored the highest (54%).

Overall midwives knowledge scores on maternity care were higher than the other cadres. This can be reassuring since they represent the largest group engaged in delivery care. However, one may expect scores of 85% or more for the management of bleeding during or after delivery but the percentage was around 60% and less. Given their academic backgrounds, the performance of the lower cadres of staff may not be surprising, but scores of 33% and 36% are not encouraging. Training in the management of bleeding as well as recording the progress of labour and focused antenatal care should be considered.

**Table 7.01: Knowledge scores related to maternity care, by health worker cadre**

|  | Total<br>(n=1119) | Midwife<br>(n=986) | CHN/CHO<br>(n=71) | HA/CN<br>(n=44) | MA/PHN<br>(n=18) |
|--|-------------------|--------------------|-------------------|-----------------|------------------|
| What are the primary aspects of focused antenatal care?                                |                   |                    |                   |                 |                  |
| Average score (out of 6)   | 2.8               | 2.9                | 2.2               | 2.1             | 2.4              |
| Which women require a special care plan?   |                   |                    |                   |                 |                  |
| Average score (out of 8)   | 4.3               | 4.5                | 3.2               | 3.6             | 4.1              |
| How do you know when a pregnant woman is in labor?                                     |                   |                    |                   |                 |                  |
| Average score (out of 4)   | 3.1               | 3.2                | 2.7               | 3.0             | 3.2              |
| What do you monitor when a woman is in labor?  |                   |                    |                   |                 |                  |
| Average score (out of 9)   | 6.6               | 6.8                | 4.3               | 5.2             | 5.6              |
| Where do you record this information?  |                   |                    |                   |                 |                  |
| Average score (out of 5)   | 1.8               | 1.9                | 1.3               | 1.4             | 1.6              |
| What are the steps of AMTSL?   |                   |                    |                   |                 |                  |
| Average score (out of 4)   | 2.7               | 2.8                | 2.0               | 2.3             | 2.4              |
| What do you look for when a woman arrives with or develops heavy bleeding after birth? |                   |                    |                   |                 |                  |
| Average score (out of 7)   | 4.1               | 4.2                | 2.3               | 3.0             | 4.1              |

|   |     |     |     |     |     |
|---|-----|-----|-----|-----|-----|
| What do you do when a woman develops heavy bleeding after birth?  |     |     |     |     |     |
| Average score (out of 8)  | 5.1 | 5.3 | 2.9 | 4.1 | 4.6 |
| What do you do when a woman has given birth and retained the placenta?  |     |     |     |     |     |
| Average score (out of 10)   | 5.1 | 5.4 | 2.6 | 3.9 | 4.3 |
| <i>Note: CHN is community health nurse. CHO is community health officer. HA is health assistant. MA is medical assistant. AMTSL is Active Management of the Third Stage of Labor.</i> |     |     |     |     |     |

## 7.2 Unsafe abortion care and care for victims of rape

Complications arising from unsafe abortion are one of the leading causes of maternal morbidity and mortality. The assessment probed respondent's knowledge on how to identify, manage and counsel women visiting their facilities with complications of unsafe abortion and also management of victims of rape (Table 7.02 and Table 7.04A in the appendix).

**Table 7.02: Knowledge scores related to abortion care and care for victims of rape, by health worker cadre**

|   | Total<br>(n=1,119) | Midwife<br>(n=986) | CHN/CHO<br>(n=71) | HA/CN<br>(n=44) | MA/ PHN<br>(n=18) |
|---|--------------------|--------------------|-------------------|-----------------|-------------------|
| What are the complications of unsafe abortion?                    |                    |                    |                   |                 |                   |
| Average score (out of 5)  | 2.7                | 2.8                | 2.2               | 1.9             | 2.5               |
| What do you do for a woman with an unsafe or incomplete abortion? |                    |                    |                   |                 |                   |
| Average score (out of 9)  | 3.9                | 4.0                | 2.5               | 3.4             | 3.5               |
| What information do you give to women after unsafe or             |                    |                    |                   |                 |                   |

|   |     |     |     |     |     |
|---|-----|-----|-----|-----|-----|
| incomplete abortion? <sup>1</sup>   |     |     |     |     |     |
| Average score (out of 6)  | 2.9 | 3.0 | 2.3 | 2.8 | 3.1 |
| What do you do for the victim of rape?  |     |     |     |     |     |
| Average score (out of 8)  | 2.7 | 2.7 | 2.2 | 2.0 | 1.9 |
| <i>Note: CHN is community health nurse. CHO is community health officer. HA is health assistant. MA is medical assistant. .</i> |     |     |     |     |     |

The highest average score was obtained for the first question on knowledge on the complications of unsafe abortion; midwives and medical assistants scored 56.0% and 50% respectively while health assistants scored lowest (38%). Midwives and medical assistants attained 50% or higher on the information that should be given to women after unsafe abortion. With regard to the management of this condition, none of the cadres scored 50%; Medical assistants scored as low as 38%. Midwives, who routinely offer maternal services, scored 44%. If health workers can identify some appreciable level of complications and inform or counsel the woman on what to do but cannot manage the condition, then the practice-related element of their knowledge on unsafe abortions is missing and needs strengthening. On the last question “What do you do for the victims of rape?” none of the categories scored 50%, an indication of serious knowledge deficit.

### 7.3 Newborn care and morbidity

Delivery does not end with the mother alone but also how the baby is cared for in order to reduce infections or conditions that cause morbidity. Most newborn deaths occur during the first week of life particularly in the first 48 hours which also is a high risk period for mothers. Table 7.03 summarizes the responses to the newborn questions, while Table 7.05A in the Appendix provides the details of the questions asked and their corresponding scores.

**Table 7.03: Knowledge scores related to newborn care and morbidity, by health worker cadre**

|   | Total<br>(n=1,119) | Midwives<br>(n=986) | CHN/CHO<br>(n=71) | HA/CN<br>(n=44) | MA/ PHN<br>(n=18) |
|---|--------------------|---------------------|-------------------|-----------------|-------------------|
| The last time you delivered a baby, what immediate care did you give the newborn? |                    |                     |                   |                 |                   |

|   |     |     |     |     |     |
|---|-----|-----|-----|-----|-----|
| Average score (out of 11)   | 6.3 | 6.4 | 4.8 | 5.8 | 6.0 |
| What are the signs and symptoms of infection, or sepsis, in the newborn?  |     |     |     |     |     |
| Average score (out of 7)  | 3.3 | 3.4 | 2.2 | 2.5 | 3.3 |
| When the newborn presents signs of infection, what initial steps do you take?   |     |     |     |     |     |
| Average score (out of 5)  | 2.1 | 2.2 | 1.6 | 1.8 | 1.8 |
| When a newborn weighs less than 2.5kgs, what special care do you provide?   |     |     |     |     |     |
| Average score (out of 5)  | 2.9 | 3.0 | 2.4 | 2.3 | 2.7 |
| <i>Note: CHN is community health nurse. CHO is community health officer. HA is health assistant. MA is medical assistant. PHN is public health nurse.</i> |     |     |     |     |     |

The highest average scores were obtained for the question on immediate newborn care; 44% (CHN/CHO), 53% (HA), 55% (MA) and 58% (midwives). The most common response for all cadres was “clean the mouth, face and nose.” The least mentioned was “provide prophylaxis for eyes.”

With an average score of 47%, knowledge was lacking on signs and symptoms of infection or sepsis in the newborn. Midwives scored highest (49%) while CHN/CHO scored lowest (31%). The question on initial steps to take when a newborn presents signs of infection presented the greatest challenge to the respondents; 32% (CHN/CHO), 36% (MA, HA) and 44% (midwives) were the respective scores. Most of the respondents chose “refer” while “keep airways open” was the least frequent answer. With regard to the care for low birth weight newborns, midwives scored 60%, the only cadre to score more than 50%, and health assistants scored lowest at 46%.

#### 7.4 Training and recent delivery of services

The interview took respondents through a list of services in which they have received in-service or pre-service training and whether they have provided that service in the last 3 months. Tables 7.06A and 7.07A in the Appendix give an overview of these services and whether these were provided in the last 3 months. More than 80% of the providers interviewed reported receiving training on: Use of partograph, active management of the third stage, setting up infusions, checking for anemia suturing episiotomies and vaginal lacerations, counseling women on family planning and newborn resuscitation. The services least frequently reported were: dilation and curettage (3%) and the use of obstetric forceps (4%). Most of these trained personnel reported providing service in the previous three months. About 25% of untrained staff report providing many of these services as well: (AMTSL, setting up infusions, checking for anemia and FP counseling).

#### 7.5 Competency in newborn resuscitation

The knowledge of newborn resuscitation was assessed through a series of questions that function as a guided interview. Table 7.04 and Table 7.08A in the Appendix give a summary of the management of birth asphyxia among providers trained or experienced with neonatal resuscitation. Of the various aspects assessed, providers reported the highest knowledge in terms of “how to diagnose birth asphyxia” (70%) and what to do if a baby has no difficulty breathing (73%). The scores were poorest for the steps to take when the newborn does not begin to breathe or if breathing less than 30 breaths per minute (38%). Medical assistants and midwives were the most likely to be able to diagnose birth asphyxia. Perhaps this can be explained by the results in Table 7.08A in the Appendix that show midwives and medical assistants were more likely to have received training on newborn resuscitation, both pre-and in-service, than the other cadres. Nonetheless, not all cadres of staff attained a score of 50% on newborn resuscitation.

**Table 7.04: Knowledge scores related to diagnosis and management of birth asphyxia among those with either training or experience in neonatal resuscitation, by health worker cadre**

|   | Total<br>(n=1,003) | Midwives<br>(n=940) | CHN/CHO<br>(n=71) | HA/CN<br>(n=44) | MA/ PHN<br>(n=18) |
|---|--------------------|---------------------|-------------------|-----------------|-------------------|
| How to diagnose birth asphyxia <sup>1</sup> |                    |                     |                   |                 |                   |
| Average score (out of 4)                    | 2.8                | 2.9                 | 1.8               | 1.8             | 3.0               |
| Preliminary steps of neonatal               |                    |                     |                   |                 |                   |

|  |     |     |     |     |     |
|--|-----|-----|-----|-----|-----|
| resuscitation <sup>1,2</sup>   |     |     |     |     |     |
| Average score (out of 7)   | 3.9 | 3.9 | 2.4 | 2.7 | 3.4 |
| If resuscitating with bag & mask, what do you do? <sup>3</sup>   |     |     |     |     |     |
| Average score (out of 5)   | 2.9 | 2.9 | 1.9 | 1.9 | 3.0 |
| If baby is breathing and no respiratory difficulty, what do you do? <sup>3</sup>   |     |     |     |     |     |
| Average score (out of 3)   | 2.2 | 2.2 | 1.8 | 1.8 | 2.2 |
| If baby does not begin to breathe, or if breathing is < 30 per minute, what do you do? <sup>2,3</sup>  |     |     |     |     |     |
| Average score (out of 6)   | 2.3 | 2.4 | 1.6 | 1.5 | 2.5 |
| <i>Note 1: Missing responses (less than 4% unless otherwise indicated) are included in the denominator to provide a conservative estimate.</i> |     |     |     |     |     |
| <i>Note 2: CHN is community health nurse. CHO is community health officer. HA is health assistant. MA is medical assistant.</i>                |     |     |     |     |     |
| <i>1. Two Health Assistants (9.1%) responses are missing and included in the denominator.</i>  |     |     |     |     |     |
| <i>2. One Medical Assistant (7.7%) response is missing and included in the denominator.</i>  |     |     |     |     |     |
| <i>3. Three Health Assistants (13.6%) responses are missing and included in the denominator.</i>   |     |     |     |     |     |

In summary, the knowledge and competencies of every health provider are crucial for quality care. In this chapter the assessment measured the knowledge levels of providers of obstetric and newborn care by asking open-ended questions. The results show that all providers have some knowledge in the services they provide. Overall knowledge and competencies differ with categories assessed, some at appreciable levels others not. Generally, midwives appeared to be the most able to provide more answers to the questions, thus scoring highest. Medical assistants and public health nurses followed closely. Theoretical knowledge is a first step toward actual practice. Recommendations to sharpen their skills for quality care become very necessary. Additional refresher training and supportive supervision and coaching are recommended.



# CHAPTER EIGHT Drugs, Equipment and Supplies

The aim of this chapter is to present information on availability of essential drugs, equipment and supplies for Emergency Obstetric and Neonatal Care (EmONC). The performance of the EmONC signal functions requires the availability of essential drugs, equipment and supplies. To assess the availability of these drugs, equipment and supplies, Module 3 was used to identify gaps.

## 8.01 Management and stock out of drugs and supplies

Virtually, all the facilities assessed either had a Pharmacy /drug store or a supply of medicines. All Teaching and Regional hospitals have up to date drug inventory registers. For district (other) hospitals, these registers are up to date in 74% of facilities. For health centres they are up to date in 66% of facilities, for health clinics in 54% of facilities, maternity homes in 23% and CHPS compounds 46% (Table 8.01).

Most of facilities that have a Pharmacy or a supply of medicines procure medicines, gloves, syringes and other medical supplies from the Government Medical Store (67%), while private suppliers supply 30% of facilities with these items. Among hospitals, district hospitals procured medicines and other medical supplies about half from the Government Medical stores and the other half from private sources. Maternity homes were the most likely to procure their medicines and other medical supplies (gloves, syringes, etc.) from private suppliers (94%). This can be explained by the fact that 98% of maternity homes are privately owned (Table 2.02).

**Table 8.01: Percentage of facilities with a supply of medicines with registers and sources of drugs and supplies, by type of facility**

|  | Teaching Hospitals | Regional Hospital | District (Other) Hospital | Health Centre | Health Clinic | Maternity Home | CHPS Compound | Total    |
|--|--------------------|-------------------|---------------------------|---------------|---------------|----------------|---------------|----------|
|  | %                  | %                 | %                         | %             | %             | %              | %             | %        |
| <i>Among all facilities</i>              | (n=3)              | (n=9)             | (n=273)                   | (n=518)       | (n=161)       | (n=165)        | (n=139)       | (n=1268) |
| Facility has pharmacy/supply of medicine | 100                | 100               | 100                       | 100           | 98            | 97             | 99            | 99       |
| <i>Among facilities with</i>             | (n=3)              | (n=9)             | (n=272)                   | (n=517)       | (n=158)       | (n=160)        | (n=138)       | (n=1257) |

|  |     |     |    |    |    |    |    |    |
|--|-----|-----|----|----|----|----|----|----|
| <i>a pharmacy/supply of medicine</i>                     |     |     |    |    | )  |    |    | )  |
| Drug inventory register exists                           | 100 | 100 | 86 | 92 | 76 | 38 | 71 | 80 |
| Drug inventory register exists and is up-to-date         | 100 | 100 | 74 | 66 | 54 | 23 | 46 | 59 |
|  |     |     |    |    |    |    |    |    |
| Major source of medicine for facility                    |     |     |    |    |    |    |    |    |
| Government   | 100 | 89  | 46 | 93 | 54 | 4  | 98 | 67 |
| Private pharmacy   | 0   | 11  | 49 | 5  | 39 | 94 | 1  | 30 |
| NGO / Mission  | 0   | 0   | 5  | 2  | 7  | 1  | 1  | 3  |
| Other  | 0   | 0   | 0  | 0  | 1  | 1  | 0  | 0  |
|  |     |     |    |    |    |    |    |    |
| Primary source for gloves, syringes and medical supplies |     |     |    |    |    |    |    |    |
| Government supplier                                      | 100 | 100 | 45 | 92 | 54 | 5  | 99 | 67 |
| Private pharmacy   | 0   | 0   | 50 | 5  | 37 | 94 | 0  | 30 |
| NGO / Mission  | 0   | 0   | 4  | 3  | 8  | 0  | 1  | 3  |
| Other  | 0   | 0   | 1  | 0  | 1  | 1  | 0  | 0  |

### When medicines are ordered

In the labour and delivery ward, 40% of facilities ordered whenever stocks reach re-order levels, while 35% of facilities ordered same time each week, month or quarter. The remaining 25% of facilities ordered either daily, re-ordered when they run out or ordered medicine on patient-to-patient basis (10%, 10% and 5% respectively) (Table 8.01A in the Appendix). In the post natal ward, 34% of facilities ordered medicines whenever stocks reach re-order levels while 31% of facility orders are done same time each week/month/quarter and 14% of facilities order daily.

### Common causes of delays in delivery of supplies

Teaching hospitals in Ghana never experienced delays in delivery of supplies and almost two-thirds of private hospitals, most private health clinics and most maternity homes (regardless of sector) reported not experiencing delays. However, many facilities did. Stock out at central store was the commonest cause of delays in Regional hospitals, health clinics and CHPS compounds. For health centres, the commonest cause of delays was inadequate transport and financial problems are responsible for most delays in health clinics (Tables 8.02A and 8.03A in the Appendix).

### **Accessibility of Pharmacy and reporting of Pharmacy related items**

Nationally, 87% of all facilities with a pharmacy or supply of drugs had drugs accessible 24 hours a day. 24/7 accessibility of drugs ranged from 100% in teaching and regional hospitals and 82% in health clinics (Table 8.04A in the Appendix).

Ninety-eight percent of facilities used first-expire-first out drug supply management system and 97% of facilities had mechanisms to ensure expired drugs are not distributed.

Across all levels of the health system, 89% of health facilities were likely to have their medicines protected from moisture, heat and infestation. The hospitals were more likely to report better storage conditions than lower levels. The picture was similar for facilities reporting a functioning refrigerator for medicines that require refrigeration. All the hospitals had at least one functioning electric refrigerator compared to the lower levels. The CHPS centres were the least likely to have at least one functioning electric refrigerator (26%). The use of gas or solar operated refrigerators was low across all levels of the health system (less than 24%).

### **Stock out of some essential drugs**

Table 8.05A in the Appendix and Fig. 8.01 give information on the stock out of 5 drugs: Ergometrine, Ketamine, Atropine, oxytocin and magnesium sulphate.

#### **Ergometrine**

Nationally, 10% of facilities reported stock out of Ergometrine in the last 6 months. Out of these facilities reporting stock outs, 21% were currently experiencing stock outs, 19% experienced stock out in last 1 month, 24% in last 3 months while 35% experienced stock out in last 6 months.

#### **Ketamine**

Nationally, 2% of facilities reported stock out of Ketamine in the last 6 months. Out of these facilities reporting stock outs, 41% were currently experiencing stock outs, 6% experienced stock out in last 1 month, 18% in last 3 months while 35% experienced stock out in last 6 months.

#### **Atropine**

Nationally, 2% of facilities reported stock out of Atropine in the last 6 months. Out of these facilities reporting stock outs, 37% were currently experiencing stock outs, 7% experienced stock out in last 1 month, 15% in last 3 months while 41% experienced stock out in last 6 months.

### Oxytocin

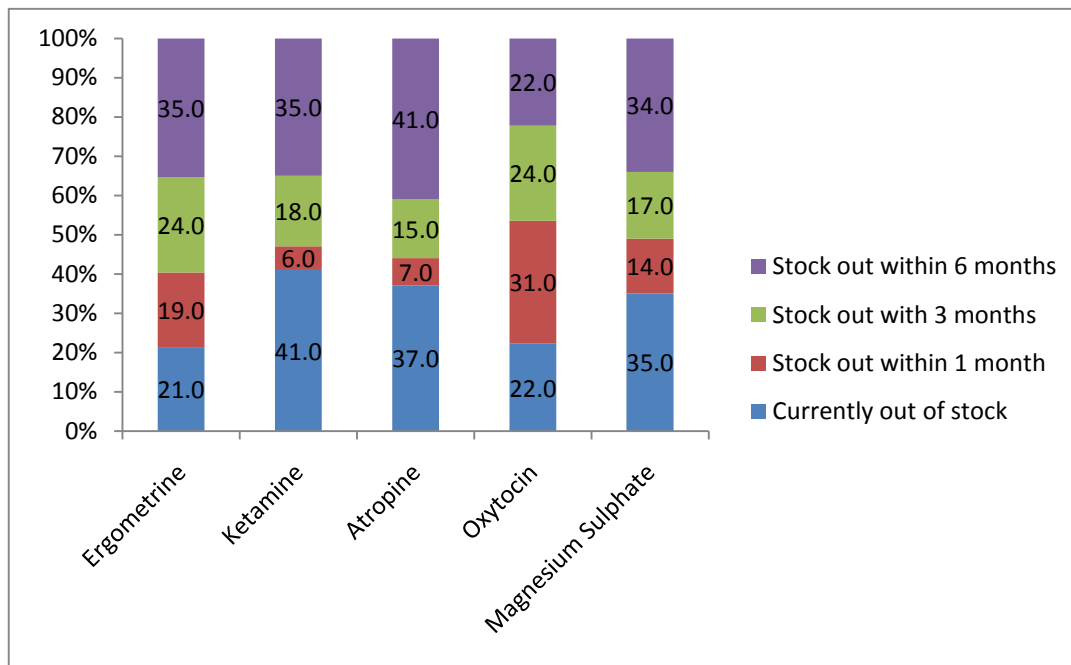
Nationally, 4% of facilities reported stock out of Oxytocin in the last 6 months. Out of these facilities reporting stock outs, 22% were currently experiencing stock outs, 31% experienced stock out in last 1 month, 24% in last 3 months while 22% experienced stock out in last 6 months.

### Magnesium Sulphate injection

Nationally, 9% of facilities reported stock out of Magnesium Sulphate in the last 6 months. Out of these facilities reporting stock outs, 35% were currently experiencing stock outs, 14% experienced stock out in last 1 month, 17% in last 3 months while 34% experienced stock out in last 6 months.

It can be deduced based on these 5 tracer drugs that although stock outs occurred, the procurement and distribution systems seem to be working relatively well.

**Fig 8.01: Percentage of facilities reporting on stock-outs of ergometrine, ketamine, atropine, oxytocin and magnesium sulphate among those with stock out of these drugs.**



## ***8.02 Availability of Essential Medicines***

Table 8.06A in the Appendix gives a summary of facilities with drugs related to signal function performance and drugs used in emergencies.

### **Availability of antibiotics**

Nationally, 99% of all facilities with a Pharmacy or supply of drugs stocked antibiotics. The least stocked were CHPS Compounds though 96% of CHPS had antibiotics. Amoxicillin was the antibiotic most commonly stocked (94% of facilities), whilst soframycin, cephalosporin sodium and cefotaxime injection for newborns were the least stocked antibiotics (<10% of facilities). The antibiotics that all the hospitals commonly have apart from amoxicillin were ceftriaxone, oral flucloxacillin for newborns, gentamicin injection, metronidazole injection and benzyl penicillin; whilst lower levels most commonly had oral flucloxacillin for newborns and gentamicin injection.

### **Availability of anticonvulsants/sedatives**

Nationally, 93% of facilities stocked anticonvulsants/sedatives. All the hospitals had anticonvulsants whilst 64% of CHPS Compounds reported anticonvulsants. Diazepam injection was the most commonly stocked sedative. Phenobarbital injection was the least stocked anticonvulsant by all facilities. Nationally, 40% of facilities stocked magnesium sulphate (50% concentration), with CHPS Compounds least likely to have it in stock (21% of CHPS) and Regional Hospitals most likely (78% of regional hospitals). One teaching hospital did not stock the 50% concentration of magnesium sulphate.

### **Availability of antihypertensives**

Nationally, 72% of all health facilities with a Pharmacy or supply of drugs stocked antihypertensives. The commonest antihypertensive stocked is Nifedipine, available in 97% of facilities. Labetolol is the least stocked antihypertensive by all facilities. In general, hospitals are more likely to stock antihypertensives compared to the lower levels from the Health centre.

### **Availability of Oxytocics/Prostaglandins**

Of all the facilities with pharmacies or a supply of drugs, 96% have oxytocics or prostaglandins in stock. All hospitals and Maternity homes stock oxytocics or prostaglandins. Methylergometrine and prostaglandin E2 (dinoprostone) are the least stocked oxytocic or prostaglandins (found in 5% and 3% of facilities, respectively). Ergometrine injection and oxytocin are the most common oxytocics likely to be found at all levels of the health service. Misoprostol is a prostaglandin which is more likely available in hospitals than in health centres and lower level facilities.

### **Availability of any drugs used in emergencies**

Nationally, 91% of all facilities with pharmacies or a supply of drugs had some drugs used in emergencies. Adrenaline and aminophylline were found in 55% of facilities, atropine in 25% of facilities and frusemide in 50% of facilities.

### **IV Fluids**

The survey looked at the availability of 7 IV Fluids namely Dextrose, Dextran, Lucoce 5%, Glucose 10%, Glucose 50%, Normal Saline and Ringer's Lactate. Nationally, some IV Fluids were found in 95% of facilities. The most commonly found IV fluids were Normal Saline and Ringer's Lactate found in 98% and 96% of facilities respectively. Dextran was the least available IV Fluid found (19%). None of the Teaching hospitals or CHPS Compounds had dextran. The rest of the IV Fluids were available in all teaching hospitals and most of the regional hospitals.

### **Antimalarials**

Nationally, antimalarials were found in 99% of facilities. The most commonly found antimalarial was Artesonate-Amodiaquine, available in 95% of facilities. The least available was Dihydroartemisinin Piperaquine, found in 14% of facilities. None of the regional hospitals had Dihydroartemisinin Piperaquine in stock.

### **Antiretroviral (ARV) drugs**

Nationally, ARVs were found in 23% of facilities surveyed. The most commonly found ARV was Nevirapine for the mother, found in 91% of facilities, while the least commonly found ARV was a combined ARV for newborns which was found in 55% of facilities.

### **Availability of contraceptives**

Table 8.02 outlines the percentage of facilities that had contraceptives and other drugs and supplies in stock on the day of the survey. Nationally, 89% of all facilities had at least one type of contraceptive in stock. All the Teaching hospitals, Regional hospitals and CHPS compounds had at least one contraceptive method in stock (CHPS compounds were better supplied than District Hospitals). Most of the facilities (90%) had combined oral contraceptives. Fewer than 40% of facilities had IUDs, implants or emergency contraceptives in stock. The Teaching hospitals were most likely to have all contraceptive methods available. Most CHPS centers (96%), Maternity homes (95%), Health clinics (91%) and District hospitals stocked the 3-month injectable contraceptives. A majority of Health centres (95%) and District Hospitals (88%) stocked combined oral contraceptives. Most regional hospitals (89%) stocked IUDs.

**Table 8.02: Percentage of facilities that had contraceptives and other drugs, by type of facility (among facilities with a pharmacy/supply of medicine)**

|   | Teaching Hospital | Regional Hospital | District (Other) Hospital | Health Centre | Health Clinic | Maternity Home | CHPS Compound | Total    |
|---|-------------------|-------------------|---------------------------|---------------|---------------|----------------|---------------|----------|
|   | (n=3)             | (n=9)             | (n=272)                   | (n=517)       | (n=158)       | (n=160)        | (n=138)       | (n=1257) |
| <b>Any contraceptives</b>                     | 100               | 100               | 73                        | 98            | 80            | 87             | 100           | 89       |
| Any combined oral contraceptives              | 100               | 78                | 88                        | 95            | 86            | 78             | 87            | 90       |
| Progestin only tablets                        | 100               | 67                | 61                        | 60            | 46            | 30             | 46            | 54       |
| Implants (Jaelle)                             | 100               | 67                | 61                        | 39            | 28            | 23             | 18            | 39       |
| any 1month injectables (Norigynon)            | 100               | 56                | 61                        | 73            | 67            | 48             | 71            | 67       |
| any 3 months injectables (Depo provera)       | 100               | 67                | 88                        | 92            | 91            | 95             | 96            | 92       |
| any IUDs                                      | 67                | 89                | 61                        | 29            | 25            | 44             | 10            | 35       |
| any male condoms                              | 100               | 67                | 80                        | 92            | 79            | 67             | 91            | 84       |
| any female condoms                            | 100               | 67                | 50                        | 47            | 46            | 37             | 33            | 47       |
| any emergency contraception                   | 100               | 56                | 44                        | 41            | 37            | 24             | 27            | 37       |
| <b>Any other drugs and supplies</b>           |                   |                   |                           |               |               |                |               |          |
| <i>vitamin K (for newborn)</i>                | 100               | 89                | 90                        | 67            | 70            | 82             | 38            | 73       |
| <i>nystatin(oral) (for newborn)</i>           | 33                | 33                | 26                        | 3             | 9             | 7              | 0             | 10       |
| <i>oral rehydration solution with Zinc</i>    | 33                | 11                | 12                        | 11            | 9             | 16             | 4             | 11       |
| <i>oral rehydration solution without Zinc</i> | 67                | 89                | 90                        | 82            | 88            | 84             | 87            | 85       |
| <i>gentian violet paint</i>                   | 33                | 44                | 65                        | 58            | 72            | 83             | 48            | 64       |
| <i>ferrous sulphate or fumarate</i>           | 100               | 89                | 97                        | 92            | 91            | 96             | 88            | 94       |
| <i>folic acid</i>                             | 100               | 100               | 100                       | 97            | 98            | 99             | 94            | 98       |
| <i>heparin</i>                                | 100               | 78                | 29                        | 2             | 4             | 4              | 0             | 10       |
| <i>magnesium trisilicate</i>                  | 100               | 78                | 93                        | 75            | 88            | 93             | 80            | 83       |
| <i>anti tetanus serum</i>                     | 67                | 44                | 70                        | 39            | 44            | 45             | 19            | 47       |
| <i>tetanus toxoid vaccine</i>                 | 100               | 56                | 91                        | 92            | 89            | 86             | 78            | 90       |
| <i>anti Rho (D)immune globulin</i>            | 67                | 44                | 16                        | 3             | 2             | 1              | 4             | 6        |
| <i>Mebendazole 500 mg</i>                     | 100               | 89                | 80                        | 79            | 79            | 72             | 83            | 79       |
| <i>Metoclopramide</i>                         | 100               | 78                | 56                        | 3             | 10            | 4              | 1             | 17       |
| <i>Nalidixic acid</i>                         | 67                | 33                | 22                        | 3             | 3             | 3              | 0             | 8        |
| <i>Miconazole Pessary</i>                     | 67                | 33                | 54                        | 18            | 21            | 30             | 7             | 28       |

### *8.03 Infrastructure, supplies and medical equipment in labour, delivery and maternity*

#### **Neonatal resuscitation pack**

Table 8.07A in the Appendix gives the percentage of facilities with basic and emergency newborn supplies and equipment in the maternity area. The neonatal resuscitation pack consists of very essential basic equipment that ensures adequate resuscitation and survival of the newborn. These include: mucus extractor, infant face masks, ambu (ventilator) bags, suction catheter, infant laryngoscope, endotracheal tubes, disposable uncuffed tracheal tubes, suction aspirator, and mucus trap for suction. The mucus extractor was the commonest equipment found in the resuscitation pack of health facilities (81% of facilities had it), whilst the infant laryngoscope and the disposable uncuffed endotracheal tubes were the least likely found (12% of facilities). All the teaching hospitals had full complement of the resuscitation pack; however, neonatal resuscitation is a basic EmONC signal function expected to be available at all facilities offering delivery services, including hospitals and lower level facilities. Table 8.07A indicates that many facilities below the teaching hospitals are lacking important resuscitation equipment. For example, the ambu bags were usually used with the face masks for resuscitation, however, apart from the teaching hospitals, not all facilities have ambu bag with accompanying face mask. This renders the ambu bags inefficient for resuscitation.

#### **Supplies and equipment for newborn**

Other essential newborn supplies and equipment, as specified in Table 8.07A, are also important in ensuring newborn survival. Baby weighing scales were found in most health facilities (95%), followed by a newborn resuscitation table (61%). The remaining essential equipment like incubators, radiant warmers and pulse oximeters are found in fewer than one-in-ten health facilities. Surprisingly, none of the teaching hospitals had pulse oximeters in the labour and delivery or maternity units.



### **Basic diagnostic and resuscitation equipment and supplies for other procedures in the maternity area**

Table 8.08A in the Appendix gives a list of basic diagnostic and resuscitation equipment and supplies for other procedures in the maternity. Stethoscopes, blood pressure apparatus and fetal stethoscopes were present in more than 85% of health facilities. Filled oxygen cylinder (with cylinder carrier and valve key), an essential piece of equipment for resuscitation of mother and newborns, was available in less than 40% of lower level facilities surveyed. Availability of the oxygen cylinder was better among hospitals. Basic equipment like clinical oral and rectal thermometers were found in just 37% and 9% of facilities, respectively. None of the teaching hospitals had any of these thermometers and no regional hospital had rectal thermometers. In general, the lower level facilities were more likely to have these thermometers than the hospitals. Only 23% of facilities had ultrasound diagnostic equipment. Ultrasound equipment is found in 89% of Regional hospitals, 80% of district (other) hospitals and one of three teaching hospitals. Only 10% of maternities had ultrasound equipment.

### **Guidelines and protocols**

Nationally, out of the 1159 facilities surveyed that offer delivery services, 47% had safe motherhood protocols, 40% had PMTCT (maternal and newborn dosing) guidelines, and 52% had Infection prevention of HIV/AIDS (Universal precautions) guidelines. Only 18% had comprehensive abortion care guidelines. 64% had family planning protocols as posters and 41% had job aids for maternal and newborn care posted. It is important to note that these services and practices are expected to be available in all facilities offering delivery services, with the possible exception of comprehensive abortion care. The highest levels of the health system (Teaching and Regional Hospitals) had most of the protocols and guidelines available; however, outside of family planning posters, fewer than 60% of district (other) hospitals and lower level facilities had the guidelines or protocols available in the maternity ward (Table 8.03).

**Table 8.03: Percentage of facilities with indicated guidelines and protocols in the maternity ward, by type of facility (among facilities that do deliveries)**

|   | Teaching Hosp | Regional Hosp | District (Other) Hosp | Health centre | Health Clinic | Maternity Home | CHPS compound | Total    |
|---|---------------|---------------|-----------------------|---------------|---------------|----------------|---------------|----------|
|   | (n=3)         | (n=9)         | (n=269)               | (n=509)       | (n=136)       | (n=164)        | (n=69)        | (n=1159) |
|   | %             | %             | %                     | %             | %             | %              | %             | %        |
| Safe motherhood   | 67            | 78            | 48                    | 46            | 44            | 55             | 27            | 47       |
| PMTCT(maternal and newborn dosing)  | 100           | 78            | 50                    | 42            | 32            | 26             | 31            | 40       |
| Infection prevention of HIV/AIDS (universal precautions)  | 67            | 67            | 58                    | 51            | 46            | 56             | 37            | 52       |
| Comprehensive abortion care guidelines  | 67            | 78            | 23                    | 15            | 17            | 17             | 14            | 18       |
| Family planning (posters)   | 100           | 78            | 46                    | 71            | 52            | 75             | 67            | 64       |
| Presence of job aids for maternal and neonatal care (posters)   | 67            | 78            | 45                    | 40            | 38            | 45             | 29            | 41       |
| <i>Note: Facilities that did not answer questions about guidelines are excluded from percentage calculation. Missing values &lt;2% of any subgroup.</i> |               |               |                       |               |               |                |               |          |

#### **8.04 Availability of operating theatre and equipment**

Table 8.09A in the Appendix looks at the percent of facilities with an operating theatre (OT) and the availability of supplies and equipment. A total of 90% of all hospitals have operating theatres (i.e. all Regional and Teaching hospitals and 90% of District hospitals). All Teaching hospitals, 56% of Regional hospitals and 14% of District hospitals had a separate OT for obstetric patients. The very few Maternity homes and Health clinics with an OT did not have separate OTs for obstetric patients.

In most facilities with operating theatres, medicine supplies were ordered whenever stocks reach re-order levels (40% of facilities) or the same time each week/month/quarter (36%).

Over 90% of all hospitals with operating theatres had the full complement of basic theatre items consisting of operating table, operating light, surgical drapes, needles and syringes. The Teaching hospitals were the most likely to have the full complement of basic items, whilst the

Health centres with OTs were the least likely to have all the basic items. Almost all hospitals had the full complement of obstetric laparotomy / caesarean delivery packs, followed by about three-quarters of maternity homes, two-thirds of Health clinics and one of the three health center OTs.

### **Facilities with operating theatre that have anaesthesia equipment and supplies**

The percentage of facilities with an operating theatre that had anaesthesia equipment and supplies is shown in Table 8.10A. Overall, an average of 82% of all facilities with operating theatres had the full complement of anaesthetic equipment [data not shown]. The hospitals with operating theatres were more likely to have the full complement of anesthetic equipment than the health centres or maternity homes with operating theatres (about 84% versus 43%). Of all the items in the Anesthetic equipment pack, face masks were the most common equipment found (97%). The foot operated suction apparatus was the least likely to be found in the anesthetic equipment pack. Craniotomy is not commonly practiced in Ghana as evidenced by the low availability of this equipment at all levels of the health system (17%).

### ***8.05 Availability of laboratory equipment and supplies for blood transfusion***

Tables 8.11A and 8.12A in the Appendix present the percentage of facilities with laboratory equipment and supplies. Out of all the facilities surveyed, 43% of them had laboratories. The hospitals were the most likely to have laboratories compared to lower level facilities . Amongst the facilities with laboratories, about 77% of them had a set of laboratory guidelines. The hospitals were more likely to have guidelines than the lower level facilities.

Since haemorrhage with its attendant anaemia is one of the major causes of maternal mortality in Ghana, one would expect to see high numbers of basic hemoglobin testing equipment across all levels of the health service, especially the lower levels, to ensure early detection of anaemia and the institution of prompt interventions. However, few health facilities have haemoglobinometers (45%), spectrophotometers (51%) and microhaematocrit centrifuges (37%). Less than two-thirds of all the hospitals had this life saving diagnostic equipment available.

### **Equipment and supplies for Blood Transfusion**

Table 8.12A presents the percentage of facilities with a laboratory that have equipment and supplies for blood transfusion. Out of all the equipment for blood transfusion, the blood bank refrigerators (37%) were the least common. All the Regional and Teaching hospitals had blood bank refrigerators, whilst 62% of district hospitals had a blood bank refrigerator. An average of 8% of health centres and maternity homes had a blood bank refrigerator. Blood collection bags were also very uncommon in most of the health facilities surveyed (38% of facilities had them).

Of all the blood screening tests, the Hepatitis C is the least common across the levels of the health sector (51% of facilities).

### 8.06 Universal precautions and infection prevention

#### Materials for infection prevention

Materials for infection prevention are shown in Table 8.04. The majority (over 90%) of health facilities at all levels had soap, Antiseptics, Surgical and Examination gloves, Aprons, decontamination container, bleach or bleaching powder, a regular trash bin and puncture proof sharps container. Disinfectants (Chlorhexidine and ethanol), goggles and mayo stands were the least likely to be available at all levels of the health system. Surprisingly, single use towels were likely not available at 2 of the 3 teaching hospitals.

**Table 8.04: Percentage of facilities with the indicated materials for infection prevention in the maternity area, by type of facility (among facilities that do deliveries).**

|   | Teaching Hospital | Regional Hospital | District Hospital | Health Centre | Health Clinic | Maternity Home | CHPS Compound | Total    |
|---|-------------------|-------------------|-------------------|---------------|---------------|----------------|---------------|----------|
|   | (n=3)             | (n=9)             | (n=269)           | (n=509)       | (n=136)       | (n=164)        | (n=69)        | (n=1159) |
|   | %                 | %                 | %                 | %             | %             | %              | %             | %        |
| <b>Basic Items</b>                        |                   |                   |                   |               |               |                |               |          |
| Soap                                      | 100               | 100               | 99                | 98            | 99            | 99             | 96            | 99       |
| Antiseptics                               | 100               | 100               | 98                | 93            | 98            | 99             | 88            | 96       |
| Surgical gloves                           | 100               | 100               | 100               | 94            | 96            | 99             | 97            | 96       |
| Examination gloves                        | 100               | 100               | 100               | 95            | 96            | 99             | 96            | 97       |
| Heavy duty gloves                         | 67                | 89                | 82                | 63            | 71            | 74             | 51            | 69       |
| Apron                                     | 67                | 100               | 99                | 90            | 93            | 96             | 75            | 93       |
| Goggles                                   | 33                | 89                | 56                | 26            | 29            | 51             | 13            | 37       |
| Boots                                     | 67                | 100               | 90                | 67            | 63            | 70             | 33            | 70       |
| Decontamination                           | 100               | 100               | 95                | 94            | 92            | 94             | 72            | 93       |
| Bleach or bleaching powder                | 100               | 100               | 97                | 96            | 99            | 97             | 90            | 97       |
| Veronica bucket                           | 67                | 89                | 66                | 94            | 90            | 91             | 97            | 87       |
| Prepared disinfectant solution            | 100               | 100               | 86                | 69            | 68            | 75             | 59            | 73       |
| Regular trash bin                         | 67                | 100               | 95                | 90            | 88            | 88             | 84            | 90       |
| Covered contaminated waste bin with pedal | 67                | 78                | 74                | 63            | 69            | 75             | 39            | 66       |
| Puncture proof sharps container           | 100               | 100               | 93                | 94            | 93            | 90             | 99            | 94       |
| Mayo stand                                | 67                | 100               | 54                | 31            | 28            | 32             | 19            | 36       |
| Single use towels has                     | 33                | 100               | 95                | 87            | 86            | 90             | 70            | 88       |
| Chlorhexidine                             | 67                | 56                | 37                | 20            | 21            | 30             | 17            | 26       |

|  |    |    |    |    |    |    |    |    |
|--|----|----|----|----|----|----|----|----|
| Ethanol  | 33 | 67 | 36 | 21 | 21 | 21 | 12 | 24 |
| <i>Note: Facilities that did not answer question were excluded from percentage calculation (&lt;2% of any subgroup).</i> |    |    |    |    |    |    |    |    |

### ***Autoclave room equipment***

The percentage of facilities with equipment for sterilization and incineration is shown in Table 8.13A. Very few (21%) of the facilities surveyed had a separate autoclave room; the CHPS centres were the least likely to have such a room and the teaching hospitals the most likely. Apart from the teaching hospitals, the availability of an autoclave (with temperature and pressure gauges), hot air sterilizer (dry oven), and steam sterilizer were especially low among non-hospitals. Availability of a steam instrument sterilizer/pressure cooker (electric) and one that is kerosene heated were extremely low (just over 20%) across all levels of the health service. Availability of Incinerators was generally low (35%) across all levels; however, all regional hospitals had incinerators.

# CHAPTER NINE Case Reviews

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## *9.01 Partograph Review*

Partograph reviews were performed to assess the level and quality of completion of partographs in the management of labour in the health facilities. The partograph has been proven to be a very useful tool in the prevention of prolonged labour and is recommended in Ghana for the management of labour of all women who report at the health facility early in the first stage of labour (i.e. with cervical dilatation of less than 8cm) The data collectors in this EmONC needs assessment survey were instructed to select three recent partographs that had been filled out in the last 12 months for the purpose of the review. Included partographs must belong to women who met the following: women at term, at less than 8 cm dilatation at first exam, with vertex presentation, with fetal heart present at first exam and without known obstetric complications (including multiple gestations).

### **Use of partograph**

Out of the 1159 facilities that performed deliveries in the previous 12 months, 1154 facilities are included in this analysis. Five facilities were excluded from this analysis because of a significant amount of missing information. The excluded facilities were 1 hospital, 1 health centre and 3 CHPS compounds or health clinics. Some facilities provided fewer than 3 partographs for review, therefore a total of 2092 partographs were analyzed (out of a possible maximum of 3462).

Seventy-three percent (838) of the 1154 facilities used partographs for the management of labour; 80% of these 838 facilities used the modified WHO partograph while 19% used the composite WHO partograph. Hospitals were more likely than health centers and maternities to use a partograph (83% compared to 73% and 67%, respectively) (Table 9.01). Only 36% of the facilities where the WHO partograph was used had an existing written management protocol for the use of the partograph. This protocol could be in the form of a written booklet available to all birth attendants in the facility or a poster that is prominently displayed in the labour ward. The absence of a protocol on partograph use in the majority of these facilities suggests that staff is left on their own to decide how to use the partograph which can easily result in the inappropriate management of several labour cases. The lack of use of the partograph in as many as 27% of the facilities that performed deliveries raises issues of concern in the management of labour of Ghanaian women.

**Table 9.01: Use of the partograph among facilities that performed deliveries, by type of facility**

|   | All facilities <sup>3</sup> | Hospitals | Health Centers | Maternities |
|---|-----------------------------|-----------|----------------|-------------|
|   | %                           | %         | %              | %           |
|   | (n=1154)                    | (n=280)   | (n=508)        | (n=164)     |
| Used partograph   | 73                          | 83        | 73             | 67          |
| Of those that used partograph <sup>1</sup> :  | (n=838)                     | (n=232)   | (n=371)        | (n=110)     |
| used modified WHO partograph  | 80                          | 67        | 86             | 74          |
| used simplified WHO partograph  | 10                          | 10        | 12             | 10          |
| used composite WHO partograph   | 19                          | 27        | 16             | 21          |
| used other type   | 1                           | 2         | 0              | 0           |
| Of those using WHO partograph <sup>2</sup> :  | (n=792)                     | (n=219)   | (n=352)        | (n=102)     |
| had management protocol   | 36                          | 38        | 34             | 35          |
| <i>Note: 5 facilities that provided delivery services were excluded from this table and the partograph analysis due to missing information (1 hospital, 1 health center, 3 CHPS compounds or health clinics).</i>   |                             |           |                |             |
| <i>1. Multiple responses allowed</i>  |                             |           |                |             |
| <i>2. 28 facilities that used WHO partographs were excluded from the calculation of these percentages due to missing information regarding management protocols (7 hospitals, 12 health centers, and 6 maternities. The remaining 3 missing were CHPS compounds).</i> |                             |           |                |             |
| <i>3. 'All facilities' include health clinics and CHPS compounds in addition to hospitals, health centers and maternities.</i>  |                             |           |                |             |

### **Quality of use of the WHO partograph**

Of the 2092 partographs which were reviewed, 88% had the first dilatation correctly charted and so met the inclusion criteria for further analysis of quality of use. The first entry of cervical dilatation was more likely to be correct if labor was monitored in a hospital (Table 9.02). In 95% of cases, women delivered before the action line on the partograph. This further shows the usefulness of the partograph in preventing prolonged labour. The fact that 26% of the partographs in health centres and 22% of those in maternity homes show deliveries occurring between the alert and action lines is of concern because the standard recommendation is that women should be referred to a hospital as soon as the graph of their labour progress enters the area between the alert and action lines. Of even greater concern, is that some women delivered beyond the action line in health centres and maternity homes.

**Table 9.02: Partograph assessment by progress of labor and augmentation, by type of facility**

|  | All reviewed partographs <sup>4</sup> | Partographs reviewed in Hospitals | Partographs reviewed in Health Centres | Partographs reviewed in Maternities |
|--|---------------------------------------|-----------------------------------|--|-------------------------------------|
|  | %                                     | %                                 | %                                      | %                                   |
|  | (n=2092)                              | (n=607)                           | (n=942)                                | (n=270)                             |
| First dilatation charted correctly on alert line   | 88                                    | 92                                | 87                                     | 79                                  |
| Among those charted correctly, delivered <sup>1</sup> :  | (n=1807)                              | (n=543)                           | (n=817)                                | (n=209)                             |
| on alert line  | 70                                    | 70                                | 70                                     | 71                                  |
| between alert and action line  | 25                                    | 23                                | 26                                     | 22                                  |
| on or beyond action line   | 5                                     | 7                                 | 4                                      | 8                                   |
| Among those charted correctly <sup>2</sup> :   | (n=1821)                              | (n=555)                           | (n=816)                                | (n=212)                             |
| used augmentation  | 10                                    | 16                                | 7                                      | 10                                  |
| Among those who used augmentation <sup>3</sup> :   | (n=167)                               | (n=78)                            | (n=60)                                 | (n=20)                              |
| used on alert line   | 47                                    | 47                                | 48                                     | 30                                  |
| used between alert and action lines  | 41                                    | 40                                | 43                                     | 50                                  |
| used on or beyond action line  | 12                                    | 13                                | 8                                      | 20                                  |
| 1. 25 partographs that were charted correctly were excluded due to missing information regarding delivery (14 for women in hospitals, 6 in health centers, 4 in maternities, 1 in a health clinic).                |                                       |                                   |  |                                     |
| 2. 11 partographs that were charted correctly were excluded due to missing information regarding augmentation (2 partographs for women in hospitals, 7 in health centers, 1 in a maternity, 1 in a health clinic). |                                       |                                   |  |                                     |
| 3. 12 partographs for deliveries that used augmentation were excluded due to missing information regarding when augmentation was used (11 partographs for women in hospitals, 1 in a maternity).                   |                                       |                                   |  |                                     |
| 4. 'All reviewed partographs' include partographs reviewed in health clinics and CHPS compounds in addition to hospitals, health centers and maternities.  |                                       |                                   |  |                                     |

Augmentation of labour is recommended only in places with facilities where cesarean delivery is possible. In the light of this recommendation, the use of augmentation in 10% of cases seen at maternity homes and 7% of those seen at health centres raises issues about the management of labour in these facilities, unless some of them were completed in facilities that performed caesarean sections. The timing of the use of augmentation in all the facilities highlights the problem of 'over-medicalization' of the process of labour. As many as 88% of the cases who received augmentation did so before the action line; this is contrary to standard recommendations and guidelines.



The partograph has recommendations for the frequency with which examinations are performed on women in labour. Assessment showed that in over 90% of cases fetal heart rates were monitored at least hourly, contractions were assessed at least hourly and the descent of the fetal head was checked and recorded between first exam and delivery. However, the state of the membranes was recorded in only 54% of cases.

Even though it is recommended that the temperature of the woman in labour be measured every two hours, 12% of women went through labour without a single temperature measurement. Almost all women (97%) had at least one blood pressure measurement during labour with over 50% of women having their blood pressure measured once in four hours. Measurement of maternal pulse, which is recommended to be done half hourly, was performed less frequently than recommended. All women had at least one vaginal examination in labour with 48% having more than 3 vaginal examinations. Analysis of the data collected suggests that vaginal examinations were carried out more frequently than they should be. (Table 9.03)

**Table 9.03: Percentage distribution of women with partographs according to how many times key measurements were taken and recorded, by hours between first exam and delivery**

|  | All partographs | Hours between first exam and delivery |         |         |         |
|--|-----------------|---------------------------------------|---------|---------|---------|
|  |                 | 0-2.9                                 | 3-5.9   | 6-8.9   | 9+      |
|  | %               | %                                     | %       | %       | %       |
|  | (n=1741)        | (n=274)                               | (n=945) | (n=398) | (n=124) |
| Temperature (standard: every 2 hours)      |                 |                                       |         |         |         |
| 0  | 12              | 15                                    | 11      | 12      | 10      |
| 1  | 44              | 77                                    | 46      | 23      | 23      |
| 2  | 36              | 7                                     | 39      | 49      | 30      |
| 3+   | 9               | 1                                     | 4       | 16      | 37      |
| Blood pressure (standard: every 4 hours)   |                 |                                       |         |         |         |
| 0  | 3               | 3                                     | 2       | 4       | 1       |
| 1  | 37              | 74                                    | 40      | 12      | 15      |
| 2  | 45              | 21                                    | 48      | 56      | 31      |
| 3+   | 16              | 2                                     | 10      | 27      | 53      |
| Maternal pulse (standard: every half hour) |                 |                                       |         |         |         |
| 0  | 9               | 12                                    | 8       | 7       | 9       |
| 1  | 11              | 20                                    | 11      | 6       | 9       |
| 2  | 7               | 11                                    | 7       | 7       | 1       |
| 3  | 6               | 16                                    | 5       | 4       | 4       |
| 4+   | 67              | 42                                    | 68      | 76      | 77      |
| Vaginal exams (standard: every 4 hours)    |                 |                                       |         |         |         |

|  |    |    |    |    |    |
|--|----|----|----|----|----|
| 0  | 0  | 0  | 0  | 0  | 0  |
| 1  | 4  | 8  | 4  | 1  | 2  |
| 2  | 48 | 84 | 58 | 10 | 16 |
| 3+   | 48 | 8  | 38 | 88 | 82 |
|  |    |    |    |    |    |
| Fetal heart rate observed at least hourly  | 94 | 92 | 95 | 94 | 89 |
|  |    |    |    |    |    |
| Contractions assessed at least hourly  | 96 | 93 | 97 | 97 | 94 |
|  |    |    |    |    |    |
| State of the membranes recorded  | 54 | 69 | 73 | 72 | 76 |
|  |    |    |    |    |    |
| Descent checked and recorded between first exam and delivery   | 95 | 95 | 95 | 95 | 98 |
| <i>Note: 91 partographs were excluded from all calculations due to missing information regarding hours between first exam and delivery (21 partographs for women in hospitals, 34 in health centers excluded, 17 in maternities, 19 in health clinics and CHPS).</i> |    |    |    |    |    |
| <i>Note: Up to 3.5% of partographs were excluded from each row due to missing information.</i>   |    |    |    |    |    |

### **Fetal outcome**

The majority (73%) of the babies delivered were live births with normal APGAR scores. Ten percent of babies were live but in distress, 4% were live births with no APGAR score indicated and 12% of partographs reviewed had no information on the fetal outcome. There was no stillbirth recorded in the analyzed partographs [data not shown].

### **9.02 Caesarean Review**

The objective of the caesarean delivery review was to understand the principal clinical indications or causes for cesarean sections and to evaluate aspects of the quality of record keeping and, to the extent possible, the quality of the procedure. Data collectors were asked to identify the three most recent cesarean deliveries performed in the last 12 months where the woman and newborn had already been discharged. Data collectors retrieved patient records for these women and completed the caesarean reviews based on information contained in the records.

Two hundred and thirty six facilities provided patient records for women who had received a caesarean delivery. Almost all of the facilities were hospitals, though two maternities provided caesareans for review, and virtually all facilities provided the 3 cases requested. Among facilities with cases, 45% came from the public sector, 35% from the private, for-profit sector and the remainder from NGO/religious facilities (Table 9.04).

Just under one third of the facilities performing caesarean sections were comprehensive EmONC facilities (i.e. performed all 9 of the signal functions in the last 3 months) and 45% were

partially functioning, i.e. performed 7 or 8 signal functions (if hospitals) or 5 or 6 signal functions, if maternities. Two facilities were classified as Basic + CS (caesarean delivery). These facilities provided 8 signal functions and were missing only blood transfusion.

**Table 9.04: Percent distribution of facilities where caesarean delivery reviews were performed according to number of cases reviewed, type of facility, sector and EmONC classification (n=236)**

|                                | n   | %  |
|--------------------------------|-----|----|
| Facilities that reviewed:      |     |    |
| 1 chart                        | 4   | 2  |
| 2 charts                       | 3   | 1  |
| 3 charts                       | 229 | 97 |
|                                |     |    |
| Type of facility               |     |    |
| Hospital                       | 234 | 99 |
| Maternity                      | 2   | 1  |
|                                |     |    |
| Sector                         |     |    |
| Public                         | 106 | 45 |
| Private (for profit)           | 82  | 35 |
| NGO/Religious mission          | 48  | 20 |
|                                |     |    |
| EmONC classification           |     |    |
| Comprehensive                  | 74  | 31 |
| Basic + caesarean delivery     | 2   | 1  |
| Partially functioning as EmONC | 107 | 45 |
| Non-EmONC                      | 53  | 23 |

In these 236 facilities, 697 cesarean deliveries were reviewed. The mean age of women whose caesarean was reviewed was 29 years, and the average parity was 2. However, 20% of women did not have information on parity recorded in their records. Women from urban and rural residences were both well represented in these case reviews. The majority of women was not referred from another health facility and presumably came directly to the facility on their own (Table 9.05).

**Table 9.05: Percent distribution of women whose caesarean deliveries were reviewed according to age, parity, residence and referral status (n=697)**

| Characteristics  | n   | %  |
|--|-----|----|
| <b>Age (in years)</b>  |     |    |
| <20  | 55  | 8  |
| 20-24  | 118 | 17 |
| 25-29  | 185 | 27 |
| 30-34  | 184 | 26 |
| 35-39  | 114 | 16 |
| ≥40  | 38  | 6  |
| Unknown  | 3   | 0  |
|  |     |    |
|  |     |    |
|  |     |    |
| <b>Parity</b>  |     |    |
| 0  | 157 | 23 |
| 1  | 130 | 19 |
| 2-3  | 180 | 26 |
| 4-5  | 62  | 9  |
| ≥ 6  | 32  | 5  |
| Unknown  | 136 | 20 |
|  |     |    |
|  |     |    |
|  |     |    |
| <b>Residence of woman</b>  |     |    |
| Urban  | 363 | 52 |
| Rural  | 305 | 44 |
| Unknown  | 29  | 4  |
|  |     |    |
| <b>Referred from another facility</b>  |     |    |
| Yes  | 119 | 17 |
| No   | 526 | 76 |
| Unknown  | 52  | 7  |
| <i>1. Cases where age or parity was unknown were not included in the averages.</i> |     |    |

Table 9.06 shows that three-fourths of the indications for caesareans were related to maternal complications and the remainder related to complications affecting the fetus. Documentation of indications was reasonably complete – only 2% of cases did not have an indication documented in the patient’s chart. The most common indication for caesarean delivery across all sectors was CPD/ prolonged labor, ruptured uterus and previous scar or tear. In the private for-profit sector, previous scar or tear was the indication for more than one quarter of caesareans reviewed, whereas this was the indication for 18% or less in other sectors.

Less than 1/3 of caesareans were classified as elective in public and non-profit facilities; however, in the private for-profit facilities, half of the cesareans reviewed were elective. Reporting on whether cesareans were elective or emergency was rather poor, with 10% of all cases missing information.

Three-fourths of the cases reviewed were performed under spinal/epidural anesthesia, ranging from 85% in the private for profit sector to 65% in the public sector. General anaesthesia was used in 20% of the cases. In private facilities, 75% of cesarean deliveries were performed by obstetrician/gynecologists, whereas in public and non-profit facilities general practitioners performed the majority of caesareans.

In private for-profit facilities, partographs were used in fewer than 1 in 5 emergency caesareans. For approximately 20% of all emergency caesareans data collectors were not able to determine whether a partograph was used.

**Table 9.06: Percent distribution of women whose caesarean deliveries were reviewed according to the indication for surgery, type of caesarean, type of anesthesia, type of clinician, and use of partograph among emergency caesareans, by sector**

|   | All cases | Cases in public sector | Cases in private for-profit | Cases in NGO/Religious |
|---|-----------|------------------------|-----------------------------|------------------------|
|   | %         | %                      | %                           | %                      |
| <i>Among all women whose caesareans were reviewed</i> | (n=697)   | (n=315)                | (n=239)                     | (n=143)                |
| Maternal Indications                                  | 74        | 77                     | 72                          | 71                     |
| CPD/prolonged labor/ruptured uterus                   | 33        | 38                     | 23                          | 38                     |
| Previous scar/4 <sup>th</sup> degree tear             | 20        | 18                     | 27                          | 13                     |
| PE/Eclampsia  | 8         | 9                      | 8                           | 6                      |
| Placenta previa /abruptio/APH                         | 5         | 5                      | 4                           | 5                      |
| Failed induction/AVD                                  | 3         | 2                      | 5                           | 3                      |
| Other (elderly primip, BTL, PROM, fibroids, etc)      | 5         | 4                      | 5                           | 6                      |
| Fetal Indications                                     | 24        | 22                     | 24                          | 29                     |
| Fetal distress  | 10        | 9                      | 9                           | 15                     |
| Breech with footling/malpresentation                  | 9         | 8                      | 10                          | 10                     |
| Multiple gestation                                    | 2         | 1                      | 3                           | 2                      |
| Cord prolapse   | 1         | 3                      | 0                           | 1                      |
| Post term   | 1         | 1                      | 2                           | 1                      |
| No information  | 2         | 1                      | 5                           | 1                      |
| Type of caesarean delivery                            |           |                        |                             |                        |
| Emergency   | 59        | 66                     | 40                          | 75                     |
| Elective  | 31        | 22                     | 51                          | 19                     |
| No information  | 10        | 12                     | 9                           | 6                      |

|  |         |         |        |         |
|--|---------|---------|--------|---------|
| Type of anesthesia   |         |         |        |         |
| Spinal/epidural  | 75      | 65      | 85     | 78      |
| General with intubation  | 20      | 31      | 11     | 9       |
| Ketamine   | 4       | 3       | 1      | 9       |
| No information   | 1       | 0       | 2      | 2       |
| Type of clinician  |         |         |        |         |
| Obstetrician/gynecologist  | 45      | 32      | 75     | 22      |
| General practitioner   | 41      | 51      | 18     | 58      |
| General surgeon  | 13      | 16      | 5      | 18      |
| No information   | 2       | 1       | 2      | 2       |
| <i>Among women whose caesarean was an emergency</i>  | (n=411) | (n=209) | (n=95) | (n=107) |
| Partograph used  | 28      | 32      | 19     | 28      |
| Partograph not used  | 51      | 46      | 59     | 54      |
| No information   | 21      | 23      | 22     | 18      |
| <i>Note : APH is antepartum hemorrhage; BTL is bilateral tubal ligation; PROM is premature rupture of membranes.</i> |         |         |        |         |

Whether a caesarean was an emergency or an elective varied by indication. High rates of emergency caesareans were found among women with failed inductions, severe pre-eclampsia or eclampsia, CPD or APH. High elective rates were found among women with a previous scar/4<sup>th</sup> degree tear or in the group of “other” women composed of older primigravidae, women scheduled for tubal ligation, and others [data not shown].

Table 9.01A in the Appendix examines the differences by sector in the time lapse between diagnosis and surgery and reasons for delay among cesareans where the lapse was greater than 30 minutes. Unfortunately, information on time of diagnosis and time of surgery were missing in almost half of all cases. Of notable exception, religious/NGO facilities were more likely than facilities in other sectors to record this information (only 27% were missing this information in religious/NGO facilities compared with 48% and 52% in public and for-profit facilities, respectively). . Reasons for a delay between the decision to operate and the surgery apparently are not systematically documented; in 71% of the cases this information was not found in the patient’s record.

Table 9.02A in the Appendix shows that the average time a woman spendt in hospital after a caesarean delivery was 5.6 days. This variedmore according to presence of infection and indication than it did by type of cesarean. If a wound was infected, the woman remained in the facility for almost 9 days (11 days if she was in a private facility and 6.5 days if she was in an

NGO/religious facility). Women with pre-eclampsia/eclampsia or malpresentation remained hospitalized longer than women with other complications.

Table 9.03A in the Appendix shows that in 3% of cases the surgical wound became infected (n=21). Two-thirds of these women received prophylactic antibiotics [data not shown]. This rate is similar to the prophylactic antibiotic use in all cases (69%). However, again it is important to note the substantial percentage of cases that did not record whether the wound became infected (18% of all cases were missing this information).

Just over 10% of women whose caesareans were reviewed received permanent contraception (tubal ligation) during the surgery. In the vast majority of cases reviewed (98%), the mother survived the surgery. Similarly, most newborns survived the surgery (94%) [data not shown]. Recording of presence of meconium and presence of fetal heart rate prior to surgery was poor [data not shown].

### **9.03 Maternal Death Review**

Data collectors were asked to identify maternal deaths that occurred over the previous 12 months from facility registers (Table 9.07). A maternal death is defined as the death of a woman during pregnancy or within 42 days of the completion of the pregnancy from any cause related to or aggravated by the pregnancy or its management. For the three most recent deaths, data collectors asked for clinical records such as the patient chart, partograph and any other information that might provide information about the factors contributing to the institutional maternal death.

A total of 142 facilities provided records for at least one maternal death and 322 death reviews were completed (not all facilities provided records for three deaths either because they did not have three deaths at that facility or because they were unable to locate the patient records). Ninety-six percent of facilities that reported at least one maternal death over the previous 12 months in the Facility Case Summary (Module 4) completed a maternal death review (data not shown). Therefore, the reviews included here should be considered a good representation of all facilities that treated a woman who died of direct or indirect causes.

**Table 9.07: Number of facilities where maternal deaths were reviewed and number of maternal deaths reviewed, by facility type**

|   | Total | Hospitals | Health Centres | Health Clinic |
|---|-------|-----------|----------------|---------------|
|   | n     | n         | n              | n             |
| Number of health facilities where maternal death was reviewed | 142   | 138       | 3              | 1             |

|                                 |     |     |   |   |
|---------------------------------|-----|-----|---|---|
| Total number of deaths reviewed | 322 | 318 | 3 | 1 |
|---------------------------------|-----|-----|---|---|

All but 4 of the maternal deaths occurred at hospitals (3 occurred at health centers and 1 at a health clinic, all due to hemorrhage) (Table 9.07), 66% of deaths reviewed were due to direct obstetric causes, 15% were due to indirect causes and almost 1 in 5 had no cause of death recorded in the records (Table 9.08). The most common causes were severe pre-eclampsia/eclampsia and postpartum hemorrhage, both accounted for 17% of maternal deaths reviewed)). This is not very different from what was found in the Facility Case Summary, where 17% of maternal deaths were due to severe pre-eclampsia/eclampsia and 13% due to postpartum hemorrhage (Table 3.15).

**Table 9.08: Numeric and percent distribution of women whose deaths were reviewed according to primary cause of death**

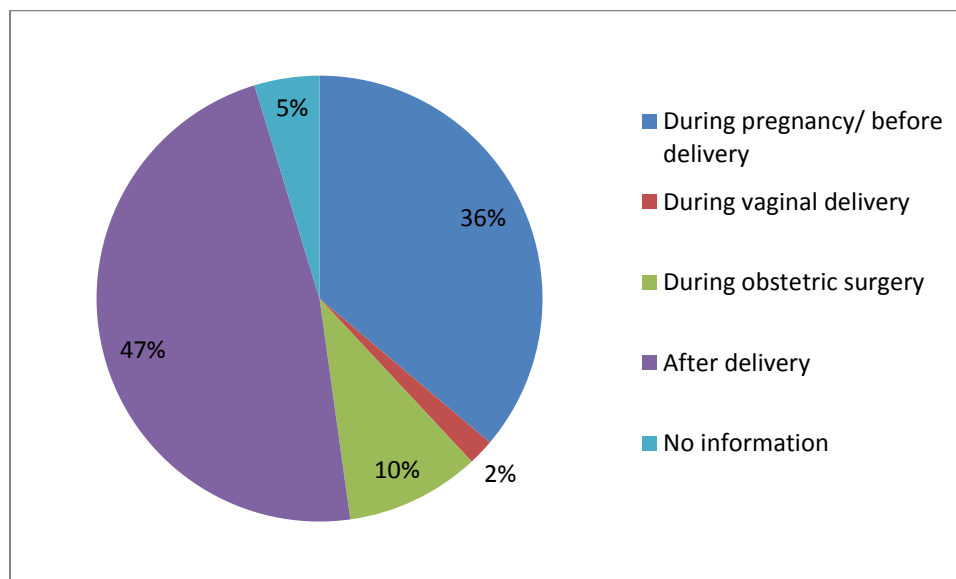
|                                | (n=322) |           |
|--------------------------------|---------|-----------|
|                                | n       | %         |
| Direct causes <sup>2</sup>     | 210     | <b>66</b> |
| Antepartum hemorrhage          | 14      | 4         |
| Postpartum hemorrhage          | 53      | 16        |
| Hemorrhage (undetermined time) | 9       | 3         |
| Retained placenta              | 6       | 2         |
| Prolonged/obstructed labor     | 2       | 1         |
| Ruptured uterus                | 12      | 4         |
| Postpartum sepsis              | 11      | 3         |
| Severe pre-eclampsia/eclampsia | 54      | 17        |
| Abortion complications         | 27      | 8         |
| Ectopic pregnancy              | 5       | 2         |
| Embolism                       | 9       | 3         |
| Other <sup>3</sup>             | 12      | 4         |
| Indirect causes                | 47      | <b>15</b> |
| Malaria                        | 15      | 5         |
| HIV/AIDS-related               | 6       | 2         |
| Severe anemia                  | 5       | 2         |
| Hepatitis                      | 2       | 1         |
| Sickle-cell crises             | 3       | 1         |
| Asthma                         | 5       | 2         |
| Other <sup>4</sup>             | 11      | 3         |
| No cause listed                | 61      | <b>19</b> |



|   |
|---|
|   |
| 1. Causes of death as recorded in the records.  |
| 2. If the woman died due to direct and indirect causes, her death was classified as due to direct cause.                      |
| 3. Other direct causes of death included anaesthetic complications and deaths recorded merely as direct.                      |
| 4. Other indirect causes of death included tuberculosis, pneumonia, epilepsy, cancer, and deaths recorded merely as indirect. |

Fig. 9.01 shows that about half of women whose deaths were reviewed died after delivery (154 of 322 deaths) and PPH and pre-eclampsia/eclampsia account for half of those post-delivery deaths (81 of 154). Close to 10% of deaths reviewed occurred during obstetric surgery (31 of 322).

**Fig 9.01: Timing of death in maternal death cases reviewed (n=322)**



The average age of women whose deaths were reviewed was 28.7 [data not shown] and three quarters of women delivered at the same facility in which they died. More than half of the deaths reviewed were delivered by caesarean (54%), and 42% delivered vaginally (without vacuum extraction or forceps). Forty-two percent of women delivered normal live births. The rest of the newborns were either in distress (11%), had no APGAR score indicated (7%) or died

(39%). However, it is important to note that 18% of records reviewed did not indicate the condition of the newborn (Table 9.09).

**Table 9.09: Percent distribution of women whose deaths were reviewed according to age, location of the delivery, type of delivery and condition of newborn**

|  | %        |
|--|----------|
| <i>Among maternal deaths reviewed</i>  | (n =322) |
| Age of woman   |          |
| <20  | 9        |
| 20-24  | 23       |
| 25-29  | 25       |
| 30-34  | 18       |
| 35-39  | 19       |
| ≥40  | 7        |
|  |          |
| <i>Among those with a delivery</i>   | (n=205)  |
| Location of delivery   |          |
| At home  | 9        |
| At home with no health worker or TBA present   | 5        |
| At home with TBA   | 4        |
| At home with health worker   | 0        |
| On the way to health facility  | 0        |
| In this facility   | 77       |
| In other facility  | 13       |
| In other facility: CHPS compound   | 0        |
| In other facility: health center   | 7        |
| In other facility: hospital  | 6        |
|  |          |
| Type of delivery   | (n=194)  |
| Vaginal  | 42       |
| Assisted with vacuum extractor or forceps  | 3        |
| Cesarean   | 54       |
| Destructive delivery   | 1        |
| Laparotomy   | 1        |
|  |          |
| Condition of the newborn <sup>1</sup>  | (n=175)  |
| Normal live birth  | 42       |
| Live birth with distress   | 11       |
| Live birth with no APGAR score indicated   | 7        |
| Dead   | 39       |
| <i>Note: Up to 9.3% of cases were excluded due to missing information, unless otherwise noted.</i> |          |
| <i>1. 18.2% of cases were excluded due to missing information.</i>                                 |          |

Approximately half of the deaths reviewed occurred in Comprehensive EmONC facilities and another 43% in facilities partially functioning (i.e. hospitals performing 7 or 8 of the signal functions). Unlike what we will see later in the neonatal death reviews (Module 10), many of the women who died (40%) were referred into the facility from somewhere else, most from a health center/clinic (43%) and almost a quarter from another public hospital. In close to half of the deaths reviewed, a delay in arrival at the facility was considered a contributing factor to the woman’s death (though there were high percentages of missing information) (Table 9.10).

**Table 9.10: Percent distribution of women whose deaths were reviewed according to EmONC classification of facility where she died, referral status, day of week death occurred and factors contributing to the death**

|  | %        |
|--|----------|
| <i>Among all women whose deaths were reviewed</i>  | (n =322) |
| EmONC classification of facility where woman died  |          |
| Comprehensive EmONC  | 49       |
| Basic EmONC  | 1        |
| Partially functioning  | 43       |
| Non-EmONC  | 7        |
|  |          |
| Referral status  |          |
| Referred in  | 40       |
| Not referred   | 60       |
|  |          |
| <i>Among those referred</i>  | (n =123) |
| Referred from:   |          |
| CHPS Compound  | 7        |
| Public Health Center/Clinic  | 43       |
| Public Hospital  | 24       |
| Private hospital/private clinic/private maternity  | 21       |
| Other <sup>1</sup>   | 4        |
|  |          |
| Day of the week that woman died <sup>2</sup>   |          |
| Weekday  | 76       |
| Weekend  | 24       |
|  |          |
| Factors contributing to death <sup>3</sup>   |          |
| Delay in arrival to health facility  | 46       |
| Delayed transfer to appropriate level of care  | 19       |
| Delay due to lack of supplies  | 11       |
| Delay due to absence or slowness of health workers   | 18       |
| Delay in correct diagnosis or treatment  | 18       |
| <i>Note: Up to 5.6% of cases were excluded due to missing information unless otherwise noted.</i>  |          |
| <i>1. Other sources of referrals include traditional birth assistants and the country of Togo.</i> |          |
| <i>2. 21.1% of cases were excluded due to missing</i>  |          |

|  |  |
|--|--|
| information.   |  |
| 3. Up to 16% of cases excluded from percentage calculation due to missing information. |  |

### 9.04 Neonatal Death Review

Data collectors were asked to identify the last three neonatal deaths that had occurred in the facility in the previous 12 months. A neonatal death is defined as a live birth that dies before reaching the age of 28 days. The neonatal deaths included babies born in that facility who died before discharge, babies discharged and readmitted, or who were delivered at home but came for treatment and died in the facility before reaching the age of 28 days.

A total of 370 neonatal deaths were reviewed from 165 facilities. Close to 80% of the deaths occurred at a hospital, most in a public facility which is not surprising given that there are many more public facilities than private. Most of the deaths occurred at high functioning facilities, that is Comprehensive or Partially Functioning EmONC facilities (hospitals or health centers missing 1 or 2 of the signal functions) (Table 9.11).

**Table 9.11: Percent distribution of facilities where neonatal death reviews were performed according to number of cases reviewed, type of facility, sector, EmONC classification and location (n=165)**

| Facility Characteristics    | n   | %  |
|-----------------------------|-----|----|
| Number of cases reviewed    |     |    |
| 1                           | 78  | 47 |
| 2                           | 56  | 34 |
| 3                           | 31  | 19 |
| Type of facility            |     |    |
| Hospital                    | 131 | 79 |
| Health center               | 26  | 16 |
| Maternity                   | 5   | 3  |
| Health clinic               | 2   | 1  |
| CHPS compound               | 1   | 1  |
| Sector                      |     |    |
| Public                      | 107 | 65 |
| Private (for profit)        | 15  | 9  |
| NGO/Religious mission       | 43  | 26 |
| EmONC classification        |     |    |
| Comprehensive               | 60  | 36 |
| Basic                       | 2   | 1  |
| Partially functioning EmONC | 62  | 38 |
| Non-EmONC                   | 41  | 25 |

|                |    |    |
|----------------|----|----|
| Location       |    |    |
| Urban          | 97 | 59 |
| Rural          | 62 | 38 |
| No information | 6  | 4  |

Table 9.12 addresses maternal characteristics and information about the delivery. The average age of the mother was 26.7 years (though a full 26% of cases reviewed did not have information on the mother's age). At least 10% of the mothers did not survive the delivery. In 79% of the deaths reviewed, the baby was born in the same facility in which it died. Ten percent of the deaths reviewed delivered at home either with or without a traditional birth attendant or en route to the health facility. In only 11% of cases were the mother and/or newborn referred from another health facility to the facility in which the baby died. Among those who were referred (n=41), the indications for referral were as likely to be obstetric or maternal as they were fetal (during delivery) or newborn related (after delivery).

The neonatal death reviews also collected information on maternal characteristics such as the number of deliveries, live births, stillbirths and antenatal care visits made during the index pregnancy, but between 31 and 81% of the cases were missing this information.

**Table 9.12: Percent distribution of neonatal deaths reviewed according to maternal and delivery characteristics (n=370)**

| Maternal & Delivery Characteristics | n   | %  |
|-------------------------------------|-----|----|
| Age (in years)                      |     |    |
| under 20                            | 30  | 8  |
| 20-24                               | 73  | 20 |
| 25-29                               | 90  | 24 |
| 30-34                               | 40  | 11 |
| 35+                                 | 40  | 11 |
| Unknown                             | 97  | 26 |
|                                     |     |    |
|                                     |     |    |
|                                     |     |    |
| Maternal survival status            |     |    |
| Alive                               | 303 | 82 |
| Died                                | 38  | 10 |
| Unknown                             | 28  | 8  |
|                                     |     |    |
| Location of delivery                |     |    |
| This facility                       | 291 | 79 |
| Another facility                    | 17  | 5  |
| At home with TBA                    | 18  | 5  |
| At home with no TBA or health       | 16  | 4  |

|  |     |    |
|--|-----|----|
| worker   |     |    |
| En route   | 2   | 1  |
| No information   | 26  | 7  |
|  |     |    |
| Type of delivery   |     |    |
| Singleton vertex   | 255 | 69 |
| Breech   | 18  | 5  |
| Assisted vaginal delivery  | 4   | 1  |
| Cesarean   | 58  | 16 |
| Unknown  | 35  | 10 |
|  |     |    |
| Mother or newborn referred from another facility?                          |     |    |
| Yes  | 41  | 11 |
| No   | 283 | 77 |
| Unknown  | 36  | 12 |
|  |     |    |
| Indication for referral (if referred)                                      |     |    |
| Mother high risk   | 8   | 20 |
| Obstetric complication   | 11  | 28 |
| Fetal distress/fetal complication  | 9   | 22 |
| Newborn complication   | 10  | 25 |
| Other  | 2   | 5  |
| <sup>1</sup> Cases where age was unknown were not included in the average. |     |    |

Table 9.13 examines characteristics of the newborn. Sixty percent of the deaths reviewed occurred in the first 24 hours of life and another third within the first week. Globally, half of neonatal deaths occur in the first 24 hours and three-fourths during the first week of life, but this distribution includes non-institutional deaths.

Just above half of the newborn deaths were babies born at term, almost a third (29%) were pre-term and approximately half were of normal birth weight. As many as 27% of the deaths had no information on birth weight. Two out of five cases were documented as dying of asphyxia with neonatal sepsis and preterm or LBW accounting for 30%. However, almost one in five newborn deaths reviewed did not have information on the cause of the death. This serves as further evidence of the need for improved record keeping.

**Table 9.13: Percent distribution of neonatal deaths reviewed according to age at death, gestation, gestational age at birth, birth weight and cause of death (n=370)**

| Newborn Characteristics | n   | %  |
|-------------------------|-----|----|
| Age at death            |     |    |
| less than 24 hours      | 220 | 60 |
| 24 hrs up to 7 days     | 117 | 32 |

|  |     |    |
|--|-----|----|
| 7 days to 28 days                      | 32  | 9  |
| No information                         | 1   | 0  |
|  |     |    |
| Gestation                              |     |    |
| Singleton                              | 324 | 88 |
| Multiple gestation                     | 23  | 6  |
| No information                         | 23  | 6  |
|  |     |    |
| Gestational age at birth               |     |    |
| Preterm (<37 weeks)                    | 106 | 29 |
| Term ( $\geq$ 37 weeks and < 42 weeks) | 202 | 55 |
| Post term ( $\geq$ 42 weeks)           | 7   | 2  |
| No information                         | 55  | 15 |
|  |     |    |
| Birth weight                           |     |    |
| < 1.5 kg                               | 41  | 11 |
| 1.5 – 1.9 kg                           | 30  | 8  |
| 2 – 2.4 kg                             | 28  | 8  |
| $\geq$ 2.5 kg                          | 171 | 46 |
| No information                         | 100 | 27 |
|  |     |    |
| Cause of death                         |     |    |
| Asphyxia                               | 150 | 41 |
| Neonatal sepsis                        | 57  | 15 |
| Preterm/LBWT                           | 56  | 15 |
| Other                                  | 35  | 10 |
| No information                         | 72  | 19 |

Table 9.14 looks at the timing of death and the location of the death by the cause. Again, one must take into consideration the lack of information – for example, among deaths that occurred at a health center, 44% were missing a cause of neonatal death.

Among very early neonatal deaths (less than 24 hours after delivery), half died due to asphyxia. Among those who survived the first day but died within the first week, half the deaths were due to asphyxia or neonatal sepsis (27% and 28%, respectively). Among those who died between 1 week and 28 days, half of the deaths were due to sepsis (another 19% due to asphyxia).

The most common cause of death among newborns dying in private facilities was preterm/LBWT (33%), followed by asphyxia (26%). Cause of death was less likely to be recorded at health centers and maternities/clinics/CHPS than at hospitals.

**Table 9.14: Percent distribution of cause of death, by age at death, sector and facility type where death occurred**

|                         | Cause of neonatal death |                 |                            |       |                | Total number of reviewed neonatal deaths |
|-------------------------|-------------------------|-----------------|----------------------------|-------|----------------|--|
|                         | Asphyxia                | Neonatal sepsis | Preterm / Low birth weight | Other | No information |  |
|                         | %                       | %               | %                          | %     | %              |  |
| <b>Age at death</b>     |                         |                 |                            |       |                |  |
| less than 24 hours      | 51                      | 4               | 17                         | 5     | 24             | 220                                      |
| 24 hrs up to 7 days     | 27                      | 28              | 15                         | 16    | 14             | 117                                      |
| 7 days to 28 days       | 19                      | 50              | 3                          | 16    | 12             | 32                                       |
|                         |                         |                 |                            |       |                |  |
| <b>Sector</b>           |                         |                 |                            |       |                |  |
| Public                  | 41                      | 16              | 13                         | 10    | 20             | 238                                      |
| Private (for profit)    | 26                      | 11              | 33                         | 8     | 22             | 27                                       |
| NGO/Religious mission   | 43                      | 15              | 15                         | 10    | 17             | 105                                      |
|                         |                         |                 |                            |       |                |  |
| <b>Type of facility</b> |                         |                 |                            |       |                |  |
| Hospital                | 43                      | 17              | 13                         | 11    | 16             | 314                                      |
| Health center           | 29                      | 5               | 20                         | 2     | 44             | 41                                       |
| Maternity/clinic/CHPS   | 20                      | 0               | 47                         | 0     | 33             | 15                                       |

Table 9.15 provides additional details on the types of complications reported for each newborn death, by age at death. Note that multiple responses were permitted. Overall, the five most commonly reported complications were asphyxia (reported in 52% of neonatal deaths), respiratory distress (cyanosis or unspecified) (39%), low birth weight or preterm (22%), and neonatal sepsis (16%). However, it is clear that the reported complications differed by age at death. For example, among very early newborn deaths (within 24 hours), asphyxia was the predominant complication (reported in 66% of very early newborn deaths), respiratory distress was reported in close to half the deaths, and low birth weight in approximately one quarter. Among newborns that survived the first 24 hours but died during the first week, asphyxia was still the most common complication, followed by respiratory distress, sepsis and fever. For newborns who survived the first week, the most common complications were neonatal sepsis (reported in 41% of deaths reviewed for this group) and fever (reported in 31% of deaths for this group). Jaundice, pneumonia, convulsions and malaria were relatively more common in this group than in newborns that died earlier.



**Table 9.15: Percent of reviewed neonatal deaths with newborn complications, by age at death**

| Newborn Complications <sup>1</sup>           | All cases | less than 24 hours | 24 hrs up to 7 days | 7 to 28 days |
|--|-----------|--------------------|---------------------|--------------|
|  | (n=369)   | (n=220)            | (n=117)             | (n=32)       |
|  | %         | %                  | %                   | %            |
| Asphyxia                                     | 52        | 66                 | 39                  | 6            |
| Low birth weight – preterm                   | 22        | 24                 | 24                  | 6            |
| Respiratory distress – cyanosis              | 20        | 27                 | 11                  | 3            |
| Respiratory distress – unspecified           | 19        | 21                 | 16                  | 19           |
| Neonatal sepsis                              | 16        | 7                  | 25                  | 41           |
| Fever  | 10        | 4                  | 16                  | 31           |
| Respiratory distress – meconium aspiration   | 8         | 9                  | 8                   | 3            |
| Low birth weight – small for gestational age | 8         | 8                  | 8                   | 0            |
| Jaundice                                     | 7         | 2                  | 14                  | 13           |
| Low birth weight – unspecified               | 5         | 4                  | 6                   | 3            |
| Congenital malformation                      | 5         | 5                  | 8                   | 0            |
| Respiratory distress – pneumonia             | 4         | 1                  | 6                   | 16           |
| Hypoglycemia                                 | 4         | 2                  | 8                   | 6            |
| Sick newborn (cause unknown)                 | 4         | 3                  | 6                   | 3            |
| Trauma due to delivery                       | 3         | 1                  | 5                   | 0            |
| Convulsions                                  | 3         | 1                  | 4                   | 13           |
| Kernicterus                                  | 2         | 0                  | 4                   | 3            |
| Meningitis                                   | 1         | 0                  | 3                   | 3            |
| Diarrhea                                     | 1         | 0                  | 4                   | 3            |
| Malaria                                      | 1         | 0                  | 3                   | 13           |
| <sup>1</sup> Multiple responses possible     |           |                    |                     |              |

Table 9.16 looks at the relationships between maternal or fetal complications and causes of neonatal death. Asphyxia was the primary cause of newborn death among women who suffered from hemorrhage (antenatal or postpartum), premature rupture of membranes, obstructed or prolonged labor, cord prolapse and fetal distress. Preterm/low birth weight was the primary cause of neonatal death among the cases in which women suffered from severe pre-eclampsia or eclampsia.

Ten percent of neonatal death reviews indicated that the newborn’s mother did not survive. Among the cases for which newborn cause of death was unknown, almost a third of the mothers did not survive.

**Table 9.16: Number of neonatal deaths reviewed where a maternal or fetal complication was reported, by cause of newborn death**

| Maternal or Fetal Complication <sup>1</sup>   | Total number of neonatal deaths reviewed | Cause of death |                 |                          |       | No info |
|---|--|----------------|-----------------|--------------------------|-------|---------|
|   |  | Asphyxia       | Neonatal sepsis | Preterm/low birth weight | Other |         |
|   |  | n              | n               | n                        | n     |         |
| Antepartum hemorrhage   | 6  | 3              | 0               | 1                        | 0     | 2       |
| Postpartum hemorrhage   | 11                                       | 5              | 2               | 2                        | 1     | 1       |
| Severe pre-eclampsia  | 13                                       | 4              | 1               | 7                        | 1     | 0       |
| Eclampsia   | 6  | 2              | 0               | 2                        | 1     | 1       |
| Postpartum infections/sepsis  | 3  | 2              | 0               | 0                        | 0     | 1       |
| Premature rupture of membranes (>24 hrs)  | 29                                       | 17             | 3               | 7                        | 1     | 1       |
| Obstructed labor  | 24                                       | 14             | 1               | 0                        | 5     | 4       |
| Prolonged labor   | 47                                       | 37             | 2               | 1                        | 2     | 5       |
| Cord prolapse   | 5  | 3              | 0               | 0                        | 0     | 2       |
| Severe fetal distress   | 84                                       | 69             | 5               | 3                        | 4     | 3       |
| Was referred "in" due to complications of the fetus/newborn   | 15                                       | 7              | 4               | 0                        | 3     | 1       |
| Mother was HIV+   | 6  | 3              | 1               | 1                        | 0     | 1       |
| Mother tested positive for syphilis   | 6  | 3              | 1               | 2                        | 0     | 0       |
| Other <sup>2</sup>  | 8  | 5              | 1               | 2                        | 0     | 0       |
| Survival status of mother   |  |                |                 |                          |       |         |
| Alive   | 303                                      | 133            | 47              | 50                       | 30    | 43      |
| Died  | 38                                       | 7              | 1               | 6                        | 1     | 23      |
| No information  | 29                                       | 10             | 9               | 0                        | 4     | 6       |
| <sup>1</sup> Multiple complications possible  |  |                |                 |                          |       |         |
| <sup>2</sup> Other complications included one of each of the following cases: previous cesarean, anemia, failed induction, fever, home delivery, malpresentation, severe malaria, and slept on baby |  |                |                 |                          |       |         |

# CHAPTER TEN Recommendations

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## *10.01 EmONC Indicators*

- Health facilities located in areas where the gap between actual and recommended number of functioning EmONC is particularly high or those facilities that are partially functioning should be strengthened to fully functioning status in order to meet national and international standards.
- The Ministry of Health should ensure that all facilities designated to be fully functioning as an EmONC facilities are equipped to perform assisted vaginal deliveries, removal of retained products and neonatal resuscitation as lack of functioning equipment contributed to non-performance of these signal functions.
- The provision of functional equipment for vaginal delivery should be accompanied by a program for continued training of providers in recognizing the indications for assisted vaginal delivery, recognizing the conditions under which this can be done safely and also in knowing the proper technique and management and protocol for carrying out the procedure.
- Ministry of Health should advocate for the use of recommended drugs for pre-eclampsia/eclampsia (i.e. magnesium sulphate) and for active management of third stage of labour (i.e. oxytocin) and ensure that all providers are trained in the use of these drugs.
- Further studies are needed to examine reasons for low uptake of magnesium sulphate in health facilities.
- The Ministry of Health should take the lead to liaise with other ministries such as Public Works or Transport to create a forum where all stakeholder ministries meet annually to dialogue and plan how each contributes to the prevention of maternal mortality.

## *10.02 Performance of other essential services*

- More private hospitals and clinics that provide care to pregnant women should provide PMTCT services.
- More private hospitals should provide family planning services as part of the reproductive health care.

## *10.03 Facility infrastructure and referral for maternal and newborn emergencies*

- Functional beds lying idle in store rooms of health facilities should be distributed to those facilities with insufficient beds.
- Provide a source of electricity to the 9% of health facilities without a source of electricity

- Provide water to facilities that do not have source of water (such as 25% of facilities in Upper West, 21% of facilities in Northern, 12% of facilities in Upper East and 11% of facilities in Western Region).
- The Ministry of Health should take steps to maintain the universal 24/7 coverage for EmONC services.
- The Ministry of Health should advocate for the procurement of 4-wheeled ambulances to improve the per capita access to ambulances
- Lower level facilities such as CHPS compounds should procure landlines that function as cell phones while steps are taken to address the issue of staff reimbursement for the use of personal phones for emergency referrals
- Facilities that undertake referrals should display telephone directories of the receiving facilities
- To reduce delays in referral, facilities that assume patients will provide their own transport should engage private parties to meet this gap and the drivers of the private partner should receive training in first aid as part of the arrangement
- Training for facility drivers should include extrication and triage
- Incubators should be included as part of the equipment on ambulances
- Ministry of Health should develop guidelines for the management of newborns and make them widely available
- The policy on referral should be widely circulated and adhered to in order to improve the quality of referrals.

#### ***10.04 Human Resources***

- In order to ensure the availability of maternity services around the clock, health centres should have two or more midwives.
- A system should be put in place to attract more doctors and other critical staff to work at district hospitals in the area of maternal and newborn health.
- Midwives working in other units other than maternity departments should be posted to maternities to increase the staff strength in maternity departments.
- Referral facilities should put in place the appropriate administrative mechanisms to ensure greater parity for both day and night time coverage for emergencies.

#### ***10.05 Provider knowledge and competency for maternal and newborn care***

- Monitoring and Supervision must be undertaken to validate the knowledge and competencies of staff engaged in obstetric care.
- Facilitative supervision should be employed to those with challenges.
- On-the-job rather than classroom training using coaching as the methodology should be encouraged to enable obstetric care providers to gain more practical competencies and confidence for quality care.
- Job aids, protocols, wall charts and pocket books must be developed on neonatal resuscitation, signs of pre and postpartum haemorrhage, signs of newborn infections

and management of unsafe abortion especially the Community Health Nurses/Officers and Health Assistants who have not been exposed to much training on maternity care.

- All cadres of staff should be trained on record-keeping, adult resuscitation and the management of rape victims.
- More midwives should undergo training on life saving procedures such as use of vacuum extraction and manual vacuum aspiration especially those in hard-to-reach areas of the country.

#### ***10.06 Availability of drugs, equipment and supplies***

- Conduct supplies and logistics management training to ensure appropriateness and sustainability of drug procurement and distribution in all health facilities.
- Ensure availability of health facility inventory registers and ensure that staff is trained to keep them up-to date.
- Compliance is needed with the stock management guideline to refill when stocks fall to a third.
- Maintain an emergency stock of key drugs, including magnesium sulphate, (in operating theatres, labour wards and maternity wards) in all facilities even where pharmacies are always open. The emergency stock could then be refilled at re-order level.

#### ***10.07 Case Reviews***

- The Ghana Health Service should liaise with the Ghana Medical Association, the Ghana Registered Midwives Association and the Society of Gynecologists and Obstetrician of Ghana to demonstrate the value of improvements in the quality and completion of medical records and logbooks. Doctors, specialists and midwives should also meet to agree on the minimum required information that should be recorded in the hospital notes, in the management of labour using the partograph, in the diagnosis and post-operative reports on caesarean sections, and in cases of stillbirths and neonatal and maternal deaths.
- Health facilities should have half-yearly reviews where the quality of patient notes in obstetric and newborn care is assessed. Action should be taken to ensure proper note taking in these facilities.
- Further analysis should be performed by the Ghana Health Service to understand why partographs are not being used in as many as 17% of facilities where deliveries are conducted. (Need an analysis of Module 6 question 2)
- The Ghana Health Service working through the Regional and District Health Management Teams should organize training on the management of labour for all staff who manage labour and delivery. These training sessions should be repeated at different times during the year so that each person can attend one event.

- The Ghana Health Service in conjunction with the institutions that train medical students and midwives should design a protocol for the management of labour using the partograph. This protocol should be in the form of a pocket book as well as a poster. The designed protocol should be used in the training of medical students and midwives and should be placed on every labour ward in the country.
- Even though this review shows caesarean sections to be relatively safe, with a 1% associated mortality rate, the practice of scheduling a caesarean section mainly in order to perform a bilateral tubal ligation should be critiqued by the Society of Obstetricians and Gynaecologists of Ghana. The Society, in conjunction with the Ghana Health Service and NGOs working in Family Planning, should organize training in postpartum and interval tubal ligation for doctors in both the private and public sector.
- Nearly 2/3 of the maternal deaths reviewed were identified as cases aggravated by delays in arriving at the health facility or in the transfer from one facility to another. Substantial cesarean reviews (17%) were also transfers from one facility to another, and 11% of the neonatal death were referrals. There is a need for greater dialogue between the Ghana Health Service and Ministry of Health on one hand and the ministries responsible for transportation on easing transportation problems in the country. The Ghana Health Service and the Ministry of Health should also look deeper into the problems associated with referral of patients between facilities. This is addressed in another section of this report.

**Table 2.1A: Names of data collectors by Region**

| <b>Region</b>        | <b>Name</b>               |
|----------------------|---------------------------|
| Western              | Mary Koomson              |
|                      | Kate Cobbinah             |
|                      | Mary Fynn                 |
|                      | Judith Naa Deide Okine    |
|                      | Naomi Adomako-Kwakye      |
|                      | Gloria Dziekpor           |
|                      | Veronica Annordjoe        |
|                      | Ellen Afia Ampoma Andor   |
|                      | Joana Edusei-Poku         |
|                      | Rose A. Ansah             |
|                      | Eva Annor Mozu            |
|                      | Anna Austin               |
| Central              | Grace Adokoh              |
|                      | Phideline Aniwa           |
|                      | Theresah N. Atakorah      |
|                      | Gladys Addai              |
|                      | Mary Araba Fosu           |
|                      | Musah Mohammed Andrew     |
|                      | Theresa Yamson            |
|                      | Gladys H. Oppon           |
|                      | Paulina Amuah             |
|                      | Veronica Ewusie           |
|                      | Elizabeth Bain-Doodu      |
|                      | Josephine Kakah           |
| Greater Accra        | Eben Boahene              |
|                      | Matilda D. Quist          |
|                      | Abigail Thompson          |
|                      | Millicent Adams           |
|                      | Harry Akafu               |
|                      | Doris Amarteifio          |
|                      | Lawrence Sakyi            |
|                      | Edna Adzigbli             |
|                      | Margaret Asante           |
|                      | Amina Yakubu              |
|                      | Mary Mills                |
|                      | Constance Lamptey         |
|                      | Augutina Yirenkyi Danquah |
|                      | Katherine D. Kwao         |
|                      | Anwar Wulff               |
| Olivia Korkor Mensah |                           |
| Innocentia Anthonio  |                           |

|         |                             |
|---------|-----------------------------|
| Volta   | Lucy A. Bonuedie            |
|         | Happy A. Hozameh            |
|         | Florence A. Obrusuh         |
|         | Mary Ametefe                |
|         | Freda Nyavor                |
|         | Justina Alornyo             |
|         | Annie Darko                 |
|         | Tettevi Vivian              |
|         | Enos Amedo                  |
|         | Adams Agbeko                |
|         | Faustina Asante             |
|         |                             |
| Eastern | Justina Fosu                |
|         | Esther M. Mensah            |
|         | Catherine Odonkor           |
|         | Grace Danquah               |
|         | Ellen Darkoa Asare          |
|         | Gifty Addo-Tetebo           |
|         | Evelyn Doku                 |
|         | Belinda Opoku               |
|         | Margaret Asare              |
|         | Catherine Bofah             |
|         | Gladys Ahanogbe             |
|         | Comfort Donkor              |
|         |                             |
| Ashanti | Charity Amoah               |
|         | Cecelia Aadigha             |
|         | Harriette Boakye            |
|         | Emelia Akpaloo              |
|         | Hanna Owusu                 |
|         | Juliana Abrokwah            |
|         | Comfort Adjei               |
|         | Eugenia Gyening             |
|         | Vinolia B.A. Ocloo          |
|         | Matilda Ansa Gyesaw         |
|         | Benedicta Addo              |
|         | Vesta Aryordyiah            |
|         | Joana Tawiah Burgesson      |
|         | Esther Aboagye              |
|         | Edith Offei                 |
|         | Rita Anafo                  |
|         | Golda Dokuaa Kwapong        |
|         | Marian K. Amponsa-Achiano   |
|         | Beatrice Constance Nyamekye |
|         | Felicia Hannah Nyame        |
|         |                             |
|         | Rosina Atta                 |



|                    |                         |
|--------------------|-------------------------|
| Brong Ahafo        | Rose Anane              |
|                    | Cecelia Bonbanye        |
|                    | Elizabeth Adjei-Mensah  |
|                    | Priscilla Awonong       |
|                    | Stella Kwudening        |
|                    | Faustina A. Asamoah     |
|                    | Constance Serwoo-Peprah |
|                    | Diana Asigri            |
|                    | Antoinette Ntsiakoh     |
|                    | Elizabeth Owusuah       |
|                    | Florence Offei          |
|                    |                         |
| Northern           | Zeliatu Abdallah        |
|                    | Asanatu K. Sumani       |
|                    | Theresa M. Yahaya       |
|                    | Ramatu Alhassan         |
|                    | Cecilia Mahama          |
|                    | Sophie M. Niendow       |
|                    | Victoria T. Aboyella    |
|                    | Nassam Sumani Aramata   |
|                    | Hajia Fati Grant        |
|                    | Yahatasu Zakariah       |
|                    | Agnes Atogiba           |
|                    | Margret Awukune         |
|                    | Monica Gau              |
|                    | Zenabu Dammia           |
|                    | Agnes A. Numaworse      |
| Janet Adisa Mahama |                         |
|                    |                         |
| Upper East         | Mauricia Yiryel         |
|                    | Aziaba Sabina Abisiba   |
|                    | Douglas Atambila Nyaaba |
|                    | Vida Kunkuri            |
|                    | Salamatu Abukari        |
|                    | Margaret Kugre Eng-Wala |
|                    | Arthur Tiertore         |
|                    | Emmanuel Ayire          |
|                    | Duncan Adogboba         |
|                    | Festus Menu             |
|                    |                         |
| Upper West         | Rukaya Wumnaya          |
|                    | Leticia A. Atiah        |
|                    | Juliana Y. Karbo        |
|                    | Faustina Mwini          |
|                    | Kuuzuing Larissa        |
| Dora Amidu         |                         |

|  |                |
|--|----------------|
|  | Ayisha Goodman |
|  | Mary Danuor    |

**Table 2.2A: Names of Supervisors and Facilitators**

| <b>Name</b>               |                          |
|---------------------------|--------------------------|
| Evelyn Domeh Naaso        | RHD                      |
| Mrs. Afua Williams        | War Memorial Hospital    |
| Abraham Bangamsi Mahama   | RHD                      |
| Mr. Nathan Kumasenu       | NHRC                     |
| Dr. Peter Baffoe          | Regional Hospital, Bolga |
| Dr. Ernest Opoku          | RHD                      |
| Dr. James Akpable         | RHD                      |
| Dr. Koku Awoonor-Williams | RHD                      |

**Table 3.01A: Availability of EmONC facilities according to national standards, by Region (EmONC Indicator 1)**

|               | Population <sup>1</sup> | Basic EmONC facilities 4 per 200,000 population |        |     | Basic and Comprehensive EmONC facilities 5 per 200,000 population |        |     | Comprehensive EmONC facilities 1 per 200,000 population |        |     |
|---------------|-------------------------|---|--------|-----|---|--------|-----|---|--------|-----|
|               |                         | Recommended <sup>2</sup>                        | Actual | Gap | Recommended <sup>2</sup>  | Actual | Gap | Recommended <sup>2</sup>                                | Actual | Gap |
|               |                         | n   | n      | n   | n   | n      | n   | n   | n      | n   |
| National      | 24,232,431              | 485   | 13     | 472 | 606   | 89     | 517 | 121   | 76     | 45  |
| Region        |                         |   |        |     |   |        |     |   |        |     |
| Western       | 2,325,597               | 46  | 2      | 44  | 58  | 5      | 53  | 12  | 3      | 9   |
| Central       | 2,107,209               | 42  | 0      | 42  | 53  | 4      | 49  | 11  | 4      | 7   |
| Greater Accra | 3,909,764               | 78  | 2      | 76  | 98  | 11     | 87  | 20  | 9      | 11  |
| Volta         | 2,099,876               | 42  | 1      | 41  | 52  | 4      | 48  | 10  | 3      | 7   |
| Eastern       | 2,596,013               | 52  | 1      | 51  | 65  | 15     | 50  | 13  | 14     | -1  |
| Ashanti       | 4,725,046               | 94  | 3      | 91  | 118   | 21     | 97  | 24  | 18     | 6   |
| Brong Ahafo   | 2,282,128               | 46  | 1      | 45  | 57  | 11     | 46  | 11  | 10     | 1   |
| Northern      | 2,468,557               | 50  | 3      | 47  | 62  | 11     | 51  | 12  | 8      | 4   |
| Upper East    | 1,031,478               | 21  | 0      | 21  | 26  | 3      | 23  | 5   | 3      | 2   |
| Upper West    | 677,763                 | 14  | 0      | 14  | 17  | 4      | 13  | 3   | 4      | -1  |

1. Source of population estimates: Ghana Statistical Service (GSS) 2010 Population and Housing Census Provisional results

**Table 3.02A: Availability of EmONC facilities according to UN standards, by Region (EmONC Indicator 1)**

|               | Population <sup>1</sup> | Basic EmONC facilities 4 per 500,000 population |        |     | Basic and Comprehensive EmONC facilities 5 per 500,000 population |        |     | Comprehensive EmONC facilities 1 per 500,000 population |        |     |
|---------------|-------------------------|---|--------|-----|---|--------|-----|---|--------|-----|
|               |                         | Recommended <sup>2</sup>                        | Actual | Gap | Recommended <sup>2</sup>  | Actual | Gap | Recommended <sup>2</sup>                                | Actual | Gap |
|               |                         | n   | n      | n   | n   | n      | n   | n   | n      | n   |
| National      | 24,232,431              | 194   | 13     | 181 | 242   | 89     | 153 | 48  | 76     | -   |
| Region        |                         |   |        |     |   |        |     |   |        |     |
| Western       | 2,325,597               | 18  | 2      | 16  | 23  | 5      | 18  | 5   | 3      | 2   |
| Central       | 2,107,209               | 17  | 0      | 17  | 21  | 4      | 17  | 4   | 4      | -   |
| Greater Accra | 3,909,764               | 31  | 2      | 29  | 39  | 11     | 28  | 8   | 9      | -   |
| Volta         | 2,099,876               | 17  | 1      | 16  | 21  | 4      | 17  | 4   | 3      | 1   |
| Eastern       | 2,596,013               | 21  | 1      | 19  | 26  | 15     | 11  | 5   | 14     | -   |
| Ashanti       | 4,725,046               | 37  | 3      | 34  | 47  | 21     | 26  | 10  | 18     | -   |
| Brong Ahafo   | 2,282,128               | 18  | 1      | 17  | 23  | 11     | 12  | 5   | 10     | -   |
| Northern      | 2,468,557               | 20  | 3      | 17  | 25  | 11     | 14  | 5   | 8      | -   |
| Upper East    | 1,031,478               | 8   | 0      | 8   | 10  | 3      | 7   | 2   | 3      | -   |
| Upper West    | 677,763                 | 6   | 0      | 6   | 7   | 4      | 3   | 1   | 4      | -   |

1. Source of population estimates: Ghana Statistical Service (GSS) 2010 Population and Housing Census Provisional results

**Table 3.03A: Availability of EmONC facilities, by region (EmONC Indicators 1 & 2 - Using 12 month performance of signal functions) according to national standards**

|               | Population <sup>1</sup> | Basic and Comprehensive EmONC facilities<br>5 per 200, 000<br>population |        |     | Comprehensive EmONC facilities 1<br>per 200,000 population |        |     |
|---------------|-------------------------|--|--------|-----|--|--------|-----|
|               |                         | Recommended  | Actual | Gap | Recommended  | Actual | Gap |
|               |                         | n  | n      | n   | n  | n      | n   |
| National      | 24,232,431              | 606  | 30     | 576 | 121  | 110    | 11  |
| Region        |                         |  |        |     |  |        |     |
| Western       | 2,325,597               | 58   | 10     | 48  | 12   | 5      | 7   |
| Central       | 2,107,209               | 53   | 6      | 47  | 11   | 5      | 6   |
| Greater Accra | 3,909,764               | 98   | 17     | 81  | 20   | 14     | 6   |
| Volta         | 2,099,876               | 52   | 12     | 40  | 10   | 11     | -1  |
| Eastern       | 2,596,013               | 65   | 15     | 50  | 13   | 14     | -1  |
| Ashanti       | 4,725,046               | 118  | 37     | 81  | 24   | 26     | -2  |
| Brong Ahafo   | 2,282,128               | 57   | 17     | 40  | 11   | 15     | -4  |
| Northern      | 2,468,557               | 62   | 13     | 49  | 12   | 9      | 3   |
| Upper East    | 1,031,478               | 26   | 6      | 20  | 5  | 6      | -1  |
| Upper West    | 677,763                 | 17   | 7      | 10  | 3  | 5      | -2  |

1. Source of population estimates: Ghana Statistical Service (GSS) 2010 Population and Housing Census Provisional results

**Table3.04 A: Availability of EmONC facilities, by region (EmONC Indicators 1 & 2 - using 12 months performance of signal functions) according to UN standards**

|               | Population <sup>1</sup> | Basic and Comprehensive EmONC facilities<br>5 per 500, 000<br>population |        |     | Comprehensive EmONC facilities 1 per<br>500,000 population |        |     |
|---------------|-------------------------|--|--------|-----|--|--------|-----|
|               |                         | Recommended <sup>2</sup>   | Actual | Gap | Recommended <sup>2</sup>                                   | Actual | Gap |
|               |                         | n  | n      | n   | n  | n      | n   |
| National      | 24,232,431              | 242  | 30     | 212 | 48   | 110    | -   |
| Region        |                         |  |        |     |  |        |     |
| Western       | 2,325,597               | 23   | 10     | 13  | 5  | 5      | -   |
| Central       | 2,107,209               | 21   | 6      | 15  | 4  | 5      | -   |
| Greater Accra | 3,909,764               | 39   | 17     | 22  | 8  | 14     | -   |
| Volta         | 2,099,876               | 21   | 12     | 9   | 4  | 11     | -   |
| Eastern       | 2,596,013               | 26   | 15     | 11  | 5  | 14     | -   |
| Ashanti       | 4,725,046               | 47   | 37     | 10  | 9  | 26     | -   |
| Brong Ahafo   | 2,282,128               | 23   | 17     | 6   | 5  | 15     | -   |
| Northern      | 2,468,557               | 25   | 13     | 12  | 5  | 9      | -   |
| Upper East    | 1,031,478               | 10   | 6      | 4   | 2  | 6      | -   |

|   |         |   |   |   |   |   |   |
|---|---------|---|---|---|---|---|---|
| Upper West  | 677,763 | 7 | 7 | - | 1 | 5 | - |
| 1. Source of population estimates: Ghana Statistical Service (GSS) 2000 Population and Housing Census Projections   |         |   |   |   |   |   |   |
| 2. WHO, UNFPA and UNICEF recommend a minimum ratio of 5 EmONC facilities per 500,000 where at least 1 is Comprehensive (Monitoring emergency obstetric care: a handbook, 2009). |         |   |   |   |   |   |   |

**Table 3.05A EmONC status by region and facility type (based on 12 month performance of SFs).**

|                   | EmONC Status (based on performance of signal functions in last 12 months) <sup>1</sup> |         |       |               | Total number of facilities |
|-------------------|--|---------|-------|---------------|----------------------------|
|                   | Non-EmONC  | Partial | Basic | Comprehensive |                            |
| National          | 659  | 360     | 30    | 110           | 1159                       |
| Region            |  |         |       |               |                            |
| Western           | 53   | 57      | 5     | 5             | 120                        |
| Central           | 56   | 43      | 1     | 5             | 105                        |
| Greater Accra     | 74   | 47      | 3     | 14            | 138                        |
| Volta             | 34   | 35      | 1     | 11            | 81                         |
| Eastern           | 81   | 25      | 1     | 14            | 121                        |
| Ashanti           | 119  | 58      | 11    | 26            | 214                        |
| Brong Ahafo       | 66   | 37      | 2     | 15            | 120                        |
| Northern          | 59   | 36      | 4     | 9             | 108                        |
| Upper East        | 64   | 15      | 0     | 6             | 85                         |
| Upper West        | 53   | 7       | 2     | 5             | 67                         |
| Type of facility  |  |         |       |               |                            |
| Teaching Hospital | 0  | 0       | 0     | 3             | 3                          |
| Regional Hospital | 0  | 1       | 0     | 8             | 9                          |
| District Hospital | 63   | 98      | 9     | 99            | 269                        |
| Health Centre     | 333  | 169     | 7     | 0             | 509                        |
| Health Clinic     | 92   | 40      | 4     | 0             | 136                        |
| Maternity Home    | 107  | 47      | 10    | 0             | 164                        |
| CHPS Compound     | 64   | 5       | 0     | 0             | 69                         |
| Designation       |  |         |       |               |                            |
| Urban             | 320  | 247     | 21    | 107           | 695                        |
| Rural             | 339  | 113     | 9     | 3             | 464                        |

<sup>1</sup>*Basic means 7 signal functions performed in last 12 months; Comprehensive means 9 signal functions performed in last 12 months; partial means 1 or 2 signal functions not performed in last 12 months and Non-EmONC means more than 2 signal functions not performed in last 12 months*

**Table 3.06A: Number of facilities that performed the signal function 12 months before the assessment but not in the 3 months before the assessment and, among them, the number and percent that were 'ready to perform' the signal function at the time of the assessment (i.e. that had the minimum requisite equipment and health worker to perform the signal function), by signal function**

|   | Signal Function |                      |                            |                            |                              |                           |                        |                   |                     |
|---|-----------------|----------------------|----------------------------|----------------------------|------------------------------|---------------------------|------------------------|-------------------|---------------------|
|   | Antibiotics     | Parenteral oxytocics | Parenteral anticonvulsants | Manual removal of placenta | Removal of retained products | Assisted vaginal delivery | Neonatal resuscitation | Blood transfusion | Caesarean performed |
|   | n               | n                    | n                          | n                          | n                            | n                         | n                      | n                 | n                   |
| Number of facilities that performed the signal function in the last 12 months           | 958             | 1130                 | 734                        | 695                        | 387                          | 194                       | 826                    | 233               | 245                 |
| Among them, number that did not perform the SF recently (within 3 months of survey)     | 52              | 6                    | 92                         | 166                        | 55                           | 41                        | 109                    | 12                | 6                   |
| Among those that did not perform the signal function recently, number with:             |                 |                      |                            |                            |                              |                           |                        |                   |                     |
| Minimum requisite drugs /equipment to perform SF <sup>1</sup>                           | 52              | 6                    | 87                         | 166                        | 19                           | 32                        | 77                     | 1                 | 2                   |
| Health worker to perform SF <sup>2</sup>  | 50              | 5                    | 83                         | 152                        | 26                           | 33                        | 103                    | 11                | 4                   |
| Both drugs/equipment and health worker to perform SF                                    | 50              | 5                    | 79                         | 152                        | 17                           | 28                        | 73                     | 1                 | 2                   |
| Percent ready to perform on day of assessment (despite not performing in last 3 months) | 96%             | 83%                  | 86%                        | 92%                        | 31%                          | 68%                       | 67%                    | 8%                | 33%                 |



1. The minimum requisite drugs and/or equipment for each signal function: **ANTIBIOTICS** - gentamicin, amoxicillin, ampicillin or metronidazole in stock; **OXYTOCICS** - oxytocin or ergometrine (injection) in stock; **ANTICONVULSANTS** - magnesium sulfate (any concentration) or diazepam in stock; **MANUAL REMOVAL OF PLACENTA** - gloves in stock; **REMOVAL OF RETAINED PRODUCTS BY MVA** - functioning vacuum aspirators/syringes, various sized cannulae, lubricating oil and local anesthesia; ; **ASSISTED VAGINAL DELIVERY** functioning vacuum extractor with different size cups, functioning obstetric forceps (outlet or other type); **RESUSCITATION OF NEWBORN WITH BAG AND MASK** - functioning ambu bag, infant face masks and mucus extractor; **BLOOD TRANSFUSION** - microscope, reagents for blood typing, empty blood bags, functioning refrigerator for blood bank; **OBSTETRIC SURGERY/CESAREAN** - functioning anesthesia machine, halothane or ketamine in stock, functioning oxygen cylinders, operating table, functioning adjustable light
2. Health worker to perform the SF means facility reported at least one health worker currently working who could provide the signal function at the facility.

**Table 3.07A List of facilities surveyed, EmONC classification and signal functions performed in the last 3 months**

| REGION  | FACILITIES THAT DO DELIVERY        | EmONC STATUS  | SIGNAL FUNCTIONS      |                      |                |                            |                 |                           |                       |                   |                    |     |
|---------|------------------------------------|---------------|-----------------------|----------------------|----------------|----------------------------|-----------------|---------------------------|-----------------------|-------------------|--------------------|-----|
|         |                                    |               | Parenteral Antibiotic | Parenteral Oxytocics | anticonvulsant | manual removal of placenta | retain Products | assisted vaginal delivery | Newborn resuscitation | Blood Transfusion | caesarean delivery |     |
| Ashanti | ASAMANG CHPS ZONE                  | NON EmONC     | YES                   | YES                  | NO             | NO                         | NO              | NO                        | NO                    | YES               | NO                 | NO  |
| Ashanti | KENIAGO HEALTH CENTRE              | NON EmONC     | YES                   | YES                  | NO             | YES                        | NO              | NO                        | NO                    | NO                | NO                 | NO  |
| Ashanti | ST. MARTINS HOSPITAL, AGROYESUM    | COMPREHENSIVE | YES                   | YES                  | YES            | YES                        | YES             | YES                       | YES                   | YES               | YES                | YES |
| Ashanti | NKAN COMMUNITY CLINIC              | NON EmONC     | YES                   | YES                  | NO             | NO                         | NO              | NO                        | NO                    | NO                | NO                 | NO  |
| Ashanti | TONTORKROM HEALTH CENTRE           | NON EmONC     | YES                   | YES                  | YES            | NO                         | NO              | NO                        | NO                    | YES               | NO                 | NO  |
| Ashanti | WATRESO METHODIST SHALOM CLINIC    | NON EmONC     | NO                    | YES                  | YES            | NO                         | NO              | NO                        | NO                    | YES               | NO                 | NO  |
| Ashanti | ESSOUWIN HEALTH CENTRE             | NON EmONC     | NO                    | YES                  | NO             | NO                         | NO              | NO                        | NO                    | NO                | NO                 | NO  |
| Ashanti | MPATUOM NYAME AKWAN MATERNITY HOME | NON EmONC     | YES                   | YES                  | NO             | NO                         | NO              | NO                        | NO                    | NO                | NO                 | NO  |
| Ashanti | MANSO ABORE HEALTH CENTRE          | PARTIAL EmONC | YES                   | YES                  | YES            | YES                        | YES             | YES                       | NO                    | NO                | NO                 | NO  |
| Ashanti | ANTOAKROM HEALTH CENTRE            | NON EmONC     | YES                   | YES                  | NO             | YES                        | NO              | NO                        | NO                    | NO                | NO                 | NO  |

|         |  |               |     |     |     |     |     |     |     |     |     |
|---------|--|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ashanti | MANSO EDUBIA HEALTH CENTRE               | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | NEW EDUBIASE GOVERNMENT HOSPITAL         | PARTIAL EmONC | YES | YES | NO  | YES | YES | YES | YES | YES | YES |
| Ashanti | AKUTRESO HEALTH CENTRE                   | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | BONSU COMMUNITY CLINIC                   | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | ATAASE HEALTH CENTRE                     | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | FUMSO MATERNITY HOME                     | NON EmONC     | NO  | YES | NO  | NO  | YES | NO  | YES | NO  | NO  |
| Ashanti | ANWHIASO HEALTH CENTRE                   | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Ashanti | FOMENA HEALTH CENTRE                     | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | WIOSO HEALTH CENTRE                      | NON EmONC     | YES | YES | NO  | NO  | YES | NO  | YES | NO  | NO  |
| Ashanti | ABOABO HEALTH CENTRE                     | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | TWUMWAA MATERNITY HOME                   | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | OBUASI GOVERNMENT HOSPITAL               | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Ashanti | ST JOHN'S MATERNITY CLINIC               | PARTIAL EmONC | YES | YES | NO  | YES | YES | YES | YES | NO  | NO  |
| Ashanti | OBUASI ANGLOGOLD HOSPITAL                | NON EmONC     | YES | YES | NO  | YES | YES | NO  | NO  | YES | YES |
| Ashanti | ST CECILIA'S MATERNITY HOME              | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Ashanti | OBUASI BRYANT MISSION (DR. SAM) HOSPITAL | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Ashanti | OBUASI ST. JUDE HOSPITAL                 | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | YES | NO  |
| Ashanti | EMMANUEL MATERNITY HOME                  | NON EmONC     | NO  | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Ashanti | ST. PETERS, JACOB                        | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Ashanti | PAKYI NO 2 DORA'S MATERNITY HOME         | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Ashanti | BEKWAI GOVERNMENT HOSPITAL               | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Ashanti | DOMINASE SDA HOSPITAL                    | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Ashanti | KORTWIA AKOMAA MEMORIAL SDA HOSPITAL     | NON EmONC     | YES | YES | NO  | NO  | YES | NO  | NO  | YES | YES |
| Ashanti | KOKOFU AHMADIYYA HOSPITAL                | NON EmONC     | YES | YES | NO  | NO  | YES | NO  | NO  | NO  | YES |
| Ashanti | BEKWAI AHWENE MEMORIAL HOSPITAL          | NON EmONC     | YES | YES | NO  | YES | YES | NO  | NO  | NO  | NO  |

|         |                                    |               |     |     |     |     |     |     |     |     |     |
|---------|------------------------------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ashanti | KOKOFU GOVERNMENT HOSPITAL         | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Ashanti | ABENKYIMAN CLINIC ANWIANKWANTA     | PARTIAL EmONC | YES | YES | NO  | NO  | YES | YES | YES | NO  | NO  |
| Ashanti | BOANIM HEALTH CENTRE               | NON EmONC     | YES | NO  | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Ashanti | AGONA GOVERNMENT HOSPITAL          | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Ashanti | KONA HEALTH CENTRE                 | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | JAMASI HEALTH CENTRE               | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Ashanti | BEPOASE SACRED HEART HEALTH CENTRE | PARTIAL EmONC | YES | YES | NO  | YES | YES | NO  | YES | NO  | NO  |
| Ashanti | ASAMANG SDA HOSPITAL               | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | YES | YES |
| Ashanti | MAMPONG GOVERNMENT HOSPITAL        | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Ashanti | ASUBUASO HEALTH CENTRE             | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | NSUTAMAN HEALTH CENTRE             | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Ashanti | ADIDWAN HEALTH CENTRE              | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Ashanti | KOFIASE HEALTH CENTRE              | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Ashanti | ASAAM HEALTH CENTRE                | NON EmONC     | YES | YES | NO  | NO  | YES | NO  | YES | NO  | NO  |
| Ashanti | PHILLIPA MATERNITY HOME            | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Ashanti | ANYINASU ST. ANTHONY HEALTH CENTRE | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | SEKYEDUMAS HEALTH CENTRE           | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Ashanti | ST. LUKE HOSPITAL, KASEI           | PARTIAL EmONC | YES | YES | YES | NO  | YES | NO  | YES | YES | YES |
| Ashanti | EJURA DIST HOSPITAL                | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Ashanti | TEPA GOVERNMENT HOSPITAL           | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | NO  | YES | YES |
| Ashanti | MANFO HEALTH CENTRE                | NON EmONC     | YES | YES | NO  | NO  | YES | NO  | NO  | NO  | NO  |
| Ashanti | AKWASIASE ANANE AYA MATERNITY HOME | PARTIAL EmONC | YES | YES | NO  | YES | YES | YES | YES | NO  | NO  |
| Ashanti | BETIAKO HEALTH CENTRE              | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | ADUGYAMA ST EDWARD MATERNITY HOME  | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | SABRONUM HEALTH CENTRE             | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |

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|---------|--|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ashanti | POKUKROM HEALTH CENTRE                   | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | MPASAASO HEALTH CENTRE                   | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | NO  | NO  | NO  |
| Ashanti | ESSIBEY NKWANTA ST ANNS MATERNITY HOME   | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | MANKRANSO GOVERNMENT HOSPITAL            | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | YES | YES |
| Ashanti | BEPOSO HEALTH CENTRE                     | NON EmONC     | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | BENIM HEALTH CENTRE                      | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | ATONSU HEALTH CENTRE                     | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | KWAMANG HEALTH CENTRE                    | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | BRIEM HEALTH CENTRE                      | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | OKU CATHOLIC CLINIC                      | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | WIOSO HEALTH CENTRE                      | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | KENYASI HEALTH CENTRE                    | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Ashanti | ST. JOSEPH CLINIC (ABIRA)                | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | ABANWOMASE EYE AWURADE MATERNITY HOME    | NON EmONC     | NO  | YES | NO  | YES | YES | NO  | NO  | NO  | NO  |
| Ashanti | ASONOMASO GOVERNMENT HOSPITAL            | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Ashanti | ABOASO HEALTH CENTER                     | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | NTONSO CHRIST OUR HOME MATERNITY HOME    | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | METHODIST FAITH HEALING HOSPITAL-ANKAASE | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Ashanti | MAAME ROSE MATERNITY HOME                | NON EmONC     | NO  | YES | YES | YES | NO  | YES | NO  | NO  | NO  |
| Ashanti | ADWUMAICAASE-KESE HEALTH CENTRE          | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Ashanti | MAMPONTENG HEALTH CENTRE                 | PARTIAL EmONC | YES | YES | NO  | YES | YES | NO  | YES | NO  | NO  |
| Ashanti | NKENKAASU GOVT. HOSPITAL                 | PARTIAL EmONC | YES | YES | NO  | YES | YES | YES | YES | YES | YES |
| Ashanti | JANIE SPEAKS AME ZION CLINIC AFRANCHO    | NON EmONC     | NO  | YES | YES | YES | YES | NO  | NO  | NO  | NO  |

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| Ashanti | AKOMADAN HEALTH CENTRE                        | PARTIAL EmONC | NO  | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Ashanti | ABOFOUR HEALTH CENTRE                         | NON EmONC     | NO  | YES | NO  | YES | YES | NO  | YES | NO  | NO  |
| Ashanti | JOY MATERNITY HOME,<br>MAMPONTENG             | NON EmONC     | YES | YES | NO  | NO  | YES | NO  | YES | NO  | NO  |
| Ashanti | AFRICAN DIASPORA CLINIC AND<br>MATERNITY HOME | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Ashanti | ST PATRICKS HOSPITAL<br>OFFINSO               | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Ashanti | OFFINSO HEALTH CENTRE                         | NON EmONC     | NO  | NO  | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | FAMILY CARE HOSPITAL-KODIE,<br>MOWIRE         | NON EmONC     | YES | YES | YES | NO  | YES | NO  | YES | NO  | YES |
| Ashanti | GLADYS MATERNITY HOME,<br>KODIE               | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Ashanti | KWAMANG HEALTH CENTRE.                        | NON EmONC     | NO  | YES | NO  | NO  | NO  | YES | NO  | NO  | NO  |
| Ashanti | BOAMANG HEALTH CENTRE                         | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Ashanti | TETREM HEALTH CENTER                          | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | KYEKEYWERE HEALTH CENTRE                      | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | JELOA MATERNITY HOME AND<br>CLINIC-BUOHO      | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | ASUOFUA HEALTH CENTRE                         | NON EmONC     | NO  | YES | NO  | NO  | YES | NO  | NO  | NO  | NO  |
| Ashanti | BAREKESE HEALTH CENTRE                        | PARTIAL EmONC | YES | YES | NO  | YES | YES | NO  | YES | NO  | NO  |
| Ashanti | CEDAR CREST HOSPITAL-<br>ASUOFUA              | PARTIAL EmONC | NO  | YES | YES | YES | YES | YES | YES | NO  | NO  |
| Ashanti | ACHIASE NYAMA MATERNITY<br>HOME               | NON EmONC     | NO  | NO  | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Ashanti | ANGLICAN HEALTH CENTRE-<br>TANO-ODUMASI       | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | GYERESO HEALTH CENTRE                         | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | BAYEREBON HEALTH CENTRE                       | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | SERESO TIMPOM HEALTH<br>CENTRE                | NON EmONC     | NO  | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Ashanti | KOTOKROM HEALTH CENTER                        | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | SAAKROM HEALTH CENTRE                         | NON EmONC     | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  |

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| Ashanti | ST PETER'S CLINIC NTOBROSO                  | PARTIAL EmONC | YES | YES | NO  | YES | NO  | YES | YES | NO  | NO  |
| Ashanti | NYINAHIN GOVERNMENT HOSPITAL                | NON EmONC     | NO  | YES | YES | YES | NO  | NO  | YES | YES | YES |
| Ashanti | SEPAASE GOD IS ABLE MATERNITY HOME          | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | ABUAKWA HEALTH CENTRE                       | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | NKAWIE-TOASE GOVERNMENT HOSPITAL            | PARTIAL EmONC | YES | YES | YES | YES | YES | YES | NO  | YES | YES |
| Ashanti | AKROPONG HEALTH CENTER                      | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Ashanti | KOFORIDUA ANTWI'S MATERNITY HOME            | NON EmONC     | NO  | YES | YES | NO  | YES | NO  | YES | NO  | NO  |
| Ashanti | MADONNA HEALTH SERVICES-ASENEMASO           | PARTIAL EmONC | YES | YES | YES | YES | YES | YES | NO  | NO  | YES |
| Ashanti | ASAFO AGYEI HOSPITAL DABAN                  | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | AHODWO NEW CROSS HOSPITAL                   | NON EmONC     | YES | YES | NO  | NO  | YES | NO  | YES | YES | YES |
| Ashanti | KAASE MATERNITY HOME                        | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | NEW LIFE MATERNITY CLINIC                   | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | FLORENCE MATERNITY HOME - ANLOGA            | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Ashanti | OFORIKROM HOSPITAL                          | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Ashanti | SEPE DOTE CLINIC                            | NON EmONC     | YES | YES | NO  | NO  | YES | NO  | YES | NO  | NO  |
| Ashanti | COMFORT MATERNITY HOME-ODUOM                | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | AMAMATA MATERNITY HOME CLINIC-SAWABA        | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | OWUSUAA MATERNITY HOME - ADUKROM            | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | DR OSEI HOSPITAL-AKOREM                     | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Ashanti | KNUST HOSPITAL KUMASI                       | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Ashanti | QUEEN VICTORIA MATERNITY HOME/CLINIC-ANLOGA | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Ashanti | HAPPY DAY MATERNITY HOME                    | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |

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| Ashanti | GOD'S GLORY HOSPITAL                      | BASIC         | YES | YES | YES | YES | YES | YES | YES | YES | NO  |
| Ashanti | ADABSAB MATERNITY HOME                    | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | KROPO CHARITY HOSPITAL                    | NON EmONC     | NO  | YES | NO  | YES | YES | NO  | YES | NO  | NO  |
| Ashanti | AYIWA MATERNITY HOME                      | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Ashanti | SHALOM MATERNITY CLINIC                   | NON EmONC     | YES | YES | YES | NO  | NO  | YES | NO  | NO  | NO  |
| Ashanti | CENTRAL MATERNITY HOME                    | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | GANSMENE MEDICAL CENTRE                   | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | YES |
| Ashanti | HOLY ROSARY MATERNITY HOME                | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | OLD TAFO SIAW LARBI CLINIC                | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Ashanti | TAFO HOSPITAL                             | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Ashanti | WISDOM HOSPITAL, KRONUM KRAPA             | BASIC         | YES | YES | YES | YES | YES | YES | YES | NO  | YES |
| Ashanti | KEFFAM HEALTH SERVICES                    | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | YES |
| Ashanti | BABY PEARL MATERNITY CLINIC               | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Ashanti | MAMMIE MATERNITY HOME                     | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | BOAKYE DANKWA MEMORIAL HOSPITAL, DICHEMSO | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | KEZIA MATERNITY HOME                      | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Ashanti | MANHYIA HOSPITAL                          | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Ashanti | ASH TOWN CLINIC                           | NON EmONC     | YES | YES | YES | YES | YES | NO  | NO  | YES | NO  |
| Ashanti | QUALITY HEALTHCARE LTD                    | NON EmONC     | YES | YES | NO  | NO  | NO  | YES | YES | NO  | YES |
| Ashanti | APATRAPA COMMUNITY CLINIC                 | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Ashanti | COUNTY HOSPITAL                           | NON EmONC     | YES | YES | NO  | NO  | YES | YES | NO  | NO  | YES |
| Ashanti | MAJERO MATERNITY HOME                     | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | TESSY EBENEZER MATERNITY CLINIC           | PARTIAL EmONC | YES | YES | NO  | YES | YES | NO  | YES | NO  | NO  |
| Ashanti | AMPABAME MATERNITY CLINIC                 | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | SUNTRESO GOST. HOSPITAL                   | NON EmONC     | YES | YES | YES | NO  | YES | NO  | YES | NO  | YES |
| Ashanti | MARANATH HEALTH SERVICES                  | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | YES |
| Ashanti | TRUST CARE SPECIALIST CLINIC              | PARTIAL EmONC | YES | YES | YES | NO  | YES | NO  | YES | YES | YES |
| Ashanti | MAGAZINE CLINIC                           | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | YES | YES |
| Ashanti | PHILIPO MATERNITY HOME                    | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |

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| Ashanti | SILOAM HOSPITAL                       | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | YES |
| Ashanti | LIVING WATERS MATERNITY HOME          | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Ashanti | SDA HOSPITAL                          | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Ashanti | WEST END HOSPITAL                     | PARTIAL EmONC | YES | YES | YES | NO  | YES | NO  | YES | YES | YES |
| Ashanti | ATASOMANSO HOSPITAL                   | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | YES |
| Ashanti | ADIEBEBA HOSPITAL                     | NON EmONC     | YES | YES | YES | YES | NO  | NO  | YES | YES | NO  |
| Ashanti | ANNOMASO COMMUNITY CLINIC             | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | ANINWA MEDICAL CENTRE                 | PARTIAL EmONC | YES | YES | YES | NO  | YES | YES | YES | YES | YES |
| Ashanti | 4 MILITARY RECEPTION STATION          | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | MATERNAL AND CHILD HEALTH HOSPITAL    | NON EmONC     | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Ashanti | AYEDUASE COMMUNITY CLINIC             | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | BOMSOM CLINIC                         | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | YES |
| Ashanti | KOMFO ANOKYE TEACHING HOSPITAL        | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Ashanti | MAME SER MATERNITY HOME               | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | KUMASI SOUTH HOSPITAL                 | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Ashanti | KWANWOMA HEALTH CENTRE                | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | ABURASO METHODIST CLINIC              | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | TREDE HEALTH CENTRE                   | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | FOASE HEALTH CENTRE                   | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | TRABUOM HEALTH CENTRE                 | NON EmONC     | NO  | YES | NO  | YES | YES | NO  | YES | NO  | NO  |
| Ashanti | ESERESO DIVINE MERCY HOSPITAL         | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | NO  | YES |
| Ashanti | JACHIE HEALTH CENTRE                  | PARTIAL EmONC | YES | YES | NO  | YES | YES | NO  | YES | NO  | NO  |
| Ashanti | PRAMSOM ST MICHAEL HOSPITAL           | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Ashanti | KUNTENASE GOVERNMENT HOSPITAL         | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | YES | YES |
| Ashanti | AMAKOM LAKE BOSOMTWE METHODIST CLINIC | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |



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| Ashanti | BRODEKWANO METHODIST CLINIC          | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | DROBONSO ST. VINCENT CLINIC          | PARTIAL EmONC | YES | YES | YES | NO  | YES | YES | YES | NO  | NO  |
| Ashanti | WORASO HEALTH CENTRE                 | NON EmONC     | YES | YES | NO  | NO  | YES | NO  | YES | NO  | NO  |
| Ashanti | BANKO HEALTH CENTRE                  | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | BODAMASE PEACE&COMFORT MAT.          | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | KUMAWU HEALTH CENTRE                 | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | JESUS CARE VOLUNTARY CLINIC (BESORO) | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | EFFIDUASE GOVT. HOSPITAL             | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Ashanti | SENCHEI METHODIST CLINIC             | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | SENIAGYA ST. LUKE SOCIETY            | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | OKAIKROM MCH/FP CENTRE               | NON EmONC     | NO  | YES | YES | NO  | YES | NO  | NO  | NO  | NO  |
| Ashanti | ASIWA HEALTH CENTRE                  | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | ACHIASE HEALTH CENTRE                | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Ashanti | DUNCURA HEALTH CENTRE                | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Ashanti | ONWE GOVERNMENT HOSPITAL             | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | ESSIENIPONG CHURCH OF GOD MISSION    | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | KWASO HEALTH CENTRE                  | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Ashanti | AGOGO PRESBY HOSPITAL                | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Ashanti | JUANA HEALTH CENTRE                  | NON EmONC     | YES | YES | NO  | NO  | YES | NO  | NO  | NO  | NO  |
| Ashanti | ANANEKROM HEALTH CENTRE              | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti | DWEASE HEALTH CENTRE                 | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | PRAASO HEALTH CENTRE                 | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | KONONGO/ODUMASI GOVT.HOSPITAL        | PARTIAL EmONC | YES | YES | YES | NO  | YES | YES | YES | YES | YES |
| Ashanti | BANICA HEALTH CENTRE                 | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti | JUASO HOSPITAL                       | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Ashanti | KWAMO MAMA TINA'S METERNITY HOME     | BASIC         | YES | YES | YES | YES | YES | YES | YES | NO  | NO  |

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|-------------|--------------------------------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ashanti     | HUTTEL HEALTH CENTRE                 | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti     | JUABEN GOVT. HOSPITAL                | PARTIAL EmONC | YES | YES | YES | NO  | YES | YES | YES | YES | YES |
| Ashanti     | BOMFA HEALTH CENTRE                  | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Ashanti     | EJISU GOVT. HOSPITAL                 | NON EmONC     | YES | YES | YES | NO  | YES | NO  | YES | NO  | YES |
| Ashanti     | JESUS IS LORD MATERNITY HOME         | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Ashanti     | ST.ANNE'S MATERNITY CLINIC           | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | NKORANZA HEALTH CENTRE               | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | BONSU HEALTH CENTER                  | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | NKWABENG HEALTH CENTRE               | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | ST.THERESA HOSPITAL                  | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Brong Ahafo | DONKRO-NKWANTA CLINIC                | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | AKUMA CLINIC                         | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | AYEREDE CLINIC                       | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | AHYIAYEM CLINIC                      | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | AMMASUA HEALTH CENTRE                | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | ABOABO PRESBY.CLINIC                 | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | KWAMEASUA PRESBYTERIAN HEALTH CENTRE | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | KYEREMASU PRESBY. HEALTH CENTRE      | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | KWADWO-KUMIKROM PRESBY.CLINIC        | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |

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| Brong Ahafo | NKRANKWATA HEALTH CENTRE        | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | CECI'S MATERNITY HOME           | NON EmONC     | NO  | YES | YES | NO  | YES | NO  | NO  | NO  | NO  |
| Brong Ahafo | DANYAMI HEALTH CENTRE           | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | FLORENCE MATERNITY HOME         | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Brong Ahafo | DORMAA PRESBY HOSPITAL          | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Brong Ahafo | DORMAA AKWAMU H/C               | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | WAMFIE HEALTH CENTER            | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | RACHEL'S MATERNITY HOME         | NON EmONC     | NO  | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | BISHOP MATTHEW COMMUNITY CLINIC | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | ST. MARY'S HOSPITAL DROBO       | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Brong Ahafo | ZEZERA HEALTH CENTRE            | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | ADAMSU HEALTH CENTRE            | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | JEJEMIRIJA PRESBY. CLINIC       | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | SUMA AHENKRO HEALTH CENTRE      | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | SAMPA HOSPITAL                  | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Brong Ahafo | GOKA HEALTH CENTRE              | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | DABIBI HEALTH CENTER            | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |

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| Brong Ahafo | NSAWKAW HEALTH CENTRE       | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | NYARKO MATERNITY HOME       | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | BADU HEALTH CENTRE          | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | WENCHI METHODIST HOSPITAL   | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Brong Ahafo | EMIL MEMORIAL HOSPITAL      | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Brong Ahafo | GOV'T MATERNITY HOME        | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | NYAASE ROYAL MATERNITY HOME | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | NCHIRAG RURAL CLINIC        | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | SUBINSO HEALTH CENTRE       | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | SENE DISTRICT HOSPITAL      | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Brong Ahafo | AUNTY JOE'S MATERNITY HOME  | NON EmONC     | NO  | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | AMANTIN HEALTH CENTRE       | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | ATEBUBU DISTRICT HOSPITAL   | BASIC         | YES | YES | YES | YES | YES | YES | YES | YES | NO  |
| Brong Ahafo | MATHIAS CATHOLIC HOSP.      | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Brong Ahafo | PARAMBO HEALTH CENTRE       | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | PRANG HEALTH CENTRE         | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | BERNICE MAT. HOME           | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |

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| Brong Ahafo | ABEASE HEALTH CENTRE                 | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | GLORY PRINCE OF PEACE MATERNITY HOME | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | KINTAMPO NORTH MUNICIPAL HOSPITAL    | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Brong Ahafo | KINTAMPO SOUTH DISTRICT HOSPITAL     | NON EmONC     | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Brong Ahafo | ANYIMA HEALTH CENTRE                 | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | AMOMA HEALTH CENTRE                  | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | BUSUYA HEALTH CENTRE                 | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | DROMANKESE HEALTH CENTRE             | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | YEFRI HEALTH CENTRE                  | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | KRANKA HEALTH CENTRE                 | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | AWOROWO HEALTH CENTRE                | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | GINA'S MATERNITY HOME                | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | ALICE MATERNITY HOME                 | NON EmONC     | YES | YES | NO  | NO  | YES | NO  | YES | NO  | NO  |
| Brong Ahafo | NKWANHIA MATERNITY HOME/CLINIC       | NON EmONC     | YES | YES | NO  | NO  | YES | NO  | YES | NO  | NO  |
| Brong Ahafo | ARMS MATERNITY HOME/CLINIC           | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | OPOKU AGYEMAN HOSPITAL               | PARTIAL EmONC | YES | YES | NO  | YES | YES | NO  | YES | YES | YES |
| Brong Ahafo | TANOSO HEALTH CENTRE                 | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |

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| Brong Ahafo | KORANTENG MEMORIAL MATERNITY HOME | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | OFFUMAN HEALTH CENTRE             | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | NSUTA HEALTH CENTRE               | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | HOLY FAMILY HOSPITAL              | PARTIAL EmONC | YES | YES | YES | NO  | YES | YES | YES | YES | YES |
| Brong Ahafo | OPOKU CLINIC                      | NON EmONC     | YES | YES | NO  | NO  | YES | NO  | NO  | NO  | NO  |
| Brong Ahafo | CHIRAA HEALTH CENTRE              | PARTIAL EmONC | YES | YES | YES | NO  | YES | NO  | YES | NO  | NO  |
| Brong Ahafo | MERCY MATERNITY HOME              | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | HANNAA MATERNITY HOME             | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | BOFOURKROM HEALTH CENTRE          | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | FLORENCE MATERNITY HOME           | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | GREENHILL CLINIC                  | PARTIAL EmONC | YES | YES | YES | NO  | YES | NO  | YES | YES | YES |
| Brong Ahafo | AMPONSAAH MEMORIAL MATERNITY HOME | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | NSOATRE HEALTH CENTRE             | NON EmONC     | YES | YES | NO  | NO  | NO  | YES | YES | NO  | NO  |
| Brong Ahafo | CHRISTIES MATERNITY HOME          | NON EmONC     | NO  | YES | YES | NO  | YES | NO  | YES | NO  | NO  |
| Brong Ahafo | ANGELS MATERNITY HOME             | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | GOASO HOSPITAL                    | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Brong Ahafo | AGYEI MENSAH MATERNITY HOME       | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |

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| Brong Ahafo | FAWOHOYEDEN HEALTH CENTER     | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | AKRODIE HEALTH CENTRE         | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | ASUMURA HEALTH CENTRE         | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | VICTORIA ANANE MATERNITY HOME | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | SANKORE HEALTH CENTRE         | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | KUKUOM HEALTH CENTRE          | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | ST. ELIZABETH HOSPITAL        | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Brong Ahafo | SIENKYEMU HEALTH CENTRE       | NON EmONC     | NO  | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | DADIESOABA HEALTH CENTRE      | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | NYAMEADOM MATERNITY HOME      | PARTIAL EmONC | YES | YES | NO  | NO  | YES | YES | YES | NO  | NO  |
| Brong Ahafo | ESTHER MAT HOME               | NON EmONC     | NO  | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | KENYASI HEALTH CENTRE         | PARTIAL EmONC | YES | YES | NO  | YES | NO  | YES | YES | NO  | NO  |
| Brong Ahafo | ST ELIZABETH MATERNITY HOME   | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | GAMBIA NO1 HEALTH CENTRE      | NON EmONC     | NO  | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | ACHERANSUA H/C                | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | GYEDU HEALTH CENTRE           | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | TECHIMANTIA HEALTH CENTER     | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |

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| Brong Ahafo | DERMA HEALTH CENTER        | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | TRINITY MATERNITY HOME     | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | BECHEM HOSPITAL            | PARTIAL EmONC | YES | YES | NO  | YES | YES | YES | YES | YES | YES |
| Brong Ahafo | BOMAA HEALTH CENTRE        | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | YAMFO HEALTH CENTRE        | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | TANASO HEALTH CENTRE       | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | ADROBAA HEALTH CENTRE      | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | ST. JOHN OF GOD HOSPITAL   | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Brong Ahafo | EMI MATERNITY HOME         | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | AGGIE'S MATERNITY HOME     | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | PALM AVENUE MATERNITY HOME | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | PHILO'S MATERNITY HOME     | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Brong Ahafo | KORASO HEALTH CENTRE       | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | JINIJINI HEALTH CENTRE     | PARTIAL EmONC | NO  | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Brong Ahafo | BOTOKROM HEALTH CENTRE     | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | HOLY FAMILY HOSPITAL       | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | YES | YES |
| Brong Ahafo | SUNYANI REGIONAL HOSPITAL  | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |



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| Brong Ahafo | OWUSU MEMORIAL HOSPITAL             | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | SUNYANI MUNICIPAL HOSPITAL          | PARTIAL EmONC | YES | YES | NO  | YES | YES | NO  | YES | YES | YES |
| Brong Ahafo | S.D.A HOSPITAL                      | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | YES | YES |
| Brong Ahafo | MONICA MATERNITY HOME               | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Brong Ahafo | ANTWIKROM HEALTH CENTRE             | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Central     | TWIFU PRASO DISTRICT HOSPITAL       | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Central     | ST FLORENCE MEMORIAL MATERNITY HOME | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Central     | TWIFO HEMANG HEALTH CENTRE          | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Central     | FRAMI HEALTH CENTRE                 | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | NO  | NO  | NO  |
| Central     | JUKWA HEALTH CENTRE                 | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Central     | MOKWAA HEALTH CENTRE                | PARTIAL EmONC | YES | YES | NO  | YES | NO  | YES | YES | NO  | NO  |
| Central     | DUNKWA MUNICIPAL HOSPITAL           | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Central     | ST. MARK HOSPITAL                   | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Central     | OPPONSO HEALTH CENTRE               | PARTIAL EmONC | YES | YES | YES | YES | NO  | YES | NO  | NO  | NO  |
| Central     | KYEKEYWERE HEALTH CENTRE            | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Central     | SDA CLINIC                          | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Central     | DIASO HEALTH CENTRE                 | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Central     | PENTECOST CLINIC                    | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Central     | PRESBYTERIAN HEALTH CENTRE          | PARTIAL EmONC | YES | YES | NO  | YES | YES | YES | NO  | NO  | NO  |
| Central     | BEREKU HEALTH CENTRE                | NON EmONC     | NO  | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Central     | REX CLINIC & MATERNITY HOME         | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Central     | BEDIADUA HEALTH CENTRE              | NON EmONC     | YES | YES | YES | NO  | YES | NO  | NO  | NO  | NO  |
| Central     | ST FRANCIS XAVIER HOSPITAL          | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Central     | CECILIA AND SAMMY                   | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |

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|         | MEMORIAL MATERNITY HOME              |               |     |     |     |     |     |     |     |     |     |
| Central | PRESBY HEALTH CENTRE                 | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Central | ONGWA HEALTH CENTRE                  | NON EmONC     | NO  | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Central | ANYINABRIM HEALTH CENTRE             | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Central | ASSIN MANSO HEALTH CENTRE            | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Central | NYANKOMASI AHENKRO HEALTH CENTRE     | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Central | JAKAI HEALTH CENTRE                  | PARTIAL EmONC | YES | YES | YES | NO  | YES | NO  | YES | NO  | NO  |
| Central | EWIM URBAN HEALTH CENTER             | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Central | ADISADEL URBAN HEALTH CENTRE         | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Central | UNIVERSITY HOSPITAL C/C              | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | YES |
| Central | ELMINA URBAN HEALTH CENTRE           | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Central | ANKAFUL LEPROSY GENERAL HOSPITAL     | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | YES | NO  |
| Central | AGONA HEALTH CENTRE                  | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Central | KISSI HEALTH CENTRE                  | PARTIAL EmONC | YES | YES | YES | NO  | YES | NO  | YES | NO  | NO  |
| Central | KOMENDA HEALTH CENTRE                | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Central | NYAME TEASE MATERNITY HOME           | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Central | BIRIWA COMMUNITY CLINIC              | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Central | KOMANTSE CLINIC                      | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Central | PRINCE CHARLES CLINIC                | NON EmONC     | NO  | YES | YES | YES | YES | NO  | NO  | YES | NO  |
| Central | FYNBA HOSPITAL                       | NON EmONC     | NO  | YES | NO  | NO  | NO  | YES | NO  | NO  | YES |
| Central | GOD'S GIFT MATERNITY HOME AND CLINIC | NON EmONC     | YES | YES | NO  | NO  | YES | NO  | NO  | NO  | NO  |
| Central | ST ANTHONY MATERNITY HOME            | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Central | NANABENG CHPS                        | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Central | NARKWA CHPS                          | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Central | OTUAM HEALTH CENTRE                  | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |

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| Central | ABURA DUNKWA GOV'T HOSPITAL   | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Central | ABAKRAMPA HEALTH CENTRE       | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Central | ASUANSI RURAL CLINIC          | NON EmONC     | NO  | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Central | OUR LADY OF GRACE HOSPITAL    | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Central | BREMAN BEDUM COMMUNITY CLINIC | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Central | ANHWIAM CHPS ZONE             | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Central | BRAKWA HEALTH CENTRE          | NON EmONC     | YES | YES | NO  | NO  | YES | NO  | NO  | NO  | NO  |
| Central | ODOBEN HEALTH CENTRE          | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Central | AMANFOPONG CHPS               | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Central | BISEASE HEALTH                | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Central | ASUMAKO DISTRICT HOSPITAL     | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Central | ABAASA HEALTH CENTRE          | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Central | SALVATION ARMY CLINIC         | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Central | NKWANTANUM HEALTH CENTRE      | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Central | ANN'S MATERNITY HOME          | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Central | KWANYAKO COMMUNITY CLINIC     | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Central | AYINASU CHPS                  | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Central | WINNEBA MUNICIPAL HOSPITAL    | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Central | BETHEL MATERNITY HOME         | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Central | OKYEREKO COMMUNITY CLINIC     | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Central | BUDUATTA HEALTH CENTRE        | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | .   | NO  | NO  |
| Central | SENYA HEALTH CENTRE           | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Central | NYANYANO COMMUNITY CLINIC     | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Central | NAADOM MATERNITY HOME         | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Central | CENTRAL KASOA CLINIC          | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Central | MARGO MATERNITY HOME          | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Central | BAWJIASE HEALTH CENTRE        | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |

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| Central | HOLY FAMILY MATERNITY        | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Central | CONNIES MATERNITY HOME       | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Central | KASOA HEALTH CENTRE          | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Central | ST.GEGORY CATHOLIC CLINIC    | NON EmONC     | YES | YES | YES | NO  | YES | NO  | NO  | NO  | NO  |
| Central | JUSTAB CLINIC                | NON EmONC     | YES | YES | NO  | YES | YES | NO  | NO  | NO  | NO  |
| Central | AWUTU HEALTH CENTRE          | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Central | BONTRASE HEALTH CENTRE       | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Central | SWEDRU GOVERNMENT HOSPITAL   | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Central | MENSAKROM CLINIC             | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Central | NYAKROM HEALTH CENTRE        | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Central | NKUM HEALTH CENTRE           | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Central | ASAFO HEALTH CENTRE          | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Central | KWANYAKO HEALTH CENTRE       | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Central | MANKRONG HEALTH CENTRE       | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Central | EL-SHADAI MATERNITY HOME     | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Central | SALVATION ARMY CLINIC        | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Central | BOBIKUMA HEALTH CENTRE       | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Central | ABODOM HEALTH CENTRE         | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Central | APAM CATHOLIC HOSPITAL       | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | YES | YES |
| Central | NSABA HEALTH CENTRE          | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Central | ESHIEM CHPS                  | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Central | TAKWA CHPS COMPOUND          | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Central | OGUAA HEALTH CENTRE          | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Central | OSEDZIE CHPS COMPOUND        | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Central | DERGEWA MATERNITY HOME       | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Central | OBUASI COMMUNITY CLINIC      | PARTIAL EmONC | YES | YES | YES | YES | NO  | YES | YES | NO  | NO  |
| Central | GODFREY MATERNITY HOME       | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Central | NGYIRESI CHPS COMPOUND       | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Central | REGIONAL HOSPITAL            | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Central | METRO HOSPITAL               | PARTIAL EmONC | YES | YES | NO  | YES | YES | YES | YES | YES | YES |
| Central | SALTPOND GOVERNMENT HOSPITAL | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |

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|---------|---|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Central | MOREE HEALTH CENTRE                     | PARTIAL EmONC | YES | YES | NO  | YES | YES | YES | NO  | NO  | NO  |
| Central | ANOMABO HEALTH CENTRE                   | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Central | DOMINASE HEALTH CENTER                  | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Central | ESSEUHYIA HEALTH CENTRE                 | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | NTONABOMA CHPS ZONE                     | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | PRESBYTERIAN HOSPITAL<br>DONKORKROM     | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Eastern | TEASE PRESBY. HEALTH CENTRE             | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Eastern | HOLY SPIRIT HEALTH CENTRE               | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Eastern | EKYE PRESBY HEALTH CENTRE               | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Eastern | NKYENENKYENE HEALTH<br>CENTRE           | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Eastern | KWAHU AMANFROM CHPS<br>ZONE             | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | BEGORO DISTRICT HOSPITAL                | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Eastern | SALVATION ARMY                          | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | BUNSO HEALTH CENTRE                     | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | OSINO HEALTH CENTRE                     | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | ANYINAM HEALTH CENTRE                   | NON EmONC     | NO  | YES | NO  | NO  | YES | NO  | YES | NO  | NO  |
| Eastern | ASAKRAKA CHPS ZONE                      | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | ST. JOSEPH'S CLINIC &<br>MATERNITY HOME | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | BEPONG RCH CENTRE                       | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | OBO HEALTH                              | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Eastern | NKWATIA HEALTH CENTRE                   | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | ASUBONI CHPS ZONE                       | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | KWAHU PRASO HEALTH CENTRE               | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | AWEREGYA HEALTH CENTRE                  | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | APRADANG HEALTH CENTRE                  | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | KWAHU GOVERNMENT<br>HOSPITAL            | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | YES | YES |
| Eastern | ST.MICHEAL MATERNITY HOME               | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | HWEEHWEE CHPS ZONE                      | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |

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| Eastern | ONYAME ADOM MAT HOME                         | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | HOLY FAMILY HOSPITAL                         | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Eastern | AKWASIHO COMMUNITY CLINIC                    | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | NKAWANDA NO 2 HEALTH CENTRE                  | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Eastern | NEW JEJETI HEALTH CENTRE                     | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | ASAFO HEALTH CENTRE                          | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | APEDWA HEALTH CENTRE                         | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | ABOMOSU HEALTH CENTRE                        | NON EmONC     | NO  | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Eastern | KWABENG REPRODUCTIVE AND CHILD HEALTH CENTRE | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Eastern | AWENARE HEALTH CENTRE                        | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | ENYIRESI GOVERNMENT HOSPITAL                 | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Eastern | ASIAKWA HEALTH CENTRE                        | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | HAWA MEMORIAL SAVIOUR HOSPITAL               | PARTIAL EmONC | YES | YES | YES | NO  | YES | NO  | YES | YES | YES |
| Eastern | RELIANCE MATERNITY HOME AND MEDICAL LAB      | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | ZONGO HEALTH CENTRE                          | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | MAGAZINE CHPS                                | NON EmONC     | YES | YES | NO  | YES | YES | NO  | NO  | NO  | NO  |
| Eastern | AKWADUM HEALTH CENTRE                        | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Eastern | PAT MATERNITY HOME                           | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | KLO AGOGO HEALTH                             | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | BETHEL MATERNITY HOME                        | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Eastern | AKATENG RCH                                  | PARTIAL EmONC | YES | YES | YES | NO  | YES | NO  | YES | NO  | NO  |
| Eastern | ASESEWA GOV'T HOSPITAL                       | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Eastern | ALIDOR MATERNITY HOME                        | BASIC         | YES | YES | YES | YES | YES | YES | YES | YES | NO  |
| Eastern | ANYABONI RCH                                 | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | KPONG HEALTH CENTRE                          | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | AKUSE GOVERNMENT HOSPITAL                    | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |

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| Eastern | ST MARTIN DE PORRES HOSPITAL-AGORMANYA | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Eastern | OKRAKWADWO HEALTH CENTRE               | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | MANGOASE HEALTH CENTRE                 | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | ADAWSO HEALTH CENTRE                   | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | LARTEH HEALTH CENTRE                   | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Eastern | AKROPONG HEALTH CENTRE                 | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | ADUKROM HEALTH CENTRE                  | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | ABIRIW CHPS                            | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | NYARKOA MATERNITY HOME                 | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Eastern | TETTEH QUARSHIE MEMORIAL HOSPITAL      | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Eastern | OBOSOMASE CHPS                         | NON EmONC     | YES | YES | YES | NO  | NO  | YES | NO  | NO  | NO  |
| Eastern | TINKONG CHPS                           | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Eastern | NSAWAM GOV'T HOSPITAL                  | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Eastern | ADOAGYIR ZONGO HEALTH CENTRE           | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | NOTRE DAME CLINIC AKWAPEM SOUTH        | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | PAKRO HEALTH CENTRE                    | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Eastern | POKROM HEALTH CENTRE                   | PARTIAL EmONC | YES | YES | NO  | YES | YES | NO  | YES | NO  | NO  |
| Eastern | KOM PRESBY CLINIC                      | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Eastern | OYOKO HEALTH CENTRE                    | NON EmONC     | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | SALVATION ARMY CLINIC                  | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | BOSO HEALTH CENTRE                     | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | APEGVSO CLINIC                         | NON EmONC     | YES | YES | YES | NO  | YES | NO  | NO  | NO  | NO  |
| Eastern | SENCHE HEALTH CENTER                   | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Eastern | ADJENA HEALTH CENTRE                   | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | VOLTA RIVER AUTHORITY (VRA) HOSPITAL   | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Eastern | OTROKPER CLINIC                        | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | COALTAR CLINIC                         | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |

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| Eastern | ANOM APAPAM CLINIC              | NON EmONC     | NO  | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Eastern | ASUBOI HEALTH CENTRE            | NON EmONC     | NO  | YES | YES | NO  | NO  | YES | YES | NO  | NO  |
| Eastern | ADEISO HEALTH CENTRE            | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | EDITH'S MATERNITY HOME          | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | ABAMKROM COMMUNITY CLINIC       | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | MEPOM COMMUNITY CLINIC          | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | OSEHASE HEALT CENTRE            | NON EmONC     | NO  | YES | NO  | YES | YES | NO  | YES | NO  | NO  |
| Eastern | ST. ANTHONY OF PADUA MAT. HOME  | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | ASAMANKESE GOVT HOSPITAL        | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Eastern | ST. DOMINIC'S HOSPITAL          | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Eastern | KADE GOVT. HOSPITAL             | PARTIAL EmONC | YES | YES | NO  | YES | YES | NO  | YES | YES | YES |
| Eastern | TAKORASE HEALTH CENTRE          | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | PRAMKESE HEALTH CENTRE          | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | ASUOM HEALTH CENTRE             | PARTIAL EmONC | YES | YES | NO  | YES | YES | NO  | YES | NO  | NO  |
| Eastern | KWAE CHPS CENTRE                | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | NEW ABIREM HEALTH CENTRE        | PARTIAL EmONC | YES | YES | NO  | YES | YES | NO  | YES | NO  | NO  |
| Eastern | ST MICHEAL'S CLINIC & MATERNITY | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Eastern | NKWATENG CHPS                   | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | AMUANA PRASO CLINIC             | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Eastern | ANYINASE HEALTH CENTRE          | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Eastern | AYIREBI HEALTH CENTRE           | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Eastern | OTWERESO CLINIC                 | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | BRENASSE HEALTH CENTRE          | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | ST. JOHN CLINIC AND MATERNITY   | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern | HOLY HORNIEL MATERNITY HOME     | NON EmONC     | YES | YES | NO  | NO  | NO  | YES | NO  | NO  | NO  |
| Eastern | JUBILEE HOSPITAL                | NON EmONC     | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Eastern | AKROSO HEALTH CENTRE            | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern | MANSO CHPS CENTRE               | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |



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| Eastern       | ASENE COMMUNITY CLINIC                      | NON EmONC     | NO  | YES | NO  | NO  | YES | NO  | NO  | NO  | NO  |
| Eastern       | ODA GOVT. HOSPITAL                          | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Eastern       | ACHIASE HEALTH CENTRE                       | NON EmONC     | NO  | YES | NO  | NO  | YES | NO  | NO  | NO  | NO  |
| Eastern       | CATHOLIC CLINIC & MATERNITY                 | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern       | APERADE HEALTH CENTER                       | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern       | ANAMASE CHPS                                | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern       | ADJOBUE CHPS                                | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Eastern       | AKANTENG COMMUNITY CLINIC                   | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern       | AMANASE CHPS                                | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern       | EDITH MATERNITY HOME                        | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern       | REGIONAL HOSPITAL                           | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Eastern       | KIBI GOVERNMENT HOSPITAL                    | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Eastern       | SUHUM GOVERNMENT HOSPITAL                   | PARTIAL EmONC | YES | YES | YES | YES | NO  | YES | YES | YES | YES |
| Eastern       | JUMAPO HEALTH CENTRE                        | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Eastern       | NEW TAFO GOVERNMENT HOSPITAL                | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Eastern       | ATUA GOVT HOSP                              | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Greater Accra | SPECIALIST HOSP. AND FAMILY PLANNING CENTRE | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | YES |
| Greater Accra | VICOM SPECIALIST HOSPITAL AND MATERNITY     | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | YES |
| Greater Accra | GLEFE CHIPS COMPOUND                        | PARTIAL EmONC | NO  | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Greater Accra | MAMPROBI POLYCLINIC                         | BASIC         | YES | YES | YES | YES | YES | YES | YES | YES | NO  |
| Greater Accra | NYAMEADOM MATERNITY HOME                    | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Greater Accra | KARIKARI BROBBEY HOSPITAL                   | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Greater Accra | FELIDAN MATERNITY HOME                      | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Greater       | THE ROCK HOSPITAL                           | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |

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| Accra         |   |               |     |     |     |     |     |     |     |     |     |
| Greater Accra | ASOMDWE-HENE MATERNITY HOME                 | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Greater Accra | LINK ROAD HOSPITAL                          | PARTIAL EmONC | YES | YES | NO  | YES | YES | YES | NO  | YES | YES |
| Greater Accra | EMMANUEL CLINIC AND MATERNITY               | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Greater Accra | MAYFAIR CLINIC AND MATERNITY HOME           | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | YES |
| Greater Accra | HENRIETTA'S CLINIC & MATERNITY HOME         | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Greater Accra | KANESHIE POLYCLINIC                         | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Greater Accra | THERESA MATERNITY HOME                      | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Greater Accra | REHOBOTH MATERNITY HOME                     | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Greater Accra | LAURA'S MATERNITY HOME AND CLINIC           | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Greater Accra | PRINCE OF PEACE MAT HOME AND CLINIC         | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Greater Accra | GREEN HAND CLINIC                           | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Greater Accra | LAKE SIDE CLINIC AND FAMILY PLANNING CENTRE | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Greater Accra | EL-SHADAI MATERNITY HOME AND CLINIC         | NON EmONC     | YES | YES | YES | NO  | YES | NO  | YES | NO  | NO  |
| Greater Accra | MAB MEDICARE CENTRE                         | NON EmONC     | YES | YES | YES | NO  | YES | NO  | YES | NO  | YES |
| Greater Accra | FAITH EVANGELICAL MISSION HOSPITAL          | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Greater Accra | EDEN FAMILY HOSPITAL                        | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | YES |

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| Greater Accra | EL-RAPHA HOSPITAL                 | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | YES |
| Greater Accra | OBENGFO HOSPITAL                  | NON EmONC     | YES | .   | YES | NO  | NO  | NO  | NO  | YES | NO  |
| Greater Accra | ACHIMOTA HOSPITAL                 | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | NO  |
| Greater Accra | AL-AYAR CLINIC AND MATERNITY HOME | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Greater Accra | LAPAZ COMMUNITY HOSPITAL          | NON EmONC     | YES | YES | YES | NO  | YES | NO  | YES | NO  | YES |
| Greater Accra | ADAM FAMILY MATERNITY HOME        | PARTIAL EmONC | YES | YES | YES | NO  | YES | NO  | YES | NO  | NO  |
| Greater Accra | MARINA CLINIC                     | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | YES | YES |
| Greater Accra | MARY LUCY HOSPITAL                | PARTIAL EmONC | YES | YES | YES | NO  | YES | YES | YES | YES | YES |
| Greater Accra | NEW GENERATION MEDICAL CENTRE     | NON EmONC     | YES | YES | YES | NO  | YES | NO  | NO  | NO  | NO  |
| Greater Accra | GBEGBE ROYAL MATERNITY HOME       | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Greater Accra | KORLEBU TEACHING HOSPITAL         | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Greater Accra | ADABRAKAH POLYCLINIC              | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Greater Accra | OSU GOV. MAT. HOME                | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Greater Accra | RIDGE HOSPITAL                    | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Greater Accra | TRUST HOSPITAL                    | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Greater Accra | JAMES TOWN MATERNITY HOME         | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Greater Accra | GOODWILL MATERNITY HOME           | NON EmONC     | NO  | YES | NO  | NO  | NO  | YES | YES | NO  | NO  |

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| Greater Accra | AMASAMAN MUNICIPAL HOSPITAL     | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | YES | YES |
| Greater Accra | ODOMAN COMMUNITY HEALTH CENTRE  | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Greater Accra | ANEJEJA CLINIC                  | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Greater Accra | AMANFRO HEALTH CENTRE           | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Greater Accra | KOKROBITE COMMUNITY CLINIC      | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Greater Accra | GA SOUTH MUNICIPAL HOSPITAL     | NON EmONC     | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Greater Accra | RAHMA MATERNITY HOME            | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Greater Accra | BLOSSOM MATERNITY HOME          | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Greater Accra | OBOM HEALTH CENTRE              | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Greater Accra | AMOAHA MATERNITY HOME           | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Greater Accra | DESERET HOSPITAL/MATERNITY HOME | BASIC         | YES | YES | YES | YES | YES | YES | YES | YES | NO  |
| Greater Accra | EME'S MATERNITY HOME            | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Greater Accra | BRAZZA MATERNITY HOME           | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Greater Accra | SAMALLA CLINIC                  | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Greater Accra | GBAWE CLINIC / MATERNITY HOME   | NON EmONC     | YES | YES | NO  | NO  | YES | NO  | NO  | NO  | NO  |
| Greater Accra | ANANDA MARGA PRIM. H/CARE       | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Greater Accra | ESTARAH MATERNITY HOME          | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |

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| Greater Accra | EL-BETHEL MATERNITY HOME      | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Greater Accra | EMMANUEL MATERNITY HOME       | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Greater Accra | HEBRON MATERNITY HOME         | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Greater Accra | TEES MATERNITY HOME           | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Greater Accra | ARAKAN MATERNITY HOME         | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Greater Accra | ACHEAMPONG CLINIC             | PARTIAL EmONC | YES | YES | YES | NO  | YES | YES | YES | NO  | YES |
| Greater Accra | LA GENERAL HOSPITAL           | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Greater Accra | NORTH RIDGE CLINIC            | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Greater Accra | POLICE HOSPITAL               | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Greater Accra | ADA HEALTH CENTRE             | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Greater Accra | DANGME EAST DISTRICT HOSPITAL | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Greater Accra | ANYAMAM CLINIC                | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Greater Accra | SEGE HEALTH CENTRE            | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Greater Accra | KASSEH HEALTH CENTRE          | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Greater Accra | TEMA POLY CLINIC              | NON EmONC     | YES | YES | NO  | NO  | YES | NO  | YES | NO  | NO  |
| Greater Accra | BETHEL HOSPITAL               | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | YES |
| Greater Accra | BENGALI HOSPITAL              | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | YES | YES |

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| Greater Accra | B'S MATERNITY HOME                                 | NON EmONC     | YES | YES | NO  | NO  | YES | NO  | YES | NO  | NO  |
| Greater Accra | NEW CRYSTAL CLINIC                                 | NON EmONC     | YES | YES | NO  | YES | YES | NO  | YES | NO  | YES |
| Greater Accra | SINEL SPECIALIST HOSPITAL                          | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | YES | YES |
| Greater Accra | THE TEMA CLINIC (WEST END SPECIALIST CLINIC)       | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Greater Accra | CAIQUO HOSPITAL                                    | PARTIAL EmONC | YES | YES | NO  | YES | YES | NO  | YES | YES | YES |
| Greater Accra | TEMA GENERAL HOSPITAL                              | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Greater Accra | NARH-BITA HOSPITAL                                 | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Greater Accra | KPONE HEALTH CENTRE                                | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Greater Accra | TEMA MANHEAN HEALTH CENTRE                         | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Greater Accra | FIDEN MEDICAL CENTRE (FORMERLY EILEEN'S MAT. HOME) | NON EmONC     | YES | YES | NO  | YES | YES | NO  | NO  | NO  | NO  |
| Greater Accra | SAKUMONO COMMUNITY CLINIC                          | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | YES | YES |
| Greater Accra | JUBAIL SPECIALIST HOSPITAL                         | PARTIAL EmONC | YES | YES | YES | NO  | YES | NO  | YES | YES | YES |
| Greater Accra | RAPHEL CLINIC (NEW SITE)                           | PARTIAL EmONC | YES | YES | YES | NO  | YES | NO  | YES | YES | YES |
| Greater Accra | PRO-VITA SPECIALIST HOSPITAL                       | NON EmONC     | YES | .   | .   | NO  | YES | NO  | YES | YES | YES |
| Greater Accra | TEMA WOMEN'S HOSPITAL                              | PARTIAL EmONC | YES | YES | YES | NO  | YES | NO  | YES | YES | YES |
| Greater Accra | THE FINGER OF GOD MATERNITY HOME                   | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |

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| Greater Accra | OPEC CLINIC(TESHIE HEALTH CENTRE)              | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Greater Accra | LISTER HOSPITAL                                | PARTIAL EmONC | YES | YES | YES | NO  | NO  | YES | YES | YES | YES |
| Greater Accra | CHRISTIAN MEDICAL CENTRE                       | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | YES | YES |
| Greater Accra | MANNA MISSION HOSPITAL                         | PARTIAL EmONC | YES | YES | YES | NO  | YES | YES | YES | YES | YES |
| Greater Accra | FAMILY HEALTH HOSPITAL                         | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | YES | YES |
| Greater Accra | NYAME -ADOM MATERNITY HOME                     | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Greater Accra | MOTHER OF GOD CLINIC                           | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | YES |
| Greater Accra | NYAME BEKYERE MATERNITY/FAMILY PLANNING CLINIC | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Greater Accra | NEW EDEN MATERNITY HOME                        | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Greater Accra | DARBEM CLINIC                                  | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Greater Accra | LEBANON COMMUNITY CLINIC                       | NON EmONC     | YES | YES | YES | NO  | YES | NO  | NO  | NO  | NO  |
| Greater Accra | ASHAIMAN HEALTH CENTRE                         | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Greater Accra | NEW CRYSTAL CLINIC                             | NON EmONC     | YES | YES | YES | NO  | YES | NO  | NO  | YES | NO  |
| Greater Accra | PORT MEDICAL CENTRE                            | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Greater Accra | MOTHER LOVE HOSPITAL                           | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | YES |
| Greater Accra | HEALTH LOOP CLINIC                             | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | YES |

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| Greater Accra | ABOKOBI HEALTH CENTRE                | NON EmONC     | NO  | YES | NO  | YES | YES | NO  | YES | NO  | NO  |
| Greater Accra | DANFA HEALTH CENTRE                  | NON EmONC     | NO  | YES | NO  | NO  | YES | NO  | YES | NO  | NO  |
| Greater Accra | OLD NINGO HEALTH CENTRA              | NON EmONC     | NO  | YES | NO  | NO  | YES | NO  | YES | NO  | NO  |
| Greater Accra | PRAMPARAM HEALTH CENTRE              | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Greater Accra | OMARI MEDICAL CENTRE                 | NON EmONC     | YES | YES | NO  | YES | YES | NO  | YES | NO  | YES |
| Greater Accra | ST.ANDREWS CLINIC KORDIABE           | NON EmONC     | NO  | YES | NO  | NO  | YES | NO  | NO  | NO  | NO  |
| Greater Accra | DANGME WEST DISTRICT HOSPITAL DODOWA | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Greater Accra | GRACE MATERNITY HOME/CLINIC          | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Greater Accra | NORTH LEGON HOSPITAL                 | PARTIAL EmONC | YES | YES | YES | NO  | YES | NO  | YES | YES | YES |
| Greater Accra | FRANSKO MAT HOME                     | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Greater Accra | CARE MEDICAL CLINIC & MAT            | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Greater Accra | JILAC SPECIALIST CLINIC              | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | YES | YES |
| Greater Accra | TAIFA MEDICAL CENTRE                 | PARTIAL EmONC | YES | YES | YES | NO  | YES | YES | YES | NO  | YES |
| Greater Accra | BENNETE MEMORIAL CLINIC/MAT. HOME    | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Greater Accra | TWUMASIWAA MEDICAL CENTRE            | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | YES |
| Greater Accra | MAAMOBI POLYCLINIC                   | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Greater Accra | NYAHO MED. CENTRE                    | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | YES |



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| Greater Accra | NIMA GOVERNMENT CLINIC                     | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Greater Accra | VIC'S MATERNITY HOME                       | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Greater Accra | UNIVERSITY OF GHANA HOSPITAL               | PARTIAL EmONC | YES | YES | YES | NO  | YES | YES | YES | YES | YES |
| Greater Accra | AMANDA MATERNITY HOME                      | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Greater Accra | THE SALVATION ARMY URBAN AID HEALTH CENTRE | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Greater Accra | MEDIFEM HOSPITAL AND FERTILITY CENTRE      | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Greater Accra | 37 MILLITARY HOSP                          | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Greater Accra | JOHPAT HOSPITAL                            | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | YES | YES |
| Greater Accra | EFAN VICTORY CLINIC                        | NON EmONC     | YES | YES | NO  | NO  | YES | NO  | NO  | NO  | NO  |
| Greater Accra | AGOMEDA CHPS                               | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Greater Accra | SULEMANA MEMORIAL HOSPITAL                 | NON EmONC     | YES | YES | NO  | YES | YES | NO  | NO  | NO  | NO  |
| Greater Accra | QUEEN'S MEDICAL CENTER                     | NON EmONC     | YES | YES | NO  | YES | YES | .   | YES | NO  | YES |
| Greater Accra | EGON GERMAN CLINIC                         | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | YES |
| Greater Accra | MIDWAY CLINIC                              | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | YES |
| Northern      | BUNKURUGU HEALTH CENTRE                    | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Northern      | YUNYOO HEALTH CENTRE                       | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern      | NAKPANDURI HEALTH CENTRE                   | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Northern      | NASUAN HEALTH CENTRE                       | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Northern      | BINBAGU CHPS                               | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Northern      | SAKOGU HEALTH CENTRE                       | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |

|          |                            |               |     |     |     |     |     |     |     |     |     |
|----------|----------------------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Northern | BAPTIST MEDICAL CENTRE     | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Northern | GAMBAGA HEALTH CENTRE      | NON EmONC     | YES | YES | NO  | YES | YES | NO  | NO  | NO  | NO  |
| Northern | LANGBISI HEALTH CENTRE     | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Northern | YIKPABONGO HEALTH CENTRE   | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Northern | KBORI H CENTRE             | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | NO  | NO  | NO  |
| Northern | WALEWALE DISTRICT HOSPITAL | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | NO  |
| Northern | JANGA HEALTH CENTRE        | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Northern | DIARE HEALTH CENTRE        | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Northern | SAVELUGU HOSPITAL          | BASIC         | YES | YES | YES | YES | YES | YES | YES | YES | NO  |
| Northern | PONGTAMALE HEALTH CENTRE   | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Northern | ZOGU HEALTH CENTRE         | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Northern | MOGLAA HEALTH CENTRE       | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Northern | KPARIGA PPAG               | PARTIAL EmONC | YES | YES | YES | NO  | YES | NO  | YES | NO  | NO  |
| Northern | TAMPION HEALTH CENTRE      | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Northern | NANTON HEALTH CENTRE       | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Northern | TOLON HEALTH CENTRE        | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Northern | LINGBINGA CHPS             | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Northern | NYANKPALA HEALTH CENTRE    | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Northern | WANTUGU HEALTH CENTRE      | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Northern | DALUN HEALTH CENTRE        | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Northern | KUMBUNGU HEALTH CENTRE     | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Northern | THE KINGS MEDICAL CENTRE   | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Northern | CHEREPONI HEALTH CENTRE    | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Northern | WAPULI HEALTH CENTRE       | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Northern | SABOBA MEDICAL CENTRE      | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Northern | SAMBUH HEALTH CENTRE       | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Northern | KPALBA HEALTH CENTRE       | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | KPATINGA HEALTH CENTRE     | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | KATANI HEALTH CENTRE       | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Northern | GUSHEGU HEALTH CENTER      | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Northern | KARAGA HEALTH CENTRE       | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Northern | NYONG CHPS COMPOUND        | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Northern | GALWEI HEALTH CENTRE       | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |

|          |   |               |     |     |     |     |     |     |     |     |     |
|----------|---|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Northern | TAMALGU CHPS COMPOUND                             | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | PISHIGU HEALTH CENTRE                             | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Northern | GUSHIEGU RCH CENTRE                               | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Northern | MILE 9(MRS)                                       | NON EmONC     | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | KAMINA MILITARS HOSPITAL                          | NON EmONC     | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Northern | SUGLO HOSPITAL (PRIVATE)                          | BASIC         | YES | YES | YES | YES | YES | YES | YES | NO  | YES |
| Northern | FULERA MATERNITY HOME                             | PARTIAL EmONC | NO  | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Northern | GOD "CARES" HOSPITAL                              | PARTIAL EmONC | YES | YES | NO  | YES | YES | NO  | YES | YES | YES |
| Northern | SAGNARIGU HEALTH CENTRE                           | NON EmONC     | NO  | YES | YES | NO  | YES | NO  | NO  | NO  | NO  |
| Northern | BILPELA HEALTH CENTRE                             | PARTIAL EmONC | YES | YES | NO  | YES | YES | NO  | YES | NO  | NO  |
| Northern | KALPOHIN HEALTH CENTRE                            | PARTIAL EmONC | YES | YES | YES | NO  | YES | NO  | YES | NO  | NO  |
| Northern | VITTING HEALTH CENTRE                             | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | DEAHA MATERNITY HOME                              | PARTIAL EmONC | YES | YES | YES | NO  | YES | YES | YES | NO  | NO  |
| Northern | AS-SALAM MATERNITY HOME                           | NON EmONC     | YES | YES | NO  | NO  | YES | NO  | YES | NO  | NO  |
| Northern | S.D.A HOSPITAL                                    | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | TAMALE CENTRAL HOSPITAL                           | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | YES | NO  |
| Northern | TAMALE WEST HOSPITAL                              | BASIC         | YES | YES | YES | YES | YES | YES | YES | YES | NO  |
| Northern | TAMALE TEACHING HOSPITAL                          | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Northern | BUSUNU HEALTH CENTRE                              | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Northern | WEST GONJA HOSPITAL                               | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Northern | RCH DAMONGO<br>(REPRODUCTIVE AND CHILD<br>HEALTH) | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | MOLE HEALTH CENTRE                                | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Northern | SAWLA HEALTH CENTRE                               | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | EVERGREEN MATERNITY HOME                          | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Northern | KULMASA CHPS                                      | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | GINDABUO HEALTH CENTER                            | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Northern | TUNA HEALTH CENTRE                                | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Northern | FRIENDS M/H                                       | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Northern | MANKUMA H/C                                       | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | BOLE HOSPITAL                                     | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Northern | MANDARI HEALTH CENTRE                             | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |

|          |   |               |     |     |     |     |     |     |     |     |     |
|----------|---|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Northern | JAMA HEALTH CENTRE                        | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | BAMBOI HEALTH CENTRE                      | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | TINGA HEALTH CENTRE                       | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | DONALD RICHARD                            | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Northern | KUNFUNSI CHPS                             | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | KALBA HEALTH CENTRE                       | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Northern | BUIPE HEALTH CENTRE                       | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | DABOYA HEALTH CENTRE                      | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | MPAHA HEALTH CENTRE                       | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Northern | YAPEI HEALTH CENTRE                       | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Northern | SANKPALA HEALTH CENTRE                    | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | KUSAWGU HEALTH CENTER                     | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | MANKARIGU HEALTH CENTRE                   | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | KUMDI HEALTH CENTRE                       | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Northern | KETARI HEALTH CENTRE                      | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | EVANGELICAL CHURCH OF GHANA HEALTH CENTRE | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Northern | KPANDAI HEALTH CENTRE                     | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Northern | SABONJIDA HEALTH CENTRE                   | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Northern | TATALE HEALTH CENTER                      | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Northern | KPALBUTABU                                | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | NAKPALE HEALTH CENTRE                     | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Northern | KUKPALIGU HEALTH CENTRE                   | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Northern | ZABZUGU HEALTH CENTRE                     | NON EmONC     | YES | YES | NO  | YES | NO  | YES | NO  | YES | NO  |
| Northern | SABARE CHPS                               | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | KPALBE HEALTH CENTRE                      | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Northern | SALAGA DISTRICT HOSPITAL                  | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Northern | BUMA HEALTH CENTER                        | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | JIMLE HEALTH CENTRE                       | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | ADIBO HEALTH CENTRE                       | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Northern | BUMBONG HEALTH CENTRE                     | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern | NGANI HEALTH CENTER                       | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Northern | YENDI DISTRICT HOSPITAL                   | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |

|            |                            |               |     |     |     |     |     |     |     |     |     |
|------------|----------------------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Northern   | SANG HEALTH CENTER         | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Northern   | BIMBILLA DISTRICT HOSPITAL | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Northern   | MAKAYILI HEALTH CENTRE     | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern   | CHAMBA HEALTH CENTER       | NON EmONC     | NO  | YES | NO  | YES | YES | NO  | YES | NO  | NO  |
| Northern   | LUNGI HEALTH CENTER        | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Northern   | WULENSI HEALTH CENTRE      | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Upper East | WAR MEMORIAL HOSPITAL      | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Upper East | BINABA HEALTH CENTRE       | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Upper East | ZEBILLA DISTRICT HOSPITAL  | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Upper East | ZONGOIRE HEALTH CENTRE     | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Upper East | GBANTONGO CLINIC           | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | YELWOKO CLINIC             | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | TILLI CLINIC               | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | WIDNABA CLINIC             | NON EmONC     | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | AFRIKIDS MEDICAL CENTRE    | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | NO  |
| Upper East | SAPELLIGA HEALTH CENTRE    | NON EmONC     | NO  | YES | NO  | NO  | NO  | YES | YES | NO  | NO  |
| Upper East | GOOGO CLINIC               | PARTIAL EmONC | YES | YES | YES | NO  | NO  | YES | YES | NO  | NO  |
| Upper East | DONINGA HEALTH CENTER      | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | SINIENSI COMMUNITY CLINIC  | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Upper East | FUMBISI HEALTH CENTRE      | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |

|            |                           |               |     |     |    |     |     |     |     |     |     |
|------------|---------------------------|---------------|-----|-----|----|-----|-----|-----|-----|-----|-----|
| Upper East | KANJARGA HEALTH CENTRE    | NON EmONC     | YES | YES | NO | YES | NO  | NO  | YES | NO  | NO  |
| Upper East | SANDEMA DISTRICT HOSPITAL | NON EmONC     | YES | YES | NO | NO  | NO  | NO  | YES | YES | YES |
| Upper East | CHUCHULIGA HEALTH CENTRE  | NON EmONC     | NO  | YES | NO | YES | NO  | NO  | YES | NO  | NO  |
| Upper East | WIAGA HEALTH CENTER       | NON EmONC     | NO  | YES | NO | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | GAMBIBGO COMMUNITY CLINIC | NON EmONC     | NO  | YES | NO | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | ZUARUNGU HEALTH CENTER    | NON EmONC     | YES | YES | NO | NO  | NO  | NO  | YES | NO  | NO  |
| Upper East | NYARIGA CLINIC            | NON EmONC     | NO  | YES | NO | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | AGUUSI CHPS               | NON EmONC     | NO  | YES | NO | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | SUMBRUNGU CLINIC          | NON EmONC     | NO  | YES | NO | YES | NO  | NO  | YES | NO  | NO  |
| Upper East | SHERIGU CLINIC            | NON EmONC     | YES | YES | NO | NO  | NO  | NO  | YES | NO  | NO  |
| Upper East | CORONATION CLINIC         | NON EmONC     | YES | YES | NO | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | ZUARUNGU MOSHIE CLINIC    | NON EmONC     | NO  | YES | NO | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | BOLGA HEALTH CENTER       | NON EmONC     | NO  | YES | NO | NO  | NO  | NO  | YES | NO  | NO  |
| Upper East | REGIONAL HOSPITAL, BOLGA  | PARTIAL EmONC | YES | YES | NO | YES | YES | YES | YES | YES | YES |
| Upper East | TESHIE CHPS               | NON EmONC     | NO  | YES | NO | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | KASSENA NANKANA CHC       | NON EmONC     | NO  | YES | NO | YES | NO  | NO  | NO  | NO  | NO  |
| Upper East | NAVRONGO HEALTH CENTRE    | NON EmONC     | NO  | YES | NO | NO  | NO  | NO  | YES | NO  | NO  |

|            |   |               |     |     |     |     |     |     |     |     |     |
|------------|---|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Upper East | BONGO HOSPITAL                          | PARTIAL EmONC | YES | YES | NO  | YES | YES | YES | YES | YES | YES |
| Upper East | DUA CLINIC                              | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Upper East | VEA HEALTH CENTRE                       | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Upper East | ST. THEREZA'S CATHOLIC HEALTH CENTRE    | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Upper East | NAMOO HEALTH CENTRE                     | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Upper East | BONGO SOE HEALTH CENTRE                 | PARTIAL EmONC | YES | YES | NO  | YES | YES | NO  | YES | NO  | NO  |
| Upper East | FEO CHPS                                | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Upper East | WAGLIGA CHPS                            | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | ANAFOBISI CLINIC                        | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | KAYORO CHC                              | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | KATIU CHC                               | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Upper East | CHIANA HEALTH CENTRE                    | PARTIAL EmONC | YES | YES | YES | NO  | YES | NO  | YES | NO  | NO  |
| Upper East | PAGA HEALTH CENTRE                      | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Upper East | NAVIO CHC                               | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | NAKOLO CLINIC                           | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | MARTYRS OF UGANDA HEALTH CENTRE, SIRIGU | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Upper East | BUGSONGU/NYANGOLINGO CHC                | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |

|            |  |               |     |     |     |     |    |    |     |    |    |
|------------|--|---------------|-----|-----|-----|-----|----|----|-----|----|----|
| Upper East | KASSENA NANKANA EAST HEALTH CENTRE KANOLGA | PARTIAL EmONC | YES | YES | YES | YES | NO | NO | YES | NO | NO |
| Upper East | KURUGU CHC                                 | NON EmONC     | NO  | YES | NO  | NO  | NO | NO | YES | NO | NO |
| Upper East | MIRIGU CHC                                 | NON EmONC     | NO  | YES | NO  | NO  | NO | NO | NO  | NO | NO |
| Upper East | ADABOYA CHC                                | NON EmONC     | NO  | YES | NO  | YES | NO | NO | NO  | NO | NO |
| Upper East | WIDANA HEALTH CENTRE                       | NON EmONC     | YES | YES | NO  | NO  | NO | NO | NO  | NO | NO |
| Upper East | MOGNORI HEALTH CENTRE                      | NON EmONC     | YES | YES | NO  | NO  | NO | NO | YES | NO | NO |
| Upper East | URBAN HEALTH CENTRE                        | NON EmONC     | YES | YES | NO  | NO  | NO | NO | NO  | NO | NO |
| Upper East | ISLAM MATERNITY                            | NON EmONC     | NO  | YES | NO  | NO  | NO | NO | NO  | NO | NO |
| Upper East | BINDURI HEALTH CENTRE                      | NON EmONC     | YES | YES | NO  | NO  | NO | NO | NO  | NO | NO |
| Upper East | ST MARTINS CLINIC (BIU)                    | NON EmONC     | NO  | YES | NO  | YES | NO | NO | YES | NO | NO |
| Upper East | KOLOGO HEALTH CENTRE                       | NON EmONC     | NO  | YES | NO  | NO  | NO | NO | NO  | NO | NO |
| Upper East | NAAGA CHC                                  | NON EmONC     | NO  | YES | NO  | NO  | NO | NO | NO  | NO | NO |
| Upper East | MANYORO CHC                                | NON EmONC     | NO  | YES | NO  | NO  | NO | NO | NO  | NO | NO |
| Upper East | PWALUGU HEALTH CENTRE                      | NON EmONC     | NO  | YES | NO  | YES | NO | NO | NO  | NO | NO |
| Upper East | SHIA CHPS                                  | NON EmONC     | NO  | YES | NO  | NO  | NO | NO | NO  | NO | NO |
| Upper East | TONGO HEALTH CENTRE                        | NON EmONC     | NO  | YES | NO  | NO  | NO | NO | YES | NO | NO |
| Upper East | GORRIKO / AWARADONE CHPS                   | NON EmONC     | YES | YES | YES | NO  | NO | NO | NO  | NO | NO |



|            |  |               |     |     |     |     |     |     |     |     |     |
|------------|--|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Upper East | MARY IMMACULATE CONCEPTION HEALTH CENTRE/KONGO-LOG | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Upper East | TOLLA CHPS   | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | DATUKO CLINIC                                      | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Upper East | NANGODI HEALTH CENTRE                              | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | PELUNGU CLINIC                                     | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | NAMOLGO CLINIC                                     | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Upper East | QUALITY MEDICAL CENTRE                             | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | YES | NO  |
| Upper East | PUSIGA HEALTH CENTRE                               | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Upper East | BAZUA CLINIC                                       | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | BAWKU PRESBY HOSPITAL                              | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Upper East | KULUNGUGU CLINIC                                   | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | WORİYANGA HEALTH CENTRE                            | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Upper East | BASOYENDE HEALTH CENTRE                            | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | BUGRI HEALTH CENTRE                                | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | FAME CLINIC  | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Upper East | WORİKAMBO HEALTH CENTRE                            | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Upper      | SONGO HEALTH CENTRE                                | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |

|            |                                     |               |     |     |     |     |     |     |     |     |     |
|------------|-------------------------------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| East       |                                     |               |     |     |     |     |     |     |     |     |     |
| Upper East | GARU HEALTH CENTER                  | NON EmONC     | YES | YES | NO  | NO  | YES | NO  | YES | YES | NO  |
| Upper East | VUNANIA CHC                         | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper East | YUA CHC                             | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper West | ST. JOSEPH HOSPITAL JIRAPA          | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Upper West | DUORI HEALTH CENTER                 | NON EmONC     | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper West | EREMON HEALTH CENTRE                | NON EmONC     | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper West | TUGGO HEALTH CENTER                 | NON EmONC     | YES | NO  | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Upper West | YAGHA HEALTH CENTER                 | NON EmONC     | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper West | BABILE HEALTH CENTRE                | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper West | QUEEN OF PEACE HEALTH CENTER SABULI | NON EmONC     | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper West | HAIN HEALTH CENTRE                  | NON EmONC     | YES | NO  | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Upper West | ULLO HEALTH CENTER                  | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Upper West | DOMWINE                             | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Upper West | ZAMBO HEALTH CENTRE                 | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper West | LAWRA DISTRICT HOSPITAL             | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Upper West | PIIRI HEALTH CENTER                 | NON EmONC     | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper      | GENEGENKPE HEALTH CENTRE            | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |

|            |                           |               |     |     |     |     |     |     |     |     |     |
|------------|---------------------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| West       |                           |               |     |     |     |     |     |     |     |     |     |
| Upper West | KO HEALTH CENTER          | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper West | HAMILE HEALTH CENTRE      | NON EmONC     | YES | YES | NO  | YES | NO  | YES | NO  | NO  | NO  |
| Upper West | BILLAW HEALTH CENTRE      | NON EmONC     | NO  | NO  | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Upper West | NANDOM HOSPITAL           | PARTIAL EmONC | YES | YES | YES | NO  | YES | YES | YES | YES | YES |
| Upper West | KARNI HEALTH CENTRE       | NON EmONC     | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper West | PIINA HEALTH CENTRE       | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Upper West | LAMBUSSIE HEALTH CENTER   | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper West | FIELMUO HEALTH CENTRE     | NON EmONC     | YES | NO  | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Upper West | SAMOA                     | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper West | SUKE CHPS                 | NON EmONC     | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper West | ZINI HEALTH CENTRE        | NON EmONC     | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper West | GWOLLU HEALTH CENTRE      | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper West | JEFFISI HEALTH CENTRE     | NON EmONC     | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper West | TUMU HOSPITAL             | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Upper West | NABULO HEALTH CENTRE      | NON EmONC     | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper West | KULFUO HEALTH CENTRE      | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper      | NABUGUBELLE HEALTH CENTRE | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |

|            |                           |               |     |     |     |     |     |     |     |     |     |
|------------|---------------------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| West       |                           |               |     |     |     |     |     |     |     |     |     |
| Upper West | SAKAI CHPS                | NON EmONC     | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper West | WELLENBELLE HEALTH CENTRE | NON EmONC     | NO  | NO  | NO  | YES | NO  | YES | NO  | NO  | NO  |
| Upper West | BAWIESIBELLE CHPS         | NON EmONC     | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper West | WA REGIONAL HOSPITAL      | PARTIAL EmONC | YES | YES | YES | YES | NO  | YES | YES | YES | YES |
| Upper West | GOOD SHEPHERD             | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | .   | .   |
| Upper West | WA URBAN H. CENTRE        | PARTIAL EmONC | YES | YES | YES | YES | NO  | YES | YES | NO  | NO  |
| Upper West | BUSA HEALTH CENTRE        | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Upper West | CHARINGU HEALTH CENTRE    | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper West | NADOWLI DISTRICT HOSPITAL | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Upper West | DAPUORI HEALTH CENTRE     | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper West | CHARIKPONG HEALTH CENTRE  | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper West | SOMBO HEALTH CENTRE       | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper West | TAKPO HEALTH CENTRE       | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Upper West | NANVILLI HEALTH CENTER    | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Upper West | KALEO HEALTH CENTRE       | NON EmONC     | YES | YES | NO  | .   | NO  | NO  | NO  | NO  | NO  |
| Upper West | SANKANA CHPS ZONE         | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Upper      | SAMPINA CHPS ZONE         | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |

|            |                           |               |     |     |     |     |    |     |     |    |    |
|------------|---------------------------|---------------|-----|-----|-----|-----|----|-----|-----|----|----|
| West       |                           |               |     |     |     |     |    |     |     |    |    |
| Upper West | DAFFIAMA HEALTH CENTRE    | NON EmONC     | YES | YES | YES | NO  | NO | NO  | NO  | NO | NO |
| Upper West | BUSSIE HEALTH CENTRE      | NON EmONC     | YES | YES | YES | NO  | NO | NO  | NO  | NO | NO |
| Upper West | FIAN HEALTH CENTRE        | NON EmONC     | YES | YES | YES | NO  | NO | NO  | NO  | NO | NO |
| Upper West | JANG HEALTH CENTRE        | NON EmONC     | YES | YES | YES | NO  | NO | NO  | NO  | NO | NO |
| Upper West | ISSA HEALTH CENTRE        | NON EmONC     | YES | YES | YES | NO  | NO | NO  | NO  | NO | NO |
| Upper West | KOJOKPERE HEALTH CENTRE   | NON EmONC     | YES | YES | YES | NO  | NO | NO  | NO  | NO | NO |
| Upper West | LOGGU HEALTH CENTRE       | PARTIAL EmONC | YES | YES | YES | NO  | NO | YES | YES | NO | NO |
| Upper West | BULENGA HEALTH CENTRE     | NON EmONC     | YES | YES | YES | NO  | NO | NO  | YES | NO | NO |
| Upper West | HOLOMUNI HEALTH CENTRE    | NON EmONC     | YES | YES | YES | NO  | NO | NO  | YES | NO | NO |
| Upper West | NAAHA HEALTH CENTRE       | NON EmONC     | YES | YES | YES | NO  | NO | NO  | NO  | NO | NO |
| Upper West | KUNDUGU HEALTH CENTRE     | NON EmONC     | YES | YES | YES | NO  | NO | NO  | NO  | NO | NO |
| Upper West | YAALA HEALTH CENTRE       | NON EmONC     | YES | YES | YES | NO  | NO | NO  | NO  | NO | NO |
| Upper West | FUNSI HEALTH CENTER       | NON EmONC     | YES | YES | YES | NO  | NO | NO  | NO  | NO | NO |
| Upper West | WECHIAV H. CENTRE         | NON EmONC     | YES | YES | YES | NO  | NO | NO  | YES | NO | NO |
| Upper West | GURUNGU HEALTH CENTRE     | NON EmONC     | YES | YES | YES | NO  | NO | NO  | YES | NO | NO |
| Upper West | PONYENTANGA HEALTH CENTRE | NON EmONC     | NO  | YES | YES | YES | NO | NO  | YES | NO | NO |
| Upper      | LASIA TUOLU HEALTH CENTRE | NON EmONC     | YES | YES | YES | NO  | NO | NO  | NO  | NO | NO |

|            |                                      |               |     |     |     |     |     |     |     |     |     |
|------------|--------------------------------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| West       |                                      |               |     |     |     |     |     |     |     |     |     |
| Upper West | DORIMON HEALTH CENTRE                | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Upper West | EGGU HEALTH CENTRE                   | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Volta      | JASIKAN GOVT HOSPITAL                | PARTIAL EmONC | YES | YES | NO  | YES | YES | NO  | YES | YES | YES |
| Volta      | NEW AYOMA HEALTH CENTER              | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Volta      | MARY THERESA HOSPITAL<br>DODI-PAPASE | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Volta      | BANDA HEALTH CENTER                  | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Volta      | KRACHI WEST DISTRICT<br>HOSPITAL     | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Volta      | GRUBI HEALTH CENTER                  | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Volta      | ST LUKE'S CLINIC                     | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Volta      | BORAE HEALTH CENTER                  | NON EmONC     | YES | .   | YES | YES | NO  | NO  | YES | NO  | NO  |
| Volta      | DAMBAI HEALTH CENTRE                 | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Volta      | NYUIETOR MATERNITY HOME              | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Volta      | KATANGA HEALTH CENTRE                | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Volta      | DORMABIN HEALTH CENTER               | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Volta      | DAN MOSER CLINIC                     | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Volta      | NKWANTA DISTRICT HOSPITAL            | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Volta      | ST JOSEPH'S HOSPITAL                 | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Volta      | DAMANKO HEALTH CENTRE                | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Volta      | KPASSA HEALTH CENTRE                 | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Volta      | KPASSA MATERNITY HOME                | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Volta      | DODO AMANFROM HEALTH<br>CENTER       | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Volta      | AHAMASU HEALTH CENTRE                | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Volta      | FAITH MATERNITY HOME                 | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Volta      | KADJEBI HEALTH CENTER                | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Volta      | WORAWORA DISTRICT<br>HOSPITAL        | PARTIAL EmONC | YES | YES | YES | NO  | NO  | YES | YES | YES | YES |
| Volta      | TAPA-ABOTOASE HEALTH                 | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |

|       |                                     |               |     |     |     |     |     |     |     |     |     |
|-------|-------------------------------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|       | CENTRE                              |               |     |     |     |     |     |     |     |     |     |
| Volta | NKONNYAWURUPONG H/C                 | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Volta | KWAMEKROM HEALTH CENTRE             | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Volta | ALAVANYO-WUDIDI H/C                 | BASIC         | YES | YES | YES | YES | YES | YES | YES | NO  | NO  |
| Volta | HAVE HEALTH CENTRE                  | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Volta | LOGBA-VUINTA HEALTH CENTRE          | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Volta | HOHOE MUNICIPAL HOSPITAL            | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Volta | ST GEORGE'S CLINIC                  | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Volta | WUSUTA HEALTH CENTRE                | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Volta | KPANDO HEALTH CENTRE                | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Volta | MARGARET MARQUATE CATHOLIC HOSPITAL | PARTIAL EmONC | YES | YES | YES | YES | YES | YES | NO  | YES | YES |
| Volta | ANFOEGA CATHOLIC HOSPITAL           | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Volta | PEKI GOVERNMENT HOSPITAL            | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Volta | E.P CLINIC DZEMENI                  | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Volta | TSANAKPE HEALTH CENTRE              | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Volta | WEGBE-KPALIME HEALTH CENTRE         | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Volta | ADAKLU-WAYA HEALTH CENTRE           | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Volta | ZIOPE HEALTH CENTRE                 | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Volta | KPETOE HEALTH CENTRE                | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Volta | KPEDZE HEALTH CENTRE                | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Volta | HO MUNICIPAL HOSPITAL               | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | YES | YES |
| Volta | REGIONAL HOSPITAL                   | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Volta | SHIA HEALTH CENTRE                  | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Volta | NYIVE HEALTH CENTRE                 | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Volta | DZOLOKPUITA HEALTH CENTRE           | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Volta | TSITO HEALTH CENTRE                 | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Volta | MATER ECCLESIAE CLINIC              | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Volta | DISTRICT HOSP.                      | PARTIAL EmONC | YES | YES | YES | YES | YES | YES | NO  | YES | YES |
| Volta | BENO MATERNITY HOME                 | NON EmONC     | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Volta | AKPORKPLOE HEALTH CENTER            | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |

|       |                                       |               |     |     |     |     |     |     |     |     |     |
|-------|---------------------------------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Volta | CENTRAL AFLAO HOSPITAL                | NON EmONC     | YES | YES | YES | NO  | NO  | YES | NO  | YES | YES |
| Volta | ADINA HEALTH CENTER                   | NON EmONC     | NO  | YES | NO  | NO  | YES | NO  | NO  | NO  | NO  |
| Volta | AGAVEDZI HEALTH CENTER                | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Volta | SAPE AGBO MEMORIAL HOSPITAL           | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | YES |
| Volta | AGBOZUME HEALTH CENTER                | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Volta | KLIKOR HEALTH CENTRE                  | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Volta | KETA HOSPITAL                         | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Volta | TEGBI HEALTH CENTER                   | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Volta | AFIADENYIGBA HEALTH CENTER            | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Volta | ANLOGA HEALTH CENTRE                  | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Volta | ANYANVI HEALTH CENTER                 | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Volta | AKATSI DISTRICT HOSPITAL              | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Volta | HOGGAR CLINIC                         | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Volta | (ABOR HOSPITAL) SACRED HEART HOSPITAL | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Volta | ST PAULS HOSPITAL                     | NON EmONC     | YES | YES | YES | YES | NO  | NO  | YES | NO  | YES |
| Volta | AVE-DAKPA HEALTH CENTER               | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Volta | ST. ANTHONY HOSPITAL                  | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Volta | DABALA HEALTH CENTER                  | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Volta | (SOGAKOPE) DISTRICT HOSPITAL          | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | YES | YES |
| Volta | ADIDOME HOSPITAL                      | PARTIAL EmONC | YES | YES | YES | YES | NO  | YES | YES | YES | YES |
| Volta | KPOTAME HEALTH CENTRE                 | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Volta | BATTOR HOSPITAL                       | PARTIAL EmONC | YES | YES | YES | YES | NO  | YES | YES | YES | YES |
| Volta | COMBONI HOSPITAL                      | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | YES | YES |
| Volta | MAFI KUMASI HEALTH CENTRE             | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Volta | GOOD SHEPHERD MATERNITY HOME          | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Volta | BIODUN MATERNITY/EYE CLINIC           | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Volta | ANYAKO HEALTH CENTRE                  | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Volta | GALO SOTA HEALTH CENTER               | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |



|         |                             |               |     |     |     |     |     |     |     |     |     |
|---------|-----------------------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Western | CHURCH OF PENTECOST CLINIC  | NON EmONC     | NO  | NO  | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Western | ANGELA CATHOLIC CLINIC      | NON EmONC     | NO  | YES | NO  | YES | YES | NO  | YES | NO  | NO  |
| Western | PEACE MATERNITY             | NON EmONC     | YES | YES | YES | NO  | YES | NO  | NO  | NO  | NO  |
| Western | ASEMNYINAKROM HEALTH CENTRE | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | CAMP 15 CHPS                | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Western | FLORENCE MATERNITY          | PARTIAL EmONC | YES | YES | YES | NO  | YES | YES | YES | NO  | NO  |
| Western | KWASI NKRUMAH CLINIC        | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | LIZZY'S MATERNITY           | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | PRESBY CLINIC               | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Western | ESSAM POLYCLINIC            | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | YES | NO  |
| Western | MEMPEASAM HEALTH CENTER     | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Western | ST. LUKES CLINIC            | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | KRISTO NTI MATERNITY        | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Western | ST. ANN'S MATERNITY         | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Western | OSBERT MATERNITY            | BASIC         | YES | YES | YES | YES | YES | YES | YES | NO  | NO  |
| Western | ANNA'S MATERNITY            | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | ADAMASA CLINIC              | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Western | MAGGIES MATERNITY           | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Western | FLORENCE MATERNITY          | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | S.D.A CLINIC                | BASIC         | YES | YES | YES | YES | YES | YES | YES | NO  | NO  |
| Western | THE PROMISE OF GOD.         | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | GHANA MOSLEM MISSION CLINIC | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Western | PATAKRO CLINIC              | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | JUABOSO GOVERNMENT HOSPITAL | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Western | AHIBENSO CLINIC             | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | AKONTOMBRA HEALTH CENTER    | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | BODI ANGLICAN CLINIC        | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Western | WIAWSO GOV'T HOSP.          | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Western | ST. JOHN OF GOD HOSP.       | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Western | KRAMOKROM CHPS              | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |

|         |                                |               |     |     |     |     |     |     |     |     |     |
|---------|--------------------------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Western | NSAWAORA HEALTH CENTRE         | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Western | S.D.A CLINIC                   | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Western | GREENSHIELD CLINIC             | NON EmONC     | YES | YES | YES | NO  | YES | NO  | YES | NO  | YES |
| Western | BEKWAI HEALTH CENTER           | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Western | G.B.C AWASO HOSPITAL           | PARTIAL EmONC | YES | .   | YES | YES | YES | NO  | YES | YES | YES |
| Western | CHIRANO HEALTH CENTER          | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Western | BIBIANI DISTRICT HOSP          | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Western | ASAWINSO CLINIC                | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Western | ANHWIASO HEALTH CENTER         | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Western | OUR LADY'S CLINIC              | PARTIAL EmONC | YES | YES | NO  | YES | NO  | YES | YES | YES | YES |
| Western | STRATFORD MATERNITY HOME       | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Western | LILY MATERNITY HOME            | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Western | GPHA HOSPITAL                  | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | YES | YES |
| Western | SHAMA HEALTH CENTRE            | PARTIAL EmONC | YES | YES | NO  | YES | YES | NO  | YES | NO  | NO  |
| Western | VRA HOSPITAL                   | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Western | SUPOMU DUNKWA HEALTH CENTRE    | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Western | JEMIMA CRENSIL CLINIC          | PARTIAL EmONC | YES | YES | NO  | YES | YES | NO  | YES | YES | NO  |
| Western | DOMPIM COMMUNITY CLINIC NO 1   | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Western | DABOASE HEALTH CENTRE          | PARTIAL EmONC | YES | YES | NO  | YES | YES | YES | YES | NO  | NO  |
| Western | GLORY OF GOD MATERNITY HOME    | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | SEKYERE KROBO COMMUNITY CLINIC | NON EmONC     | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | ATIEKU HEALTH CENTRE           | NON EmONC     | YES | YES | NO  | YES | YES | NO  | NO  | NO  | NO  |
| Western | IT IS THE LORD MATERNITY HOME  | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Western | ATOBIASE COMMUNITY CLINIC      | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | AKUTUASE COMMUNITY CLINIC      | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Western | ADANSI COMMUNITY CLINIC        | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Western | MANSO COMMUNITY CLINIC         | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Western | ADUM BANSO COMMUNITY           | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |

|         | CLINIC                          |               |     |     |     |     |     |     |     |     |     |
|---------|---------------------------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Western | MPORHOR HEALTH CENTRE           | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Western | KWESIMINTIM POLYCLINIC          | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Western | ESSIKADO HOSPITAL               | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Western | AXIM GOVERNMENT HOSPITAL        | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Western | ESIAMA HEALTH CENTRE            | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Western | KUTUKROM HEALTH CENTRE          | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | BAMIANKOR HEALTH CENTRE         | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Western | GWIRA BANSO CHPS                | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | ASASETRE HEALTH CENTRE          | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Western | NKROFUL HEALTH CENTRE           | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Western | ST MARTIN DE PORRES             | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Western | AIYINASE HEALTH CENTRE          | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | NO  | NO  |
| Western | HALF ASSINI GOVERNMENT HOSPITAL | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Western | TIKOBO NO1 HEALTH CENTRE        | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | YES | NO  | NO  |
| Western | TWENEN COMMUNITY CLINIC         | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Western | SAMENYE HEALTH CENTRE           | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Western | ELUBO HEALTH CENTRE             | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | NO  | NO  | NO  |
| Western | FRONTIER CLINIC                 | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | TIKOBO NO2 COMMUNITY CLINIC     | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | TAKORADI HOSPITAL               | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Western | EFFIA NKWANTA REGIONAL HOSPITAL | COMPREHENSIVE | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Western | DADIESO HEALTH CENTRE           | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Western | AMA DANSOWAAH MATERNITY HOME    | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | NO  | NO  | NO  |
| Western | SEWUM HEALTH CENTRE             | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | BOINSO HEALTH CENTRE            | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Western | AQUAI ALLAH CHPS                | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | PRESBY HEALTH CENTRE            | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | ENCHI GOV'T HOSPITAL            | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | YES | YES |

|         |                               |               |     |     |     |     |     |     |     |     |     |
|---------|-------------------------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Western | ST THERESA CLINIC             | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Western | BISAASO HEALTH CENTRE         | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | SAMARTEX HOSPITAL             | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | YES | NO  |
| Western | WURATREM CHPS COMPOUND        | NON EmONC     | NO  | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | JUABO HEALTH CENTRE           | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | NO  | NO  |
| Western | ADJAKAA- MANSO HEALTH CENTRE  | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | AGONA AMENFI HEALTH CENTRE    | NON EmONC     | YES | YES | NO  | YES | NO  | NO  | YES | NO  | NO  |
| Western | ASANKRAN BREMAN HEALTH CENTRE | NON EmONC     | .   | .   | .   | .   | .   | .   | .   | .   | .   |
| Western | ASANKRAGWA CATHOLIC HOSPITAL  | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO  | YES | YES | YES |
| Western | MANSO AMENFI HEALTH CENTRE    | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | NO  | NO  | NO  |
| Western | WASA AKROPONG GOV'T HOSPITAL  | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | NO  | YES | YES |
| Western | JUAKWA/HEMAN CHPS COMPOUND    | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | DAWURAMPONG CHPS              | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | OPON VALLEY HEALTH CENTER     | NON EmONC     | YES | YES | YES | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | PRESTEA GOVERNMENT HOSPITAL   | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Western | HIMAN HEALTH CENTER           | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | BOGOSO HEALTH CENTER          | NON EmONC     | NO  | NO  | YES | YES | YES | NO  | NO  | NO  | NO  |
| Western | AWUDUA COMMUNITY CLINIC       | NON EmONC     | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | HUNI VALLEY HEALTH CENTER     | NON EmONC     | YES | YES | YES | YES | NO  | NO  | NO  | NO  | NO  |
| Western | NEW ATUABO CLINIC             | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO  | NO  | NO  | NO  |
| Western | SIMPA HEALTH CENTER           | NON EmONC     | YES | YES | NO  | NO  | NO  | NO  | YES | NO  | NO  |
| Western | DOMPIM HEALTH CENTRE          | NON EmONC     | NO  | YES | NO  | YES | NO  | NO  | NO  | NO  | NO  |
| Western | TARKWA GOVERNMENT HOSPITAL    | PARTIAL EmONC | YES | YES | YES | YES | YES | NO  | YES | YES | YES |
| Western | ABA HOSPITAL                  | PARTIAL EmONC | YES | YES | NO  | YES | YES | YES | YES | YES | YES |

|         |                                   |               |     |     |     |     |     |    |     |     |     |
|---------|-----------------------------------|---------------|-----|-----|-----|-----|-----|----|-----|-----|-----|
| Western | ABOSO HEALTH CENTRE               | NON EmONC     | YES | YES | NO  | YES | NO  | NO | NO  | NO  | NO  |
| Western | GMC HOSPITAL                      | PARTIAL EmONC | YES | YES | NO  | YES | YES | NO | YES | YES | YES |
| Western | AMI MEMORIAL CLINIC               | PARTIAL EmONC | YES | YES | YES | YES | YES | NO | YES | NO  | NO  |
| Western | NSUAEM HEALTH CENTER              | NON EmONC     | YES | YES | YES | YES | NO  | NO | NO  | NO  | NO  |
| Western | NANA HIMAN DEKYI HOSPITAL         | PARTIAL EmONC | YES | YES | YES | YES | YES | NO | YES | YES | YES |
| Western | MARY AKUABAH EWOO MEMORIAL CLINIC | NON EmONC     | YES | YES | NO  | NO  | NO  | NO | NO  | NO  | NO  |
| Western | AGONA NKWANTA HEALTH CENTER       | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO | YES | NO  | NO  |
| Western | APOWA HEALTH CENTRE               | PARTIAL EmONC | YES | YES | YES | YES | NO  | NO | YES | NO  | NO  |
| Western | ABURA HEALTH CENTER               | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO | NO  | NO  | NO  |
| Western | FASIN CHPS COMPOUND               | NON EmONC     | NO  | YES | NO  | NO  | NO  | NO | NO  | NO  | NO  |

**Table 3.08A: Number of facilities that reported 'no indication' as a reason for not performing the signal function with no drugs, Equipment or health worker who could perform the signal function, by signal function in the last three months**

|   | Antibiotics | Parenteral oxytocics | Parenteral anticonvulsants | Manual removal of placenta | Removal of retained products | Assisted vaginal delivery | Neonatal resuscitation | blood transfusion | Caesarean performed |
|---|-------------|----------------------|----------------------------|----------------------------|------------------------------|---------------------------|------------------------|-------------------|---------------------|
|   | n           | n                    | n                          | n                          | n                            | n                         | n                      | n                 | n                   |
| Number of facilities that did not perform the signal function | 252         | 30                   | 515                        | 628                        | 826                          | 1004                      | 440                    | 936               | 918                 |
| Number of facilities that report that there was no indication | 171         | 20                   | 427                        | 508                        | 540                          | 392                       | 321                    | 169               | 94                  |
| Among those that did not perform the signal function          |             |                      |                            |                            |                              |                           |                        |                   |                     |

|  |    |    |    |    |     |     |    |     |     |
|--|----|----|----|----|-----|-----|----|-----|-----|
| No drugs /equipment to perform SF  | 29 | 28 | 41 | 19 | 129 | 319 | 83 | 376 | 340 |
| No health worker to perform SF   | 6  | 2  | 14 | 32 | 53  | 130 | 13 | 170 | 363 |
| <p><i>Required drugs for oxytocics are injectable oxytocin or ergometrine</i></p> <p><i>Required drugs for anticonvulsants are injectable magnesium sulphate or diazepam</i></p> <p><i>Required equipment for removal of retained products is MVA equipment (vacuum aspirator and cannulae) or curettes for E&amp;C</i></p> <p><i>Required equipment for assisted vaginal delivery is vacuum extractor or mid-cavity or breech forceps</i></p> <p><i>Required equipment for neonatal resuscitation is functional ambu bag and mask</i></p> |    |    |    |    |     |     |    |     |     |

**Table 5.01A: Percentage of facilities with cell phone signal at facility, use and reimbursement of cell phone costs, by facility type and region (among facilities that performed deliveries in last 12 months).**

|  | Total number of facilities that performed deliveries | Percentage of facilities with a cell phone signal on-site | Number of facilities with a cell phone signal on-site | Among facilities with cell phone signal, percentage where: |   |   |   |
|--|--|---|---|--|---|---|---|
|  |  |   |   | Staff use own air time for work calls <sup>1</sup>         | Staff use own cell phone for emergency referral | Staff are <b>regularly</b> reimbursed for own airtime used for work | Staff are <b>sometimes</b> reimbursed for own airtime used for work |
|  |  |   |   | %  | %   | %   | %   |
| National   | 1159   | 86  | 1000  | 88   | 83  | 19  | 12  |
| Facility Type  |  |   |   |  |   |   |   |
| Hospital   | 281  | 92  | 258   | 82   | 74  | 30  | 14  |
| Health Centre  | 509  | 85  | 432   | 93   | 89  | 12  | 9   |
| Maternity  | 164  | 81  | 133   | 82   | 74  | 30  | 23  |
| Health Clinic  | 136  | 87  | 118   | 87   | 86  | 22  | 12  |
| CHPS   | 69   | 86  | 59  | 97   | 90  | 9   | 7   |
| Region   |  |   |   |  |   |   |   |
| Western  | 120  | 88  | 105   | 78   | 77  | 34  | 8   |
| Central  | 105  | 86  | 90  | 93   | 84  | 13  | 11  |
| Greater Accra  | 138  | 94  | 130   | 82   | 59  | 13  | 20  |
| Volta  | 81   | 98  | 79  | 86   | 75  | 11  | 5   |
| Eastern  | 121  | 95  | 115   | 93   | 90  | 20  | 15  |
| Ashanti  | 214  | 65  | 139   | 84   | 86  | 27  | 19  |
| Brong Ahafo  | 120  | 93  | 111   | 84   | 84  | 34  | 10  |
| Northern   | 108  | 92  | 99  | 97   | 91  | 15  | 6   |
| Upper East   | 85   | 94  | 80  | 98   | 94  | 6   | 13  |
| Upper West   | 67   | 78  | 52  | 10<br>0  | 10<br>0   | 12  | 4   |
| <i>1. Up to 2% of facilities in any row did not answer and are excluded from the percentage calculation.</i> |  |   |   |  |   |   |   |

**Table 5.02A: Frequency with which facility staff call ahead to inform receiving facility that a patient is coming, by facility type (among facilities that performed deliveries in last 12 months).**

|                  | All facilities that performed deliveries | Hospitals | Health Centres | Maternities | Health Clinics | CHPS   |
|------------------|--|-----------|----------------|-------------|----------------|--------|
|                  | (n=1151)                                 | (n=277)   | (n=509)        | (n=161)     | (n=135)        | (n=69) |
|                  | %  | %         | %              | %           | %              | %      |
| Always           | 29                                       | 37        | 31             | 22          | 24             | 13     |
| Sometimes        | 43                                       | 41        | 43             | 39          | 43             | 54     |
| Never            | 27                                       | 18        | 26             | 39          | 33             | 32     |
| Don't know       | 0  | 1         | 0              | 0           | 1              | 1      |
| Never refers out | 1  | 3         | 0              | 1           | 0              | 0      |

*Note: Facilities that did not answer are excluded from this table. N-values in header reflect the denominator used for percentage calculations.*



**Table 5.03A: Total number of each type of vehicle available and functional at each facility type and in each region (among facilities that performed deliveries in last 12 months)**

|               | Total number of facilities that performed deliveries | 4-wheeled motor vehicle ambulance | Motorcycle ambulance | Motorized tricycle ambulance | Tractor ambulance | 4-wheeled non-ambulance (e.g. pickup, Land Rover minivan, etc.) | 2-wheeled non-ambulance (e.g. motorbike) | Total functioning modes of motorized transport <sup>1</sup> |
|---------------|--|-----------------------------------|----------------------|------------------------------|-------------------|---|--|---|
|               |  | Total                             | Total                | Total                        | Total             | Total   | Total                                    | Total   |
| National      | 1159   | 2<br>31                           | 5<br>3               | 9                            | 2                 | 545   | 461                                      | 1301  |
| Facility Type |  |                                   |                      |                              |                   |   |  |   |
| Hospital      | 281  | 1<br>62                           | 1<br>9               | 0                            | 1                 | 408   | 44                                       | 634   |
| Health Centre | 509  | 4<br>3                            | 3<br>0               | 8                            | 0                 | 92  | 357                                      | 530   |
| Maternity     | 164  | 6                                 | 0                    | 0                            | 1                 | 18  | 0  | 25  |
| Health Clinic | 136  | 1<br>8                            | 3                    | 1                            | 0                 | 25  | 19                                       | 66  |
| CHPS          | 69   | 2                                 | 1                    | 0                            | 0                 | 2   | 41                                       | 46  |
| Region        |  |                                   |                      |                              |                   |   |  |   |
| Western       | 120  | 1<br>3                            | 0                    | 0                            | 0                 | 27  | 22                                       | 62  |
| Central       | 105  | 2<br>4                            | 4                    | 0                            | 0                 | 32  | 0  | 60  |
| Greater Accra | 138  | 3<br>8                            | 3                    | 1                            | 0                 | 102   | 29                                       | 173   |
| Volta         | 81   | 2<br>0                            | 3<br>2               | 0                            | 0                 | 53  | 17                                       | 122   |

|             |     |        |   |   |   |     |    |     |
|-------------|-----|--------|---|---|---|-----|----|-----|
| Eastern     | 121 | 3<br>0 | 1 | 0 | 0 | 72  | 63 | 166 |
| Ashanti     | 214 | 3<br>9 | 5 | 0 | 0 | 109 | 58 | 211 |
| Brong Ahafo | 120 | 2<br>3 | 0 | 0 | 2 | 50  | 26 | 101 |
| Northern    | 108 | 2<br>3 | 8 | 7 | 0 | 49  | 92 | 179 |
| Upper East  | 85  | 8      | 0 | 1 | 0 | 26  | 62 | 97  |
| Upper West  | 67  | 1<br>3 | 0 | 0 | 0 | 25  | 92 | 130 |

**Table 5.04A: Among facilities with each type of transport, percentage that use transport for emergencies and for other purposes, by facility type and region.**

|               | 4-wheeled motor vehicle ambulance                           |             |                | 4-wheeled non-ambulance (e.g. pickup, Land Rover minivan, etc.) |             |                | 2-wheeled non-ambulance (e.g. motorbike)           |             |                |
|---------------|---|-------------|----------------|---|-------------|----------------|--|-------------|----------------|
|               | Number of facilities with 4-wheeled motor vehicle ambulance | Emergencies | Other purposes | Number of facilities with 4-wheeled non-ambulances              | Emergencies | Other purposes | Number of facilities with 2-wheeled non-ambulances | Emergencies | Other purposes |
|               |   | %           | %              |   | %           | %              |  | %           | %              |
| National      | 195   | 94          | 35             | 169   | 67          | 90             | 259  | 41          | 93             |
| Facility Type |   |             |                |   |             |                |  |             |                |
| Hospital      | 135   | 93          | 30             | 62  | 55          | 84             | 23   | 22          | 87             |
| Health Centre | 38  | 95          | 45             | 69  | 72          | 93             | 185  | 44          | 93             |
| Maternity     | 5   | [100]       | [40]           | 16  | [81]        | [94]           | 0  | -           | -              |
| Health Clinic | 16  | [94]        | [50]           | 20  | 70          | 95             | 20   | 25          | 95             |
| CHPS          | 1   | [100]       | [0]            | 2   | [100]       | [100]          | 31   | 61          | 97             |
| Region        |   |             |                |   |             |                |  |             |                |
| Western       | 12  | [75]        | [42]           | 10  | [70]        | [100]          | 20   | 25          | 80             |
| Central       | 20  | 90          | 50             | 8   | [75]        | [100]          | 0  | -           | -              |
| Greater Accra | 30  | 93          | 13             | 28  | 39          | 89             | 10   | [0]         | [100]          |
| Volta         | 15  | [100]       | [33]           | 9   | [67]        | [100]          | 13   | [0]         | [100]          |
| Eastern       | 27  | 93          | 15             | 16  | [44]        | [94]           | 56   | 11          | 96             |
| Ashanti       | 31  | 90          | 42             | 37  | 68          | 92             | 34   | 56          | 82             |
| Brong Ahafo   | 22  | 100         | 23             | 14  | [71]        | [71]           | 21   | 5           | 100            |
| Northern      | 19  | [100]       | [79]           | 17  | [94]        | [88]           | 40   | 88          | 93             |

|            |    |       |      |    |      |      |    |    |    |
|------------|----|-------|------|----|------|------|----|----|----|
| Upper East | 7  | [100] | [57] | 23 | 95   | 91   | 29 | 66 | 97 |
| Upper West | 12 | [100] | [25] | 7  | [71] | [71] | 36 | 58 | 74 |

*NOTE 1: Missing responses are included in the percentage calculations. This provides a conservative estimate of the percent of facilities using vehicles for emergencies and other purposes.*

*NOTE 2: Percentages in [brackets] are based on fewer than 20 observations.*

**Table 5.05A: Percent distribution of facilities according to person responsible for managing or organizing emergency transport at facility, by facility type (among facilities that performed deliveries in last 12 months)**

|                         | All facilities that performed deliveries | Hospital | Health Centre | Maternity | Health Clinic | CHPS   |
|-------------------------|--|----------|---------------|-----------|---------------|--------|
|                         | (n=1147)                                 | (n=279)  | (n=500)       | (n=164)   | (n=135)       | (n=69) |
|                         | %  | %        | %             | %         | %             | %      |
| Nurse/midwife in charge | 50                                       | 21       | 56            | 71        | 62            | 62     |
| No one person           | 18                                       | 13       | 21            | 19        | 16            | 17     |
| Facility administrator  | 12                                       | 35       | 5             | 2         | 10            | 1      |
| Transport officer       | 6  | 19       | 3             | 0         | 1             | 0      |
| Family member           | 4  | 0        | 5             | 4         | 4             | 9      |
| Medical director        | 3  | 9        | 1             | 0         | 3             | 0      |
| Other <sup>1</sup>      | 7  | 4        | 9             | 4         | 4             | 10     |

*Note: Facilities that did not answer are excluded from this table. N-values in header reflect the denominator used for percentage calculations.*

*1. Other includes medical assistant in charge, community health nurse/officer, public health nurse, security officer, etc.*

**Table 5.06A: Percent distribution of facilities according to person responsible for supervising the driver(s), by facility type (among facilities that use own vehicles for emergency transport)**

|                         | All facilities using own vehicles for emergency transport <sup>2</sup> | Hospital | Health Centre | Maternity | Health Clinic |
|-------------------------|--|----------|---------------|-----------|---------------|
|                         | (n=335)  | (n=188)  | (n=95)        | (n=20)    | (n=32)        |
|                         | %  | %        | %             | %         | %             |
| Facility administrator  | 44   | 58       | 25            | 15        | 42            |
| Transport officer       | 23   | 30       | 22            | 0         | 0             |
| Nurse/midwife in charge | 16   | 1        | 24            | 75        | 45            |
| Medical director        | 6  | 9        | 3             | 0         | 6             |
| Medical assistant       | 5  | 0        | 17            | 0         | 3             |
| No one person           | 2  | 2        | 2             | 10        | 0             |
| Other <sup>1</sup>      | 4  | 1        | 7             | 0         | 3             |

*1. Other includes director of procurement, district health officer, health care coordinator, and don't know responses.*

*2. Facilities that have any type of ambulance and/or a 4-wheeled vehicle that is ever used for emergency transportation are included. Only 3 CHPS compounds met this description and therefore, due to small sample size, CHPS compounds are excluded from this table.*

**Table 5.07A: Percent distribution of facilities according to person responsible for ensuring vehicles are in working order, by facility type (among facilities that use their own vehicles for emergency transport).**

|  | All facilities using own vehicles for emergency transport <sup>2</sup> | Hospital | Health Centre | Maternity | Health Clinic |
|--|--|----------|---------------|-----------|---------------|
|  | (n=335)  | (n=188)  | (n=95)        | (n=20)    | (n=32)        |
|  | %  | %        | %             | %         | %             |
| Facility administrator   | 43   | 55       | 24            | 15        | 45            |
| Transport officer  | 27   | 34       | 26            | 0         | 6             |
| Nurse/midwife in charge  | 12   | 0        | 16            | 75        | 26            |
| Medical director   | 6  | 8        | 3             | 0         | 6             |
| Medical assistant  | 6  | 0        | 19            | 0         | 3             |
| Other <sup>1</sup>   | 7  | 4        | 11            | 10        | 12            |
| 1. Other includes district health officer, driver or senior driver, director of procurement, health care coordinator, etc.   |  |          |               |           |               |
| 2. Facilities that have any type of ambulance and/or a 4-wheeled vehicle that is ever used for emergency transportation are included. Only 3 CHPS compounds met this description and therefore, due to small sample size, CHPS compounds are excluded from this table. |  |          |               |           |               |

**Table 5.08A: Percentage of facilities that use guidelines by facility type and region (among facilities that use their own vehicles for emergency transport)**

|                            | Total number of facilities using own vehicles for emergency transport <sup>1</sup> | Guidelines  |   |   |         |       |
|----------------------------|--|---|---|---|---------|-------|
|                            |  | Explicit written guidelines used to regulate emergency transport <sup>2,3</sup> | Number of facilities with explicit guidelines | Among facilities with guidelines, guidelines produced by <sup>4</sup> : |         |       |
|                            |  |   |   | Facility  | MOH/GHS | Other |
|                            |  | %   | n   | %   | %       | %     |
| National                   | 335  | 49  | 162   | 37  | 49      | 10    |
| Facility Type <sup>1</sup> |  |   |   |   |         |       |
| Hospital                   | 188  | 62  | 115   | 35  | 57      | 7     |
| Health Centre              | 95   | 36  | 34  | 35  | 44      | 15    |
| Maternity                  | 20   | 10  | 2   | 100   | 0       | 0     |
| Health Clinic              | 32   | 35  | 11  | 55  | 0       | 27    |
| Region                     |  |   |   |   |         |       |
| Western                    | 17   | [53]  | [9]   | [56]  | [33]    | [0]   |
| Central                    | 27   | 56  | 15  | 20  | 80      | 0     |
| Greater Accra              | 47   | 40  | 17  | 24  | 53      | 18    |

|             |    |      |      |      |      |     |
|-------------|----|------|------|------|------|-----|
| Volta       | 27 | 44   | 12   | 42   | 58   | 0   |
| Eastern     | 36 | 61   | 22   | 27   | 55   | 18  |
| Ashanti     | 61 | 43   | 26   | 35   | 42   | 15  |
| Brong Ahafo | 37 | 46   | 17   | 47   | 41   | 6   |
| Northern    | 41 | 59   | 24   | 58   | 38   | 4   |
| Upper East  | 24 | 42   | 10   | 30   | 30   | 30  |
| Upper West  | 18 | [56] | [10] | [30] | [70] | [0] |

NOTE: Percentages in [brackets] are based on fewer than 20 observations.

1. Facilities that have any type of ambulance and/or a 4-wheeled vehicle that is ever used for emergency transportation are included. Only 3 CHPS compounds met this description and therefore, due to small sample size, CHPS compounds are excluded from this table.

2. Up to 3% of facilities in any row did not reply. These facilities are excluded from percentage calculation.

3. One in five facilities with guidelines produced them for observation by the data collector.

4. Percent of 'don't know' responses not shown.

**Table 5.09A: Percentage of facilities that use guidelines by facility type and region (among facilities that use their own vehicles for emergency transport) 1**

|                            | Driver expected to maintain a logbook <sup>2</sup> | Number of facilities where driver expected to maintain logbook | Among facilities where driver expected to maintain a logbook, percent where driver is to record <sup>5,6</sup> : |                 |                   |                      |                        |               |                 |
|----------------------------|--|--|--|-----------------|-------------------|----------------------|------------------------|---------------|-----------------|
|                            |  |  | time of departure  | time of arrival | drop off location | mileage at departure | mileage at destination | fuel purchase | purpose of trip |
|                            | %  | n  | %  | %               | %                 | %                    | %                      | %             | %               |
| National                   | 83   | 273  | 84   | 81              | 45                | 75                   | 71                     | 61            | 74              |
| Facility Type <sup>1</sup> |  |  |  |                 |                   |                      |                        |               |                 |
| Hospital                   | 89   | 165  | 86   | 87              | 45                | 78                   | 72                     | 58            | 76              |
| Health Centre              | 91   | 86   | 81   | 70              | 43                | 70                   | 67                     | 67            | 71              |
| Maternity                  | 15   | 3  | [100]  | [100]           | [67]              | [67]                 | [67]                   | [67]          | [67]            |
| Health Clinic              | 61   | 19   | [79]   | [79]            | [47]              | [74]                 | [79]                   | [53]          | [68]            |
| Region                     |  |  |  |                 |                   |                      |                        |               |                 |
| Western                    | [83]   | 14   | [100]  | [100]           | [21]              | [86]                 | [86]                   | [71]          | [64]            |

|               |       |    |      |      |      |      |      |      |      |
|---------------|-------|----|------|------|------|------|------|------|------|
| Central       | 81    | 22 | 73   | 77   | 55   | 55   | 45   | 45   | 55   |
| Greater Accra | 72    | 31 | 100  | 97   | 61   | 81   | 71   | 42   | 87   |
| Volta         | 93    | 25 | 92   | 100  | 56   | 96   | 84   | 88   | 96   |
| Eastern       | 89    | 32 | 81   | 75   | 25   | 75   | 84   | 78   | 69   |
| Ashanti       | 73    | 44 | 84   | 80   | 45   | 75   | 68   | 61   | 73   |
| Brong Ahafo   | 76    | 28 | 93   | 89   | 29   | 68   | 54   | 29   | 54   |
| Northern      | 90    | 37 | 81   | 78   | 59   | 73   | 78   | 68   | 86   |
| Upper East    | 92    | 22 | 55   | 50   | 50   | 77   | 77   | 45   | 64   |
| Upper West    | [100] | 18 | [83] | [61] | [28] | [67] | [61] | [89] | [83] |

NOTE: Percentages in [brackets] are based on fewer than 20 observations.

1. Facilities that have any type of ambulance and/or a 4-wheeled vehicle that is ever used for emergency transportation are included. Only 3 CHPS compounds met this description and therefore, due to small sample size, CHPS compounds are excluded from this table.
2. Up to 3% of facilities in any row did not reply. These facilities are excluded from percentage calculation.
3. One out of five facilities with guidelines produced them for observation by the data collector.
4. Percent of 'don't know' responses not shown.
5. Respondents were not prompted. Responses spontaneously provided.
6. Some respondents provided other responses including number of and names of people on board, signatures of driver and officer in charge, and information about needed maintenance/repair.



**Table 5.10A: Percentage of facilities where drivers are always available, average number of drivers employed and trained, and percentage of facilities including various topics in driver training, by facility type and region (among facilities that use their own vehicles for emergency transport)**

|                            | Total number of facilities using own vehicles for emergency transport <sup>1</sup> | Driver is always available <sup>2</sup> | Average (min, max) number of drivers employed at facility | Average (min, max) number of drivers trained in first aid at facility | Total number of facilities with first-aid trained drivers | Among facilities with first-aid trained drivers, the percentage where training included: |                           |                        |                                 |        |                        |             |                          |                  |                        |                   |                    |
|----------------------------|--|---|---|---|---|--|---------------------------|------------------------|---------------------------------|--------|------------------------|-------------|--------------------------|------------------|------------------------|-------------------|--------------------|
|                            |  |   |   |   |   | airway management  | external bleeding control | splinting legs or arms | principles of spinal precaution | triage | crash scene management | extrication | use of fire extinguisher | simple mechanics | preventive maintenance | defensive driving | logbook completion |
|                            |  | %                                       |   |   |   | %  | %                         | %                      | %                               | %      | %                      | %           | %                        | %                | %                      | %                 |                    |
| National                   | 335  | 93                                      | 2.4 (0, 28)   | 1.3 (0,24)  | 164   | 62   | 70                        | 65                     | 43                              | 38     | 48                     | 21          | 82                       | 58               | 62                     | 61                | 67                 |
| Facility Type <sup>1</sup> |  |   |   |   |   |  |                           |                        |                                 |        |                        |             |                          |                  |                        |                   |                    |
| Hospital                   | 188  | 98                                      | 3.3 (0, 28)   | 1.9 (0, 24)   | 115   | 71   | 74                        | 73                     | 49                              | 43     | 52                     | 23          | 83                       | 67               | 74                     | 76                | 78                 |
| Health Centre              | 95   | 82                                      | 1.1 (0,4)   | 0.4 (0, 3)  | 32  | 47   | 66                        | 53                     | 34                              | 31     | 41                     | 13          | 81                       | 48               | 50                     | 45                | 59                 |
| Maternity                  | 20   | 90                                      | 1.3 (1, 2)  | 0.2 (0, 1)  | 3   | [33]   | [100]                     | [100]                  | [33]                            | [67]   | [33]                   | [33]        | [100]                    | [35]             | [35]                   | [30]              | [20]               |
| Health Clinic              | 32   | 97                                      | 1.4 (1, 3)  | 0.7 (0, 3)  | 14  | [21]   | [43]                      | [14]                   | [14]                            | [14]   | [29]                   | [21]        | [64]                     | [47]             | [47]                   | [38]              | [56]               |
| Region                     |  |   |   |   |   |  |                           |                        |                                 |        |                        |             |                          |                  |                        |                   |                    |
| Western                    | 17   | [100]                                   | [2.4 (1, 8)]  | [0.6 (0, 2)]  | 7   | [71]   | [86]                      | [71]                   | [14]                            | [14]   | [57]                   | [0]         | [86]                     | [53]             | [59]                   | [53]              | [71]               |
| Central                    | 27   | 89                                      | 2.4 (1, 8)  | 1.6 (0, 8)  | 19  | [58]   | [74]                      | [68]                   | [63]                            | [47]   | [68]                   | [47]        | [95]                     | [59]             | [67]                   | [59]              | [67]               |

|               |    |        |              |              |    |      |      |      |      |      |      |      |       |      |      |      |      |
|---------------|----|--------|--------------|--------------|----|------|------|------|------|------|------|------|-------|------|------|------|------|
| Greater Accra | 47 | 98     | 4.1 (1, 24)  | 2.8 (0, 24)  | 21 | 81   | 90   | 90   | 67   | 62   | 52   | 33   | 86    | 53   | 57   | 53   | 49   |
| Volta         | 27 | 89     | 2.6 (1, 6)   | 1.0 (0, 5)   | 11 | [82] | [64] | [82] | [64] | [55] | [55] | [27] | [73]  | [59] | [70] | [59] | [67] |
| Eastern       | 36 | 94     | 2.3 (0, 7)   | 1.7 (0, 7)   | 24 | 50   | 63   | 54   | 38   | 42   | 50   | 8    | 75    | 67   | 75   | 67   | 86   |
| Ashanti       | 61 | 92     | 2.2 (0, 28)  | 1.2 (0, 10)  | 35 | 46   | 54   | 43   | 23   | 37   | 29   | 17   | 80    | 46   | 51   | 46   | 61   |
| Brong Ahafo   | 37 | 86     | 1.9 (0, 9)   | 0.9 (0, 4)   | 16 | [81] | [88] | [81] | [75] | [13] | [50] | [0]  | [100] | [68] | [68] | [68] | [70] |
| Northern      | 41 | 90     | 1.9 (0, 9)   | 0.6 (0, 4)   | 11 | [64] | [82] | [91] | [36] | [27] | [36] | [36] | [73]  | [46] | [46] | [46] | [56] |
| Upper East    | 24 | 96     | 1.8 (1, 5)   | 0.9 (0, 3)   | 9  | [67] | [67] | [56] | [11] | [44] | [67] | [22] | [67]  | [63] | [63] | [63] | [83] |
| Upper West    | 18 | [100 ] | [1.8 (0, 5)] | [1.1 (0, 5)] | 11 | [45] | [55] | [36] | [18] | [18] | [36] | [9]  | [73]  | [94] | [94] | [94] | [94] |

NOTE: Estimates in [brackets] are based on fewer than 20 observations.

1. Facilities that have any type of ambulance and/or a 4-wheeled vehicle that is ever used for emergency transportation are included. Only 3 CHPS compounds met this description and therefore, due to small sample size, CHPS compounds are excluded from this table.

2. Up to 3% of facilities in any row did not answer and are excluded from percentage calculation.

**Table 5.11A: Percentage of facilities with access to local garage, fuel and funds, by facility type and region (among facilities that use their own vehicles for emergency transport).**

|   | Total number of facilities using own vehicles for emergency transport <sup>1</sup> | Garage readily available in district to provide repairs and maintenance | Sufficient fuel available today to transport patient if needed | Sufficient funds available today if maintenance needed <sup>2</sup> |
|---|--|---|--|---|
|   |  | %   | %  | %   |
| National  | 335  | 67  | 90   | 94  |
| Facility Type <sup>1</sup>  |  |   |  |   |
| Hospital  | 188  | 74  | 93   | 96  |
| Health Centre   | 95   | 56  | 83   | 93  |
| Maternity   | 20   | 80  | 90   | 95  |
| Health Clinic   | 32   | 50  | 91   | 88  |
| Region  |  |   |  |   |
| Western   | 17   | [82]  | [94]   | [100]   |
| Central   | 27   | 78  | 85   | 93  |
| Greater Accra   | 47   | 74  | 87   | 85  |
| Volta   | 27   | 74  | 100  | 96  |
| Eastern   | 36   | 67  | 92   | 100   |
| Ashanti   | 61   | 51  | 92   | 95  |
| Brong Ahafo   | 37   | 76  | 81   | 92  |
| Northern  | 41   | 59  | 85   | 93  |
| Upper East  | 24   | 67  | 96   | 96  |
| Upper West  | 18   | [61]  | [89]   | [100]   |
| <i>NOTE: Percentages in [brackets] are based on fewer than 20 observations.</i>   |  |   |  |   |
| <i>1. Facilities that have any type of ambulance and/or a 4-wheeled vehicle that is ever used for emergency transportation are included. Only 3 CHPS compounds met this description and therefore, due to small sample size, CHPS compounds are excluded from this table.</i> |  |   |  |   |
| <i>2. Among facilities reporting sufficient funds not available, the most common reasons for lack of sufficient funds were 'funds not planned for' and 'waiting for health insurance reimbursement.'</i>  |  |   |  |   |

**Table 5.12A: Number of facilities by distance (Km) to nearest facility with surgical care, by type of facility, and region**

|               | Hospitals                              |                |        |             |        | Maternities                              |                |        |             |        | Health Centres                              |                |         |             |             |             |         |
|---------------|--|----------------|--------|-------------|--------|--|----------------|--------|-------------|--------|---|----------------|---------|-------------|-------------|-------------|---------|
|               | Total number of hospitals <sup>1</sup> | Have OT (0 km) | <25 km | 25 to 49 km | 50+ km | Total number of maternities <sup>1</sup> | Have OT (0 km) | <25 km | 25 to 49 km | 50+ km | Total number of health centers <sup>1</sup> | Have OT (0 km) | <25 km  | 25 to 49 km | 50 to 74 km | 75 to 99 km | 100+ km |
| National      | 276                                    | 2<br>56        | 1<br>8 | 2           | 0      | 116                                      | 4              | 9<br>5 | 1<br>4      | 3      | 416   | 3              | 2<br>70 | 1<br>05     | 2<br>0      | 9           | 9       |
| Region        |  |                |        |             |        |  |                |        |             |        |   |                |         |             |             |             |         |
| Western       | 25                                     | 2<br>5         | 0      | 0           | 0      | 6  | 0              | 3      | 2           | 1      | 26  | 0              | 1<br>3  | 1<br>0      | 3           | 0           | 0       |
| Central       | 17                                     | 1<br>6         | 0      | 1           | 0      | 11                                       | 0              | 6      | 4           | 1      | 40  | 0              | 2<br>6  | 1<br>3      | 0           | 0           | 1       |
| Greater Accra | 66                                     | 6<br>0         | 5      | 1           | 0      | 16                                       | 1              | 1<br>4 | 1           | 0      | 12  | 1              | 1<br>1  | 0           | 0           | 0           | 0       |
| Volta         | 24                                     | 2<br>4         | 0      | 0           | 0      | 6  | 0              | 5      | 0           | 1      | 36  | 0              | 2<br>5  | 8           | 0           | 2           | 1       |
| Eastern       | 22                                     | 2<br>2         | 0      | 0           | 0      | 11                                       | 0              | 9      | 2           | 0      | 46  | 0              | 3<br>2  | 1<br>3      | 0           | 1           | 0       |
| Ashanti       | 66                                     | 5<br>7         | 9      | 0           | 0      | 36                                       | 2              | 3<br>1 | 3           | 0      | 62  | 0              | 5<br>1  | 9           | 1           | 1           | 0       |
| Brong Ahafo   | 24                                     | 2<br>4         | 0      | 0           | 0      | 25                                       | 0              | 2<br>3 | 2           | 0      | 43  | 0              | 3<br>2  | 1<br>0      | 1           | 0           | 0       |
| Northern      | 19                                     | 1<br>5         | 4      | 0           | 0      | 3  | 1              | 2      | 0           | 0      | 68  | 0              | 2<br>6  | 2<br>3      | 1<br>1      | 4           | 4       |
| Upper East    | 7                                      | 7              | 0      | 0           | 0      | 1  | 0              | 1      | 0           | 0      | 31  | 1              | 2<br>2  | 6           | 2           | 0           | 0       |
| Upper West    | 6                                      | 6              | 0      | 0           | 0      | 1  | 0              | 1      | 0           | 0      | 52  | 1              | 3<br>2  | 1<br>3      | 2           | 1           | 3       |

*1. 200 facilities without OTs did not know the distance to the nearest facility with surgical care (5 hospitals, 48 maternities, 93 health centers, 36 health clinics, 18 CHPS)*

**Table 5.13A: Number of facilities by distance (Km) to nearest facility with surgical care, by type of facility, and region**

|               | Health Clinics                              |                |        |             |        | CHPS                              |                |        |             |        |
|---------------|---|----------------|--------|-------------|--------|-----------------------------------|----------------|--------|-------------|--------|
|               | Total number of health clinics <sup>1</sup> | Have OT (0 km) | <25 km | 25 to 49 km | 50+ km | Total number of CHPS <sup>1</sup> | Have OT (0 km) | <25 km | 25 to 49 km | 50+ km |
| National      | 100   | 3              | 7<br>1 | 2<br>1      | 5      | 51                                | 0              | 2<br>5 | 2<br>2      | 4      |
| Region        |   |                |        |             |        |                                   |                |        |             |        |
| Western       | 8   | 0              | 4      | 3           | 1      | 7                                 | 0              | 1      | 6           | 0      |
| Central       | 13  | 0              | 1<br>0 | 3           | 0      | 6                                 | 0              | 4      | 2           | 0      |
| Greater Accra | 6   | 1              | 5      | 0           | 0      | 1                                 | 0              | 0      | 1           | 0      |
| Volta         | 3   | 1              | 1      | 0           | 1      | 0                                 | -              | -      | -           | -      |
| Eastern       | 20  | 0              | 1<br>6 | 3           | 1      | 13                                | 0              | 8      | 3           | 2      |
| Ashanti       | 23  | 1              | 1<br>5 | 6           | 1      | 1                                 | 0              | 0      | 1           | 0      |
| Brong Ahafo   | 9   | 0              | 6      | 2           | 1      | 0                                 | -              | -      | -           | -      |
| Northern      | 1   | 0              | 0      | 1           | 0      | 8                                 | 0              | 3      | 4           | 1      |
| Upper East    | 17  | 0              | 1<br>4 | 3           | 0      | 10                                | 0              | 5      | 5           | 0      |
| Upper West    | 0   | -              | -      | -           | -      | 5                                 | 0              | 4      | 0           | 1      |

*1. 200 facilities without OTs did not know the distance to the nearest facility with surgical care (5 hospitals, 48 maternities, 93 health centers, 36 health clinics, 18 CHPS)*

**Table 5.14A: Number of facilities by time (minutes) to nearest facility with surgical care, by type of facility, and region**

|               | Hospitals                              |                 |         |              |        | Maternities                              |                 |         |              |        | Health Centres                              |                 |         |              |              |              |          |
|---------------|--|-----------------|---------|--------------|--------|--|-----------------|---------|--------------|--------|---|-----------------|---------|--------------|--------------|--------------|----------|
|               | Total number of hospitals <sup>1</sup> | Have OT (0 min) | <30 min | 30 to 59 min | 1 hr + | Total number of maternities <sup>1</sup> | Have OT (0 min) | <30 min | 30 to 59 min | 1 hr + | Total number of health centers <sup>1</sup> | Have OT (0 min) | <30 min | 30 to 59 min | 1 to 2 hours | 2 to 3 hours | 3+ hours |
| National      | 276                                    | 256             | 13      | 7            | 0      | 114                                      | 4               | 72      | 24           | 14     | 407   | 3               | 51      | 153          | 73           | 16           | 11       |
| Region        |  |                 |         |              |        |  |                 |         |              |        |   |                 |         |              |              |              |          |
| Western       | 25                                     | 25              | 0       | 0            | 0      | 6  | 0               | 2       | 1            | 3      | 26  | 0               | 8       | 9            | 6            | 3            | 0        |
| Central       | 17                                     | 16              | 0       | 1            | 0      | 10                                       | 0               | 5       | 4            | 1      | 37  | 0               | 6       | 18           | 3            | 0            | 0        |
| Greater Accra | 66                                     | 60              | 4       | 2            | 0      | 16                                       | 1               | 13      | 2            | 0      | 12  | 1               | 5       | 4            | 1            | 0            | 1        |
| Volta         | 24                                     | 24              | 0       | 0            | 0      | 6  | 0               | 4       | 1            | 1      | 35  | 0               | 4       | 15           | 3            | 3            | 0        |
| Eastern       | 22                                     | 22              | 0       | 0            | 0      | 11                                       | 0               | 6       | 4            | 1      | 46  | 0               | 6       | 14           | 6            | 0            | 0        |
| Ashanti       | 66                                     | 57              | 7       | 2            | 0      | 35                                       | 2               | 9       | 11           | 3      | 62  | 0               | 9       | 20           | 12           | 0            | 1        |
| Brong Ahafo   | 24                                     | 24              | 0       | 0            | 0      | 25                                       | 0               | 20      | 0            | 5      | 41  | 0               | 7       | 7            | 4            | 3            | 0        |
| Northern      | 19                                     | 15              | 2       | 2            | 0      | 3  | 1               | 1       | 1            | 0      | 66  | 0               | 11      | 22           | 23           | 5            | 5        |
| Upper East    | 7                                      | 7               | 0       | 0            | 0      | 1  | 0               | 1       | 0            | 0      | 31  | 1               | 0       | 12           | 6            | 1            | 1        |
| Upper West    | 6                                      | 6               | 0       | 0            | 0      | 1  | 0               | 1       | 0            | 0      | 51  | 1               | 5       | 22           | 9            | 1            | 3        |

<sup>1</sup> 215 facilities without OTs did not know the time to the nearest facility with surgical care (5 hospitals, 50 maternities, 102 health centers, 38 health clinics, 20 CHPS)

**Table 5.15A: Number of facilities by time (minutes) to nearest facility with surgical care, by type of facility, and region**

|               | Health Clinics                              |                 |         |              |        | CHPS                              |                 |         |              |        |
|---------------|---|-----------------|---------|--------------|--------|-----------------------------------|-----------------|---------|--------------|--------|
|               | Total number of health clinics <sup>1</sup> | Have OT (0 min) | <30 min | 30 to 59 min | 1 hr + | Total number of CHPS <sup>1</sup> | Have OT (0 min) | <30 min | 30 to 59 min | 1 hr + |
| National      | 98  | 3               | 4<br>8  | 3<br>0       | 1<br>1 | 4<br>9                            | 0               | 1<br>4  | 1<br>6       | 1<br>9 |
| Region        |   |                 |         |              |        |                                   |                 |         |              |        |
| Western       | 8   | 0               | 2       | 2            | 4      | 7                                 | 0               | 1       | 1            | 5      |
| Central       | 13  | 0               | 7       | 5            | 1      | 6                                 | 0               | 3       | 0            | 3      |
| Greater Accra | 6   | 1               | 3       | 1            | 1      | 0                                 | -               | -       | -            | -      |
| Volta         | 3   | 1               | 1       | 0            | 1      | 0                                 | -               | -       | -            | -      |
| Eastern       | 20  | 0               | 1<br>2  | 5            | 3      | 1<br>3                            | 0               | 6       | 5            | 2      |
| Ashanti       | 22  | 1               | 1<br>1  | 7            | 3      | 1                                 | 0               | 0       | 0            | 1      |
| Brong Ahafo   | 8   | 0               | 1       | 6            | 1      | 0                                 | -               | -       | -            | -      |
| Northern      | 1   | 0               | 0       | 0            | 1      | 7                                 | 0               | 0       | 3            | 4      |
| Upper East    | 17  | 0               | 1<br>1  | 4            | 2      | 1<br>0                            | 0               | 2       | 5            | 3      |
| Upper West    | 0   | -               | -       | -            | -      | 5                                 | 0               | 2       | 2            | 1      |

*1. 215 facilities without OTs did not know the time to the nearest facility with surgical care (5 hospitals, 50 maternities, 102 health centres, 38 health clinics, 20 CHPS)*

**Table 5.16A Percentage of facilities that refer to or receive patients from a private facility, by facility type and region (among facilities that performed deliveries in previous 12 months)**

|               | Total number of facilities that performed deliveries | Refer patients to private facility <sup>1</sup> | Receive patients from a private facility <sup>2</sup> |
|---------------|--|---|---|
|               |  | %   | %   |
| National      | 1159   | 29  | 27  |
| Facility Type |  |   |   |
| Hospital      | 281  | 23  | 73  |
| Health Centre | 509  | 31  | 15  |
| Maternity     | 164  | 37  | 5   |

|  |     |    |    |
|--|-----|----|----|
| Health Clinic  | 136 | 35 | 15 |
| CHPS   | 69  | 17 | 4  |
|  |     |    |    |
| Region   |     |    |    |
| Western  | 120 | 42 | 28 |
| Central  | 105 | 9  | 30 |
| Greater Accra  | 138 | 12 | 31 |
| Volta  | 81  | 52 | 36 |
| Eastern  | 121 | 33 | 28 |
| Ashanti  | 214 | 32 | 30 |
| Brong Ahafo  | 120 | 48 | 30 |
| Northern   | 108 | 45 | 26 |
| Upper East   | 85  | 7  | 13 |
| Upper West   | 67  | 3  | 4  |
| 1. One hospital (in Greater Accra) and one maternity (in Ashanti) did not answer and are excluded from percentage calculation.                                     |     |    |    |
| 2. One hospital (in Greater Accra), one health centre (in Ashanti) and one CHPS compound (in Western) did not answer and are excluded from percentage calculation. |     |    |    |

**Table 5.17A: Percent of facilities that waive or require certain fees for patients referred out or in, by facility type and region**

|               | Number of facilities that refer patients to another facility <sup>1</sup> | Obstetric or newborn cases referred OUT of facility                                   |  | Other cases referred OUT  | Number of facilities that receive patients from another facility <sup>5</sup> | Automatically waives certain costs for pregnant or recently delivered woman or her baby who is referred into the facility <sup>6</sup> |
|---------------|---|---|--|---|---|--|
|               |   | Requires transportation / fuel costs are paid before patient transported <sup>2</sup> | Requires all fees paid before patient transported <sup>3</sup> | Requires transportation / fuel costs paid before patient transported <sup>4</sup> |   | %  |
|               |   | %   | %  | %   |   | %  |
| National      | 1,147   | 73  | 9  | 73  | 547   | 44   |
|               |   |   |  |   |   |  |
| Region        |   |   |  |   |   |  |
| Western       | 119   | 85  | 8  | 84  | 58  | 23   |
| Central       | 104   | 62  | 10   | 71  | 52  | 37   |
| Greater Accra | 136   | 59  | 19   | 65  | 59  | 32   |
| Volta         | 80  | 91  | 4  | 90  | 34  | 64   |
| Eastern       | 120   | 90  | 2  | 84  | 61  | 65   |
| Ashanti       | 212   | 66  | 18   | 54  | 117   | 37   |
| Brong         | 119   | 81  | 4  | 78  | 43  | 60   |



|   |         |    |    |    |         |     |
|---|---------|----|----|----|---------|-----|
| Ahafo   |         |    |    |    |         |     |
| Northern  | 107     | 80 | 4  | 80 | 51      | 65  |
| Upper East  | 84      | 43 | 2  | 64 | 41      | 28  |
| Upper West  | 66      | 76 | 5  | 88 | 31      | 39  |
|   |         |    |    |    |         |     |
| Facility Type   |         |    |    |    |         |     |
| Hospital <sup>1</sup>   | 269     | 61 | 15 | 61 | 24<br>4 | 45  |
| Health Centre   | 509     | 81 | 6  | 81 | 21<br>8 | 41  |
| Maternity   | 164     | 68 | 10 | 65 | 34      | 40  |
| Health Clinic   | 136     | 70 | 8  | 74 | 37      | 49  |
| CHPS  | 69      | 75 | 1  | 83 | 14      | 57  |
|   |         |    |    |    |         |     |
| Managing organization   |         |    |    |    |         |     |
| Government  | 7<br>15 | 78 | 7  | 78 | 34<br>1 | 46  |
| Private (for profit)  | 2<br>84 | 62 | 15 | 62 | 10<br>9 | 31  |
| NGO   | 3       | 33 | 0  | 33 | 1       | 100 |
| Religious mission   | 1<br>43 | 70 | 7  | 74 | 96      | 51  |
| <p>1. All teaching and regional hospitals are excluded from first four columns (those related to referring OUT). Though these hospitals may sometimes refer patients out, they do so only rarely and therefore, for the purpose of these analyses, they are considered to not refer. All other facilities are considered to refer out.</p>                    |         |    |    |    |         |     |
| <p>2. Another 9% of facilities (nationally) report "sometimes" requiring that transportation or fuel costs be paid before transport.</p>  |         |    |    |    |         |     |
| <p>3. Another 15% of facilities (nationally) report "sometimes" requiring that fees be paid before being transported.</p>   |         |    |    |    |         |     |
| <p>4. Another 9% of facilities (nationally) report "sometimes" requiring that transportation or fuel costs be paid before transport.</p>  |         |    |    |    |         |     |
| <p>5. Facilities are classified based on their responses to eight questions in Module 11 regarding practices related to receiving referrals. Facilities that indicated they do not receive referred patients in five or more of the eight questions were classified as not receiving patients. All other facilities are classified as receiving patients.</p> |         |    |    |    |         |     |
| <p>6. Another 8% of facilities (nationally) report "sometimes" waiving certain costs. Sixteen facilities did not answer and are excluded from percentage calculations (11% of maternities did not answer and &lt;6% of all other subgroups.)</p>  |         |    |    |    |         |     |

**Table 5.18A: Percent of facilities that provide food, lodging and fuel to families of women referred in, by facility type and region**

|   | Number of facilities that receive patients from another facility <sup>1</sup> | Percentage of facilities that provide following services to families of obstetric or newborn patients who are referred in for care: |         |      |
|---|---|---|---------|------|
|   |   | Food  | Lodging | Fuel |
|   |   | %   | %       | %    |
| National  | 547   | 2   | 19      | 1    |
| Region  |   |   |         |      |
| Western   | 58  | 3   | 9       | 2    |
| Central   | 52  | 0   | 12      | 0    |
| Greater Accra   | 59  | 2   | 10      | 0    |
| Volta   | 34  | 0   | 41      | 0    |
| Eastern   | 61  | 0   | 33      | 2    |
| Ashanti   | 117   | 3   | 20      | 1    |
| Brong Ahafo   | 43  | 0   | 12      | 0    |
| Northern  | 51  | 4   | 25      | 0    |
| Upper East  | 41  | 0   | 20      | 2    |
| Upper West  | 31  | 3   | 10      | 0    |
| Facility Type   |   |   |         |      |
| Hospital  | 244   | 2   | 20      | 0    |
| Health Centre   | 218   | 0   | 16      | 0    |
| Maternity   | 34  | 6   | 27      | 3    |
| Health Clinic   | 37  | 3   | 25      | 3    |
| CHPS  | 14  | 0   | 14      | 7    |
| Managing organization   |   |   |         |      |
| Government  | 341   | 1   | 16      | 1    |
| Private (for profit)  | 109   | 5   | 21      | 1    |
| NGO   | 1   | 0   | 0       | 0    |
| Religious mission   | 96  | 0   | 29      | 0    |
| <i>Note: Facilities that did not answer are excluded from percentage calculation (&lt;3.5% of all subgroups except in Upper West where 6.5% of facilities did not answer question about fuel.)</i>  |   |   |         |      |
| <i><sup>1</sup>Facilities are classified based on their responses to eight questions in Module 11. Facilities that indicated they do not receive referred patients in five or more of the eight questions were classified as not receiving patients. All other facilities are classified as receiving patients.</i> |   |   |         |      |

**Table 5.19A: Percentage of facilities that receive feedback on referred patients and that send a medical person to escort a referred patient, by facility type and region (among facilities that refer patients out)**

|                                | Number of facilities that refer patients to another facility <sup>1</sup> | Receives feedback about the condition of the patient from the receiving facility |           | Sends a medical person to accompany a patient being referred |           | Number of facilities that sometimes or always send a medical person | Among facilities that send a medical person, the percent that send: |                  |         |       |     |
|--------------------------------|---|--|-----------|--|-----------|---|---|------------------|---------|-------|-----|
|                                |   | Always   | Sometimes | Always   | Sometimes |   | Midwife   | Health assistant | CHO/CHN | Nurse | HEW |
|                                |   | %  | %         | %  | %         |   | %   | %                | %       | %     | %   |
| National                       | 1,147   | 15   | 49        | 43   | 43        | 982   | 76  | 33               | 27      | 22    | 12  |
| Facility Type                  |   |  |           |  |           |   |   |                  |         |       |     |
| District hospital <sup>1</sup> | 269   | 17   | 46        | 57   | 33        | 243   | 83  | 31               | 1       | 52    | 12  |
| Health Centre                  | 509   | 14   | 52        | 32   | 50        | 420   | 78  | 34               | 41      | 15    | 13  |
| Maternity                      | 164   | 17   | 46        | 56   | 30        | 142   | 70  | 46               | 1       | 1     | 15  |
| Health Clinic                  | 136   | 15   | 51        | 44   | 43        | 119   | 67  | 35               | 37      | 16    | 10  |
| CHPS                           | 69  | 6  | 46        | 25   | 59        | 58  | 59  | 5                | 81      | 3     | 5   |
| Region                         |   |  |           |  |           |   |   |                  |         |       |     |
| Western                        | 119   | 8  | 63        | 32   | 49        | 96  | 61  | 30               | 26      | 14    | 17  |
| Central                        | 104   | 16   | 47        | 57   | 35        | 95  | 69  | 28               | 32      | 19    | 15  |
| Greater Accra                  | 136   | 26   | 50        | 57   | 35        | 125   | 81  | 27               | 2       | 37    | 8   |
| Volta                          | 80  | 0  | 33        | 23   | 33        | 44  | 91  | 5                | 18      | 18    | 2   |
| Eastern                        | 120   | 16   | 67        | 55   | 43        | 117   | 88  | 27               | 32      | 17    | 3   |
| Ashanti                        | 212   | 22   | 41        | 49   | 35        | 178   | 63  | 52               | 5       | 21    | 17  |
| Brong Ahafo                    | 119   | 4  | 45        | 36   | 52        | 105   | 81  | 59               | 12      | 9     | 16  |

|            |     |    |    |  |    |    |    |    |    |    |    |    |
|------------|-----|----|----|--|----|----|----|----|----|----|----|----|
| Northern   | 107 | 15 | 47 |  | 22 | 59 | 86 | 79 | 24 | 51 | 27 | 26 |
| Upper East | 84  | 4  | 38 |  | 49 | 42 | 76 | 82 | 21 | 58 | 38 | 5  |
| Upper West | 66  | 26 | 71 |  | 27 | 64 | 60 | 80 | 23 | 88 | 15 | 2  |

1. All teaching and regional hospitals are excluded. Though they may sometimes refer patients out, they do so only rarely and therefore, for the purpose of these analyses, they are considered to not refer. All other facilities are considered to refer out.

**Table 5.20A: Number of direct obstetric complications admitted and number and percent referred out, by type of complication and type of facility (among facilities that perform deliveries) - 12 month period between April 2009 and June 2010**

|                    | APH             |          |            | PPH                |          |            | Retained placenta                |          |            | Prolonged/ obstructed labour     |          |            |
|--------------------|-----------------|----------|------------|--------------------|----------|------------|----------------------------------|----------|------------|----------------------------------|----------|------------|
|                    | Admitted        | Referred | % referred | Admitted           | Referred | % referred | Admitted                         | Referred | % referred | Admitted                         | Referred | % referred |
| National           | 3,953           | 1,164    | 29%        | 3,849              | 889      | 23%        | 2,339                            | 536      | 23%        | 15,618                           | 4,412    | 28%        |
| Teaching Hospital  | 876             | 0        | 0%         | 368                | 0        | 0%         | 292                              | 0        | 0%         | 1,205                            | 0        | 0%         |
| Regional Hospitals | 315             | 0        | 0%         | 257                | 9        | 4%         | 112                              | 0        | 0%         | 1,707                            | 53       | 3%         |
| District Hospitals | 2,147           | 277      | 13%        | 2,230              | 159      | 7%         | 1,530                            | 140      | 9%         | 10,916                           | 1,069    | 10%        |
| Health Centres     | 381             | 630      | 165%       | 653                | 475      | 73%        | 293                              | 291      | 99%        | 1,273                            | 2,399    | 188%       |
| Health Clinics     | 137             | 120      | 88%        | 167                | 104      | 62%        | 40                               | 41       | 103%       | 137                              | 269      | 196%       |
| Maternity Homes    | 84              | 118      | 140%       | 135                | 121      | 90%        | 66                               | 58       | 88%        | 321                              | 544      | 169%       |
| CHPS Compounds     | 13              | 19       | -          | 39                 | 21       | 54%        | 6                                | 6        | -          | 59                               | 78       | 132%       |
|                    |                 |          |            |                    |          |            |                                  |          |            |                                  |          |            |
|                    | Ruptured uterus |          |            | Post partum sepsis |          |            | Severe pre-eclampsia / eclampsia |          |            | Severe complications of abortion |          |            |
|                    | Admitted        | Referred | % referred | Admitted           | Referred | % referred | Admitted                         | Referred | % referred | Admitted                         | Referred | % referred |
| National           | 441             | 28       | 6%         | 493                | 70       | 14%        | 3,503                            | 432      | 12%        | 6,062                            | 727      | 12%        |

|   |                   |          |            |                                |          |            |                            |          |            |       |     |      |
|---|-------------------|----------|------------|--------------------------------|----------|------------|----------------------------|----------|------------|-------|-----|------|
| Teaching Hospital   | 53                | 0        | 0%         | 86                             | 0        | 0%         | 1,169                      | 0        | 0%         | 439   | 0   | 0%   |
| Regional Hospitals  | 81                | 0        | 0%         | 34                             | 0        | 0%         | 469                        | 1        | 0%         | 972   | 0   | 0%   |
| District Hospitals  | 305               | 25       | 8%         | 302                            | 24       | 8%         | 1,720                      | 186      | 11%        | 4,241 | 142 | 3%   |
| Health Centres  | 2                 | 3        | -          | 38                             | 28       | 74%        | 97                         | 177      | 182%       | 329   | 470 | 143% |
| Health Clinics  | 0                 | 0        | -          | 12                             | 5        | -          | 15                         | 23       | -          | 45    | 63  | 140% |
| Maternity Homes   | 0                 | 0        | -          | 18                             | 10       | -          | 26                         | 38       | 146%       | 28    | 38  | 136% |
| CHPS Compounds  | 0                 | 0        | -          | 3                              | 3        | -          | 7                          | 7        | -          | 8     | 14  | -    |
|   |                   |          |            |                                |          |            |                            |          |            |       |     |      |
|   | Ectopic pregnancy |          |            | Pregnancy-induced hypertension |          |            | other direct complications |          |            |       |     |      |
|   | Admitted          | Referred | % referred | Admitted                       | Referred | % referred | Admitted                   | Referred | % referred |       |     |      |
| National  | 2,179             | 118      | 5%         | 4,096                          | 1,025    | 25%        | 14,208                     | 3,715    | 26%        |       |     |      |
| Teaching Hospital   | 646               | 0        | 0%         | 1,426                          | 0        | 0%         | 295                        | 0        | 0%         |       |     |      |
| Regional Hospitals  | 337               | 3        | 1%         | 268                            | 2        | 1%         | 1,846                      | 2        | 0%         |       |     |      |
| District Hospitals  | 1,172             | 79       | 7%         | 2,068                          | 331      | 16%        | 10,082                     | 1,011    | 10%        |       |     |      |
| Health Centres  | 11                | 22       | -          | 229                            | 509      | 222%       | 1,546                      | 1,884    | 122%       |       |     |      |
| Health Clinics  | 8                 | 6        | -          | 55                             | 75       | 136%       | 183                        | 249      | 136%       |       |     |      |
| Maternity Homes   | 4                 | 7        | -          | 49                             | 104      | 212%       | 213                        | 533      | 250%       |       |     |      |
| CHPS Compounds  | 1                 | 1        | -          | 1                              | 4        | -          | 43                         | 36       | 84%        |       |     |      |
| <i>Note 1: Percentages not shown where number admitted is less than 20.</i>                               |                   |          |            |                                |          |            |                            |          |            |       |     |      |
| <i>Note 2: Where percentages are above 100%, facilities likely referred women without admitting them.</i> |                   |          |            |                                |          |            |                            |          |            |       |     |      |

**Table 5.21A: Number of indirect obstetric complications admitted and number and percent referred out, by type of complication and type of facility (among facilities that perform deliveries) - 12 month period between April 2009 and June 2010**

|                    | Malaria   |          |            | HIV/AIDS                     |          |            | Severe anaemia |          |            | Sickle cell disease crisis |          |            |
|--------------------|-----------|----------|------------|------------------------------|----------|------------|----------------|----------|------------|----------------------------|----------|------------|
|                    | Admitted  | Referred | % referred | Admitted                     | Referred | % referred | Admitted       | Referred | % referred | Admitted                   | Referred | % referred |
| National           | 33,315    | 647      | 2%         | 3,852                        | 2,012    | 52%        | 4,824          | 1,026    | 21%        | 1,064                      | 295      | 28%        |
| Teaching Hospital  | 517       | 0        | 0%         | 271                          | 0        | 0%         | 300            | 0        | 0%         | 107                        | 0        | 0%         |
| Regional Hospitals | 1,819     | 0        | 0%         | 412                          | 0        | 0%         | 219            | 2        | 1%         | 50                         | 0        | 0%         |
| District Hospitals | 16,255    | 150      | 1%         | 2,312                        | 718      | 31%        | 3,055          | 155      | 5%         | 791                        | 32       | 4%         |
| Health Centres     | 7,579     | 333      | 4%         | 669                          | 900      | 135%       | 784            | 645      | 82%        | 91                         | 179      | 197%       |
| Health Clinics     | 3,438     | 97       | 3%         | 99                           | 279      | 282%       | 296            | 104      | 35%        | 16                         | 71       | -          |
| Maternity Homes    | 3,161     | 59       | 2%         | 60                           | 77       | 128%       | 157            | 109      | 69%        | 2                          | 12       | -          |
| CHPS Compounds     | 546       | 8        | 1%         | 29                           | 38       | 131%       | 13             | 11       | -          | 7                          | 1        | -          |
|                    | Hepatitis |          |            | Other indirect complications |          |            |                |          |            |                            |          |            |
|                    | Admitted  | Referred | % referred | Admitted                     | Referred | % referred |                |          |            |                            |          |            |
| National           | 310       | 75       | 24%        | 2,136                        | 422      | 20%        |                |          |            |                            |          |            |
| Teaching Hospital  | 61        | 0        | 0%         | 250                          | 0        | 0%         |                |          |            |                            |          |            |
| Regional Hospitals | 14        | 0        | 0%         | 154                          | 0        | 0%         |                |          |            |                            |          |            |
| District Hospitals | 195       | 32       | 16%        | 1,378                        | 126      | 9%         |                |          |            |                            |          |            |
| Health Centres     | 31        | 28       | 90%        | 204                          | 234      | 115%       |                |          |            |                            |          |            |

|                 |   |    |   |     |    |      |  |  |  |  |  |
|-----------------|---|----|---|-----|----|------|--|--|--|--|--|
| Health Clinics  | 1 | 2  | - | 121 | 28 | 23%  |  |  |  |  |  |
| Maternity Homes | 6 | 11 | - | 21  | 29 | 138% |  |  |  |  |  |
| CHPS Compounds  | 2 | 2  | - | 8   | 5  | -    |  |  |  |  |  |

*Note 1: Percentages not shown where number admitted is less than 20.*

*Note 2: Where percentages are above 100%, facilities likely referred women without admitting them.*

**Table 5.22A: Percentage of facilities with various components of an HMIS system for referrals**

|                                | Number of facilities that refer patients to another facility <sup>1</sup> | Required to report on number of patients referred out | Maternity patients referred out             |                            | Staff sends patient with completed referral form |       | Average monthly number of patients referred out to a higher level of care <sup>3</sup> |         |                  |                        |
|--------------------------------|---|---|---|----------------------------|--|-------|--|---------|------------------|------------------------|
|                                |   |   | Recorded in exclusive register <sup>2</sup> | Recorded in other register | Always   | Never | Obstetric  | Newborn | Children under 5 | Adults (non-maternity) |
|                                |   |   | %   | %                          | %  | %     |  |         |                  |                        |
| National                       | 1,147   | 87  | 43  | 21                         | 82   | 7     | 3.0  | 0.7     | 2.9              | 3.6                    |
| <b>Facility Type</b>           |   |   |   |                            |  |       |  |         |                  |                        |
| District hospital <sup>1</sup> | 269   | 82  | 46  | 20                         | 88   | 6     | 3.1  | 0.9     | 2.1              | 4.1                    |
| Health centre                  | 509   | 91  | 47  | 21                         | 83   | 6     | 3.2  | 0.6     | 3.6              | 3.9                    |
| Maternity                      | 164   | 84  | 46  | 17                         | 75   | 10    | 3.6  | 0.5     | 2.0              | 2.0                    |
| Health clinic                  | 136   | 89  | 35  | 23                         | 80   | 10    | 2.5  | 0.6     | 2.9              | 3.6                    |
| CHPS compound                  | 69  | 91  | 19  | 32                         | 78   | 10    | 1.7  | 0.6     | 2.2              | 2.8                    |
| <b>Region</b>                  |   |   |   |                            |  |       |  |         |                  |                        |
| Western                        | 119   | 90  | 45  | 16                         | 88   | 4     | 2.8  | 0.9     | 3.7              | 4.8                    |
| Central                        | 104   | 97  | 61  | 14                         | 91   | 0     | 2.9  | 0.6     | 2.4              | 3.3                    |
| Greater Accra                  | 136   | 62  | 50  | 18                         | 79   | 13    | 4.8  | 0.6     | 1.6              | 2.9                    |

|  |     |    |    |    |     |    |     |     |     |     |
|--|-----|----|----|----|-----|----|-----|-----|-----|-----|
| Volta  | 80  | 71 | 48 | 16 | 72  | 19 | 2.5 | 0.6 | 2.5 | 3.3 |
| Eastern  | 120 | 97 | 37 | 19 | 77  | 5  | 2.4 | 0.6 | 3.5 | 4.3 |
| Ashanti  | 212 | 87 | 37 | 20 | 78  | 9  | 2.8 | 0.8 | 2.7 | 3.0 |
| Brong Ahafo  | 119 | 97 | 54 | 29 | 90  | 1  | 4.4 | 0.6 | 3.4 | 4.3 |
| Northern   | 107 | 91 | 45 | 21 | 75  | 15 | 1.9 | 0.5 | 3.1 | 3.0 |
| Upper East   | 84  | 98 | 29 | 42 | 83  | 6  | 2.5 | 0.7 | 2.8 | 3.5 |
| Upper West   | 66  | 94 | 25 | 21 | 100 | 0  | 2.8 | 0.6 | 4.2 | 3.9 |
| <i>NOTE: Up to 2% of facilities (in any row) did not answer and are excluded from percentage calculation.</i>  |     |    |    |    |     |    |     |     |     |     |
| <i>1. All teaching and regional hospitals are excluded. Though they may sometimes refer patients out, they do so only rarely and therefore, for the purpose of these analyses, they are considered to not refer. All other facilities are considered to refer out.</i> |     |    |    |    |     |    |     |     |     |     |
| <i>2. These percentages represent the facilities where the register was observed by the data collector. An additional 2-10% (4% nationally) of facilities reported having an exclusive register but could not produce it for observation.</i>                          |     |    |    |    |     |    |     |     |     |     |
| <i>3. Up to 25% of facilities in any row did not provide the number of patients referred out, either because they did not know or it was not recorded. These facilities are not included in the average calculation.</i>   |     |    |    |    |     |    |     |     |     |     |

**Table 5.23A: Percentage of facilities that provide feedback on referred patients and that record and report on patients referred in, by facility type and region (among facilities that refer patients in).**

|          | Number of facilities that receive patients from another facility <sup>1</sup> | Sends feedback about the condition of the patient to the sending facility <sup>2</sup> |           | Required to report on number of patients referred in <sup>3</sup> | Maternity patients referred in:               |                            | Patients referred in come with a referral form: <sup>6</sup> |           | Average number of patients referred in <sup>7</sup> |                   |                   |                        |
|----------|---|--|-----------|---|---|----------------------------|--|-----------|---|-------------------|-------------------|------------------------|
|          |   | Always   | Sometimes |   | Recorded in exclusive register <sup>4,5</sup> | Recorded in other register | Always   | Sometimes | Obstetric   | Newborn           | Children under 5  | Adults (non-maternity) |
|          |   | %  | %         |   | %   | %                          | %  | %         | average per month                                   | average per month | average per month | average per month      |
| National | 547   | 2  | 44        | 7   | 1   | 2                          | 2  | 38        | 5.6   | 2.2               | 5.3               | 5.5                    |



|                  |     |        |    |        |        |        |        |    |     |     |          |     |  |
|------------------|-----|--------|----|--------|--------|--------|--------|----|-----|-----|----------|-----|--|
|                  |     | 2      |    | 4      | 9      | 0      | 8      |    |     |     |          |     |  |
| Region           |     |        |    |        |        |        |        |    |     |     |          |     |  |
| Western          | 58  | 1<br>1 | 65 | 7<br>2 | 2<br>1 | 1<br>9 | 1<br>6 | 52 | 5.6 | 3.2 | 6.9      | 6.1 |  |
| Central          | 52  | 3<br>5 | 42 | 8<br>8 | 2<br>1 | 2<br>1 | 3<br>1 | 33 | 7.0 | 1.2 | 3.6      | 4.8 |  |
| Greater<br>Accra | 59  | 2<br>5 | 46 | 4<br>6 | 1<br>4 | 2<br>4 | 4<br>7 | 36 | 6.0 | 1.6 | 3.6      | 3.3 |  |
| Volta            | 34  | 9      | 30 | 6<br>4 | 4<br>5 | 1<br>5 | 3<br>3 | 45 | 7.6 | 1.9 | 4.7      | 9.6 |  |
| Eastern          | 61  | 2<br>3 | 56 | 9<br>3 | 2<br>1 | 1<br>3 | 2<br>3 | 40 | 4.6 | 1.6 | 3.9      | 4.9 |  |
| Ashanti          | 117 | 1<br>4 | 36 | 7<br>3 | 9      | 1<br>5 | 1<br>6 | 35 | 5.0 | 3.1 | 4.7      | 5.4 |  |
| Brong<br>Ahafo   | 43  | 9      | 44 | 6<br>3 | 2<br>1 | 4<br>2 | 2<br>8 | 44 | 8.6 | 3.4 | 11.<br>4 | 8.5 |  |
| Northern         | 51  | 2<br>4 | 41 | 7<br>5 | 2<br>7 | 1<br>6 | 2<br>7 | 29 | 3.5 | 1.3 | 5.0      | 4.4 |  |
| Upper East       | 41  | 2<br>4 | 46 | 7<br>6 | 1<br>0 | 2<br>9 | 3<br>3 | 38 | 4.9 | 2.2 | 4.6      | 4.5 |  |
| Upper<br>West    | 31  | 6<br>5 | 29 | 9<br>7 | 1<br>9 | 2<br>3 | 5<br>5 | 35 | 5.4 | 1.0 | 6.0      | 4.4 |  |
| Facility Type    |     |        |    |        |        |        |        |    |     |     |          |     |  |
| Hospital         | 244 | 1<br>6 | 47 | 7<br>6 | 3<br>3 | 2<br>2 | 4<br>0 | 50 | 9.9 | 3.4 | 8.0      | 9.0 |  |
| Health<br>Centre | 218 | 2<br>6 | 43 | 7<br>3 | 8      | 2<br>1 | 2<br>3 | 29 | 2.1 | 1.2 | 3.2      | 3.0 |  |
| Maternity        | 34  | 2<br>4 | 21 | 6<br>8 | 6      | 9      | 0      | 12 | 2.5 | 0.1 | 1.8      | 1.3 |  |
| Health<br>Clinic | 37  | 2<br>7 | 46 | 6<br>9 | 5      | 2<br>4 | 1<br>7 | 50 | 2.5 | 1.2 | 3.9      | 2.6 |  |
| CHPS             | 14  | 3      | 50 | 9      | 0      | 7      | 7      | 14 | 2.3 | 0.9 | 2.3      | 0.4 |  |

|   |     |     |    |     |    |     |    |    |     |     |     |     |  |
|---|-----|-----|----|-----|----|-----|----|----|-----|-----|-----|-----|--|
|   |     | 6   |    | 3   |    |     |    |    |     |     |     |     |  |
| Managing organization   |     |     |    |     |    |     |    |    |     |     |     |     |  |
| Government  | 341 | 21  | 46 | 78  | 19 | 20  | 27 | 38 | 5.5 | 2.5 | 5.6 | 5.4 |  |
| Private (for profit)  | 109 | 24  | 36 | 55  | 87 | 17  | 32 | 28 | 3.7 | 0.5 | 3.0 | 3.6 |  |
| NGO   | 1   | 100 | 0  | 100 | 0  | 100 | 0  | 0  | 5.0 | 2.0 | 4.0 | 0.0 |  |
| Religious mission   | 96  | 20  | 49 | 81  | 29 | 25  | 27 | 52 | 8.0 | 2.6 | 6.5 | 7.6 |  |
| 1. Facilities are classified based on their responses to eight questions in Module 11. Facilities that indicated they do not receive referred patients in five or more of the eight questions were classified as not receiving patients. All other facilities are classified as receiving patients. |     |     |    |     |    |     |    |    |     |     |     |     |  |
| 2. Three facilities did not answer and are excluded from percentage calculations (<3% of any subgroup).   |     |     |    |     |    |     |    |    |     |     |     |     |  |
| 3. Nine facilities did not answer and are excluded from percentage calculations (<3% of any subgroup except 9% of maternities and 7% of facilities in Brong Ahafo did not answer).  |     |     |    |     |    |     |    |    |     |     |     |     |  |
| 4. Seven facilities did not answer and are excluded from percentage calculation (<3% of any subgroup, except 9% of facilities in Volta did not answer)  |     |     |    |     |    |     |    |    |     |     |     |     |  |
| 5. An additional 2% of facilities (nationally) reported having an exclusive register but could not produce it for observation.  |     |     |    |     |    |     |    |    |     |     |     |     |  |
| 6. Three facilities did not answer and are excluded from percentage calculations (<3% of any subgroup)  |     |     |    |     |    |     |    |    |     |     |     |     |  |
| 7. Facilities that did not answer are excluded from average calculation.  |     |     |    |     |    |     |    |    |     |     |     |     |  |

**Table 6.01A: National targets of required staff for selected health worker cadres by region**

| Region  | Total Population | Number of facilities | Obstetrician/ Gynaecologist | Paediatrician | General Practitioner | Medical Assistant | Midwife | Clinical Nurse | Health Assistant | Community Health Officer/Nurse | Public Health Nurse | Anaesthesiologist | Nurse Anaesthetist |
|---|------------------|----------------------|-----------------------------|---------------|----------------------|-------------------|---------|----------------|------------------|--------------------------------|---------------------|-------------------|--------------------|
| Required staff  |                  |                      |                             |               |                      |                   |         |                |                  |                                |                     |                   |                    |
| Ghana   | 24,232,431       | 1,268                | 459                         | 283           | 1,530                | 1,193             | 6,364   | 9,759          | 5,487            | 3,856                          | 435                 | 167               | 723                |
| Western   | 2,325,597        | 120                  | 20                          | 17            | 119                  | 121               | 592     | 945            | 554              | 473                            | 41                  | 11                | 54                 |
| Central   | 2,107,209        | 106                  | 22                          | 16            | 86                   | 83                | 480     | 829            | 464              | 471                            | 26                  | 8                 | 31                 |
| Greater Accra   | 3,909,764        | 148                  | 162                         | 70            | 569                  | 176               | 1,519   | 2,004          | 567              | 441                            | 98                  | 74                | 213                |
| Volta   | 2,099,876        | 82                   | 30                          | 23            | 92                   | 100               | 534     | 909            | 354              | 326                            | 38                  | 12                | 56                 |
| Eastern   | 2,596,013        | 124                  | 25                          | 18            | 84                   | 105               | 528     | 952            | 521              | 283                            | 24                  | 10                | 53                 |
| Ashanti   | 4,725,046        | 216                  | 101                         | 77            | 295                  | 173               | 1,072   | 1,508          | 1,185            | 454                            | 60                  | 13                | 143                |
| Brong Ahafo   | 2,282,128        | 121                  | 41                          | 26            | 127                  | 128               | 488     | 904            | 894              | 246                            | 44                  | 11                | 73                 |
| Northern  | 2,468,557        | 108                  | 42                          | 22            | 82                   | 143               | 544     | 853            | 481              | 330                            | 37                  | 21                | 55                 |
| Upper East  | 1,031,478        | 147                  | 12                          | 12            | 50                   | 129               | 374     | 679            | 301              | 546                            | 55                  | 4                 | 27                 |
| Upper West  | 677,763          | 96                   | 4                           | 2             | 26                   | 35                | 233     | 176            | 166              | 286                            | 12                  | 3                 | 18                 |
| <p><i>Note: No national information for staffing norms exists. Heads of facilities were asked to provide the number of each cadre needed at their facility and those responses are reported here.</i></p> |                  |                      |                             |               |                      |                   |         |                |                  |                                |                     |                   |                    |

**Table 6.02A: Number of selected health worker cadres currently working in facilities by region**

| Region                  | Total Population | Number of facilities | Obstetrician/ Gynaecologist | Paediatrician | General Practitioner | Medical Assistant | Midwife | Clinical Nurse | Health Assistant | Community Health Officer/Nurse | Public Health Nurse | Anaesthesiologist | Nurse Anaesthetist |
|-------------------------|------------------|----------------------|-----------------------------|---------------|----------------------|-------------------|---------|----------------|------------------|--------------------------------|---------------------|-------------------|--------------------|
| Staff currently working |                  |                      |                             |               |                      |                   |         |                |                  |                                |                     |                   |                    |
| Ghana                   | 24,232,431       | 1,268                | 279                         | 109           | 1,230                | 755               | 4,726   | 7,567          | 4,364            | 3,851                          | 256                 | 54                | 455                |
| Western                 | 2,325,597        | 120                  | 10                          | 5             | 84                   | 63                | 385     | 568            | 365              | 388                            | 23                  | 1                 | 25                 |
| Central                 | 2,107,209        | 106                  | 11                          | 3             | 60                   | 70                | 359     | 563            | 335              | 423                            | 10                  | 3                 | 26                 |
| Greater Accra           | 3,909,764        | 148                  | 141                         | 39            | 531                  | 132               | 1,224   | 2,220          | 594              | 596                            | 111                 | 42                | 127                |
| Volta                   | 2,099,876        | 82                   | 9                           | 1             | 49                   | 49                | 342     | 496            | 242              | 311                            | 13                  | 0                 | 27                 |
| Eastern                 | 2,596,013        | 124                  | 6                           | 8             | 105                  | 70                | 476     | 871            | 366              | 261                            | 12                  | 1                 | 36                 |
| Ashanti                 | 4,725,046        | 216                  | 81                          | 47            | 254                  | 137               | 892     | 1,235          | 1,070            | 606                            | 37                  | 2                 | 127                |
| Brong Ahafo             | 2,282,128        | 121                  | 10                          | 2             | 63                   | 69                | 392     | 647            | 896              | 289                            | 17                  | 1                 | 38                 |
| Northern                | 2,468,557        | 108                  | 5                           | 2             | 40                   | 86                | 308     | 435            | 270              | 316                            | 14                  | 2                 | 23                 |
| Upper East              | 1,031,478        | 147                  | 3                           | 1             | 27                   | 61                | 190     | 354            | 112              | 408                            | 11                  | 1                 | 13                 |
| Upper West              | <b>677,763</b>   | 96                   | 3                           | 1             | 17                   | 18                | 158     | 178            | 114              | 253                            | 8                   | 1                 | 13                 |

**Table 6.03A: Ratio of required staff per per 200,000 population for selected health worker cadres by Region**

| Region  | Population | Obstetrician/<br>Gynaecologist | Paediatrician | General Practitioner | Medical Assistant | Midwife | Clinical Nurse | Health Assistant | Community Health Officer/Nurse | Public Health Nurse | Anaesthesiologist (MD) | Nurse Anaesthetist |
|---|------------|--------------------------------|---------------|----------------------|-------------------|---------|----------------|------------------|--------------------------------|---------------------|------------------------|--------------------|
| Required staff  |            |                                |               |                      |                   |         |                |                  |                                |                     |                        |                    |
| Ghana   | 24,232,431 | 3.8                            | 2.3           | 12.6                 | 9.9               | 52.5    | 80.5           | 45.3             | 31.8                           | 3.6                 | 1.4                    | 6.0                |
| Western   | 2,325,597  | 1.7                            | 1.5           | 10.2                 | 10.4              | 50.9    | 81.3           | 47.6             | 40.7                           | 3.5                 | 1.0                    | 3.9                |
| Central   | 2,107,209  | 2.1                            | 1.5           | 8.2                  | 7.9               | 45.6    | 78.7           | 44.0             | 44.7                           | 2.5                 | 0.8                    | 2.9                |
| Greater Accra   | 3,909,764  | 8.3                            | 3.6           | 29.1                 | 9.0               | 77.7    | 102.5          | 29.0             | 22.6                           | 5.0                 | 3.8                    | 11.8               |
| Volta   | 2,099,876  | 2.9                            | 2.2           | 8.8                  | 9.5               | 50.9    | 86.6           | 33.7             | 31.1                           | 3.6                 | 1.1                    | 5.3                |
| Eastern   | 2,596,013  | 1.5                            | 1.4           | 6.5                  | 8.1               | 40.7    | 73.3           | 40.1             | 21.8                           | 1.9                 | 0.8                    | 4.1                |
| Ashanti   | 4,725,046  | 4.3                            | 3.3           | 12.5                 | 7.3               | 45.4    | 63.8           | 50.2             | 19.2                           | 2.5                 | 0.6                    | 6.1                |
| Brong Ahafo   | 2,282,128  | 3.6                            | 2.3           | 11.1                 | 11.2              | 42.8    | 79.2           | 78.4             | 21.6                           | 3.9                 | 1.0                    | 6.4                |
| Northern  | 2,468,557  | 3.4                            | 1.8           | 6.6                  | 11.6              | 44.1    | 69.1           | 39.0             | 26.7                           | 3.0                 | 1.7                    | 4.5                |
| Upper East  | 1,031,478  | 2.3                            | 2.3           | 9.7                  | 25.0              | 72.5    | 131.7          | 58.4             | 105.9                          | 10.7                | 0.8                    | 5.2                |
| Upper West  | 677,763    | 1.2                            | 0.6           | 7.7                  | 10.3              | 68.8    | 51.9           | 49.0             | 84.4                           | 3.5                 | 0.9                    | 5.3                |
| <p><i>Note: No national information for staffing norms exists. Heads of facilities were asked to provide the number of each cadre needed at their facility and those responses are reported here.</i></p> |            |                                |               |                      |                   |         |                |                  |                                |                     |                        |                    |

**Table 6.04A: Ratio of current staff per 200,000 population for selected health worker cadres by region**

| Region                  | Population | Obstetrician/<br>Gynaecologist | Paediatrician | General Practitioner | Medical Assistant | Midwife | Clinical Nurse | Health Assistant | Community Health Officer/Nurse | Public Health Nurse | Anaesthesiologist (MD) | Nurse Anaesthetist |
|-------------------------|------------|--------------------------------|---------------|----------------------|-------------------|---------|----------------|------------------|--------------------------------|---------------------|------------------------|--------------------|
| Staff currently working |            |                                |               |                      |                   |         |                |                  |                                |                     |                        |                    |
| Ghana                   | 24,232,431 | 2.3                            | 0.9           | 10.2                 | 6.2               | 39.0    | 62.5           | 36.0             | 31.8                           | 2.1                 | 0.5                    | 3.8                |
| Western                 | 2,325,597  | 0.9                            | 0.4           | 7.2                  | 5.4               | 33.1    | 48.9           | 31.4             | 33.4                           | 2.0                 | 0.1                    | 2.2                |
| Central                 | 2,107,209  | 1.0                            | 0.3           | 5.7                  | 6.6               | 34.1    | 53.4           | 31.8             | 40.2                           | 1.0                 | 0.3                    | 2.5                |
| Greater Accra           | 3,909,764  | 7.2                            | 2.0           | 27.2                 | 6.8               | 62.6    | 113.6          | 30.4             | 30.5                           | 5.7                 | 2.2                    | 6.5                |
| Volta                   | 2,099,876  | 0.9                            | 0.1           | 4.7                  | 4.7               | 32.6    | 47.2           | 23.1             | 29.6                           | 1.2                 | 0.0                    | 2.6                |
| Eastern                 | 2,596,013  | 0.6                            | 0.6           | 8.1                  | 5.4               | 36.7    | 67.1           | 28.2             | 20.1                           | 1.0                 | 0.1                    | 2.8                |
| Ashanti                 | 4,725,046  | 3.4                            | 2.0           | 10.8                 | 5.8               | 37.8    | 52.3           | 45.3             | 25.7                           | 1.6                 | 0.1                    | 5.4                |
| Brong Ahafo             | 2,282,128  | 0.9                            | 0.2           | 5.5                  | 6.1               | 34.4    | 56.7           | 78.5             | 25.3                           | 1.5                 | 0.1                    | 3.3                |
| Northern                | 2,468,557  | 0.4                            | 0.2           | 3.2                  | 7.0               | 25.0    | 35.2           | 21.9             | 25.6                           | 1.1                 | 0.2                    | 1.9                |
| Upper East              | 1,031,478  | 0.6                            | 0.2           | 5.2                  | 11.8              | 36.8    | 68.6           | 21.7             | 79.1                           | 2.1                 | 0.2                    | 2.5                |
| Upper West              | 677,763    | 0.9                            | 0.3           | 5.0                  | 5.3               | 46.6    | 52.5           | 33.6             | 74.7                           | 2.4                 | 0.3                    | 3.8                |

**Table 6.05A: Total number of selected health worker cadres who are currently working, who left and who were posted in the 12 months, by type of facility and cadre of health worker**

| Health worker cadre            | Teaching Hospital              |   |  |                                | Net gain (loss) | Regional Hospital                           |   |                                   | Net gain (loss) | District Hospital                              |   |  |
|--------------------------------|--------------------------------|---|--|--------------------------------|-----------------|---|---|-----------------------------------|-----------------|--|---|--|
|                                | No. of staff currently working | No. of staff who left in the last 12 months | No. of staff posted in the last 12 month | No. of staff currently working |                 | No. of staff who left in the last 12 months | Number of staff posted in the last 12 month | Number of staff currently working |                 | Number of staff who left in the last 12 months | Number of staff posted in the last 12 month |  |
| Overall staffing: Ghana        | 2,553                          | 66  | 166                                      | 100                            | 2,064           | 92  | 211   | 119                               | 14,254          | 845  | 1,735                                       |  |
| Obstetrician/Gynaecologist     | 29                             | 1   | 0  | -1                             | 23              | 1   | 2   | 1                                 | 208             | 15   | 20  |  |
| Paediatrician                  | 29                             | 0   | 0  | 0                              | 7               | 3   | 1   | -2                                | 72              | 5  | 6   |  |
| General Practitioner           | 273                            | 0   | 0  | 0                              | 135             | 19  | 20  | 1                                 | 742             | 73   | 111   |  |
| Medical Assistant              | 5                              | 0   | 1  | 1                              | 11              | 0   | 4   | 4                                 | 375             | 40   | 45  |  |
| Midwife                        | 431                            | 24  | 74                                       | 50                             | 319             | 16  | 26  | 10                                | 2,425           | 177  | 239   |  |
| Clinical Nurse                 | 1,181                          | 40  | 87                                       | 47                             | 1,019           | 33  | 70  | 37                                | 4,571           | 246  | 524   |  |
| Health Assistant               | 142                            | 0   | 0  | 0                              | 177             | 3   | 39  | 36                                | 2,604           | 81   | 371   |  |
| Community Health Officer/Nurse | 22                             | 0   | 0  | 0                              | 81              | 1   | 20  | 19                                | 897             | 64   | 169   |  |
| Public Health Nurse            | 10                             | 1   | 0  | -1                             | 21              | 2   | 4   | 2                                 | 152             | 9  | 15  |  |
| Anaesthesiologist              | 5                              | 0   | 0  | 0                              | 5               | 1   | 1   | 0                                 | 43              | 5  | 6   |  |
| Nurse Anaesthetist             | 57                             | 0   | 0  | 0                              | 42              | 6   | 2   | -4                                | 348             | 24   | 37  |  |

**Table 6.06A: Total number of selected health worker cadres who are currently working, who left and who were posted in the 12 months, by type of facility and cadre of health worker**

| Health worker cadre            | Health Centre                     |  |   |                 | Health Clinic                     |  |   |                 | Maternity Home                    |  |   |                 |
|--------------------------------|-----------------------------------|--|---|-----------------|-----------------------------------|--|---|-----------------|-----------------------------------|--|---|-----------------|
|                                | Number of staff currently working | Number of staff who left in the last 12 months | Number of staff posted in the last 12 month | Net gain (loss) | Number of staff currently working | Number of staff who left in the last 12 months | Number of staff posted in the last 12 month | Net gain (loss) | Number of staff currently working | Number of staff who left in the last 12 months | Number of staff posted in the last 12 month | Net gain (loss) |
| Overall staffing: Ghana        | 5,384                             | 679  | 1,207                                       | 528             | 1,233                             | 135  | 239   | 104             | 748                               | 43   | 57  | 14              |
|                                |                                   |  |   |                 |                                   |  |   |                 |                                   |  |   |                 |
| Obstetrician/Gynaecologist     | 3                                 | 0  | 1   | <b>1</b>        | 7                                 | 1  | 1   | <b>0</b>        | 9                                 | 0  | 1   | <b>1</b>        |
| Paediatrician                  | 1                                 | 0  | 0   | <b>0</b>        | 0                                 | 1  | 1   | <b>0</b>        | 0                                 | 0  | 0   | <b>0</b>        |
| General Practitioner           | 35                                | 3  | 8   | <b>5</b>        | 38                                | 3  | 6   | <b>3</b>        | 7                                 | 0  | 1   | <b>1</b>        |
| Medical Assistant              | 294                               | 48   | 70  | <b>22</b>       | 52                                | 6  | 11  | <b>5</b>        | 18                                | 2  | 2   | <b>0</b>        |
| Midwife                        | 983                               | 149  | 174   | <b>25</b>       | 220                               | 32   | 41  | <b>9</b>        | 291                               | 17   | 14  | <b>-3</b>       |
| Clinical Nurse                 | 617                               | 51   | 112   | <b>61</b>       | 142                               | 15   | 28  | <b>13</b>       | 33                                | 0  | 4   | <b>4</b>        |
| Health Assistant               | 819                               | 91   | 220   | <b>129</b>      | 289                               | 18   | 34  | <b>16</b>       | 311                               | 20   | 32  | <b>12</b>       |
| Community Health Officer/Nurse | 2,271                             | 301  | 558   | <b>257</b>      | 328                               | 44   | 97  | <b>53</b>       | 7                                 | 4  | 1   | <b>-3</b>       |



|                     |    |   |   |   |    |   |   |   |   |   |   |   |
|---------------------|----|---|---|---|----|---|---|---|---|---|---|---|
| Public Health Nurse | 62 | 7 | 9 | 2 | 11 | 3 | 3 | 0 | 0 | 0 | 0 | 0 |
| Anaesthesiologist   | 0  | 0 | 0 | 0 | 1  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nurse Anaesthetist  | 3  | 0 | 0 | 0 | 3  | 0 | 0 | 0 | 2 | 0 | 0 | 0 |

**Table 6.07A: Total number of selected health worker cadres who are currently working, who left and who were posted in the 12 months, by type of facility and cadre of health worker**

| Health worker cadre  | CHPS Compound                     |  |   | Net gain (loss) | Total                             |  |   | Net gain (loss) |
|----------------------|-----------------------------------|--|---|-----------------|-----------------------------------|--|---|-----------------|
|                      | Number of staff currently working | Number of staff who left in the last 12 months | Number of staff posted in the last 12 month |                 | Number of staff currently working | Number of staff who left in the last 12 months | Number of staff posted in the last 12 month |                 |
| Overall staffing     | 328                               | 86   | 126   | 40              | 26,564                            | 1,946  | 3,741                                       | 1,795           |
| Obs/Gyanae           | 0                                 | 0  | 0   | 0               | 279                               | 18   | 25  | 7               |
| Paediatrician        | 0                                 | 0  | 0   | 0               | 109                               | 9  | 8   | -1              |
| General Practitioner | 0                                 | 0  | 0   | 0               | 1,230                             | 98   | 146   | 48              |
| Medical Assistant    | 0                                 | 0  | 0   | 0               | 755                               | 96   | 133   | 37              |
| Midwife              | 57                                | 18   | 21  | 3               | 4,726                             | 433  | 589   | 156             |
| Clinical Nurse       | 4                                 | 0  | 1   | 1               | 7,567                             | 385  | 826   | 441             |
| Health Assistant     | 22                                | 7  | 6   | -1              | 4,364                             | 220  | 702   | 482             |
| Community Health     | 245                               | 60   | 98  | 38              | 3,851                             | 474  | 943   | 469             |

|                     |   |   |   |    |     |    |    |          |
|---------------------|---|---|---|----|-----|----|----|----------|
| Officer/Nurse       |   |   |   |    |     |    |    |          |
| Public Health Nurse | 0 | 1 | 0 | -1 | 256 | 23 | 31 | <b>8</b> |
| Anaesthesiologist   | 0 | 0 | 0 | 0  | 54  | 6  | 7  | 1        |
| Nurse Anaesthetist  | 0 | 0 | 0 | 0  | 455 | 30 | 39 | 9        |

**Table 6.08A Distribution of midwives in health centres and health clinics**

| Number of midwives present  | Health Centers                 |                                |     |     |    |  | Health Clinics                 |                                |    |    |    |
|---|--------------------------------|--------------------------------|-----|-----|----|--|--------------------------------|--------------------------------|----|----|----|
|   | Total number of health centers | Number of health centers with: |     |     |    |  | Total number of health clinics | Number of health clinics with: |    |    |    |
|   |                                | No Midwife                     | 1   | 2   | ≥3 |  |                                | No Midwife                     | 1  | 2  | ≥3 |
| Ghana   | 515                            | 37                             | 296 | 113 | 69 |  | 155                            | 14                             | 95 | 25 | 20 |
| Operating agency  |                                |                                |     |     |    |  |                                |                                |    |    |    |
| Government  | 466                            | 34                             | 264 | 104 | 64 |  | 77                             | 8                              | 55 | 11 | 3  |
| Private/ For profit   | 2                              | 1                              | 0   | 1   | 0  |  | 30                             | 6                              | 8  | 4  | 12 |
| Religious/ Mission  | 47                             | 2                              | 32  | 8   | 5  |  | 46                             | 0                              | 30 | 10 | 6  |
| NGO   | 0                              | -                              | -   | -   | -  |  | 2                              | 0                              | 2  | 0  | 0  |
| <i>Note: Dash (-) indicates that there are no facilities in this subgroup. Note: Facilities that did not answer are excluded (3 health centers, 6 health clinics)</i> |                                |                                |     |     |    |  |                                |                                |    |    |    |

**Table 6.09A Distribution of midwives in Maternity Homes and CHPS Compounds**

| Number of midwives present  | Maternity Homes                 |                             |    |    |    |  | CHPS Compounds                 |                                |    |   |    |
|---|---------------------------------|-----------------------------|----|----|----|--|--------------------------------|--------------------------------|----|---|----|
|   | Total number of maternity homes | Number of maternities with: |    |    |    |  | Total number of CHPS compounds | Number of CHPS compounds with: |    |   |    |
|   |                                 | No Midwife                  | 1  | 2  | ≥3 |  |                                | No Midwife                     | 1  | 2 | ≥3 |
| Ghana   | 165                             | 1                           | 91 | 51 | 21 |  | 123                            | 70                             | 50 | 2 | 1  |
| Operating agency  |                                 |                             |    |    |    |  |                                |                                |    |   |    |
| Government  | 3                               | 0                           | 0  | 1  | 1  |  | 121                            | 69                             | 49 | 2 | 1  |
| Private/ For profit   | 161                             | 1                           | 90 | 50 | 20 |  | 0                              | -                              | -  | - | -  |
| Religious/ Mission  | 1                               | 0                           | 1  | 0  | 0  |  | 2                              | 1                              | 0  | 0 | 0  |
| NGO   | 0                               | -                           | -  | -  | -  |  | 1                              | 0                              | 1  | 0 | 0  |
| <i>Note: Dash (-) indicates that there are no facilities in this subgroup. Note: Facilities that did not answer are excluded (1 Maternity Home and 16 CHPS Compounds)</i> |                                 |                             |    |    |    |  |                                |                                |    |   |    |

**Table 6.10A: Distribution of currently working General Practitioners in All facilities and in District Hospitals by operating agency**

|  | All Facilities <sup>1</sup> |                            |     |    |       |   | District hospital                  |                                    |    |    |    |
|--|-----------------------------|----------------------------|-----|----|-------|---|------------------------------------|------------------------------------|----|----|----|
|  | Total number of facilities  | Number of facilities with: |     |    |       |   | Total number of district hospitals | Number of district hospitals with: |    |    |    |
| No GP  |                             | 1                          | 2   | ≥3 | No GP | 1 |                                    | 2                                  | ≥3 |    |    |
| Number of GPs present  |                             |                            |     |    |       |   |                                    |                                    |    |    |    |
| Ghana  | 1114                        | 818                        | 120 | 61 | 115   |   | 272                                | 34                                 | 89 | 53 | 96 |
| Operating Agency   |                             |                            |     |    |       |   |                                    |                                    |    |    |    |
| Government   | 699                         | 565                        | 56  | 26 | 52    |   | 116                                | 5                                  | 49 | 25 | 37 |
| Private/ For profit  | 283                         | 173                        | 55  | 18 | 37    |   | 105                                | 24                                 | 36 | 12 | 33 |
| Religious/ Mission   | 129                         | 77                         | 9   | 17 | 26    |   | 51                                 | 5                                  | 4  | 16 | 26 |
| NGO  | 3                           | 3                          | 0   | 0  | 0     |   | 0                                  | -                                  | -  | -  | -  |
| <i>Note: Dash (-) indicates that there are no facilities in this subgroup.</i>   |                             |                            |     |    |       |   |                                    |                                    |    |    |    |
| <i>Note: Facilities that did not answer questions are excluded from analysis (154 from all facilities, 1 from district hospitals),</i> |                             |                            |     |    |       |   |                                    |                                    |    |    |    |
| <i>1. 'All facilities' includes all types of facilities.</i>   |                             |                            |     |    |       |   |                                    |                                    |    |    |    |

**Table 6.11A: Distribution of currently working General Practitioners in maternity homes and CHPS compound**

| Number of GPs present  | Maternity homes                 |                             |   |   |    | CHPS Compounds                 |                                |   |   |    |
|--|---------------------------------|-----------------------------|---|---|----|--------------------------------|--------------------------------|---|---|----|
|  | Total number of maternity homes | Number of maternities with: |   |   |    | Total number of CHPS compounds | Number of CHPS compounds with: |   |   |    |
|  |                                 | No GP                       | 1 | 2 | ≥3 |                                | No GP                          | 1 | 2 | ≥3 |
| Ghana  | 151                             | 144                         | 7 | 0 | 0  | 106                            | 105                            | 1 | 0 | 0  |
| Operating Agency   |                                 |                             |   |   |    |                                |                                |   |   |    |
| Government   | 3                               | 3                           | 0 | 0 | 0  | 104                            | 104                            | 0 | 0 | 0  |
| Private/ For profit  | 147                             | 140                         | 7 | 0 | 0  | 0                              | -                              | - | - | -  |
| Religious/ Mission   | 1                               | 1                           | 0 | 0 | 0  | 1                              | 1                              | 0 | 0 | 0  |
| NGO  | 0                               | -                           | - | - | -  | 1                              | 0                              | 1 | 0 | 0  |
| <i>Note: Dash (-) indicates that there are no facilities in this subgroup.</i>   |                                 |                             |   |   |    |                                |                                |   |   |    |
| <i>Note: Facilities that did not answer questions are excluded from analysis (14 from maternity homes, and 33 from CHPS compounds)</i> |                                 |                             |   |   |    |                                |                                |   |   |    |

**Table 6.12A: Number of Obstetrician/Gynaecologist in Hospitals by Operating Agency**

|   | <sup>1</sup> Number of Obstetrician/Gynaecologists |                    |                    |                          |
|---|--|--------------------|--------------------|--------------------------|
|   | All hospitals                                      | Teaching Hospitals | Regional Hospitals | District/Other Hospitals |
| National  | 260  | 29                 | 23                 | 208                      |
|   |  |                    |                    |                          |
| Operating agency  |  |                    |                    |                          |
| Government  | 103  | 29                 | 23                 | 51                       |
| Private/For Profit  | 137  | N/A                | N/A                | 137                      |
| Religious/Mission   | 20   | N/A                | N/A                | 20                       |
| <i>Note: There are no hospitals run by NGOs, therefore NGOs are excluded from this table.</i>   |  |                    |                    |                          |
| <sup>1</sup> <i>Total number of Obstetrician/Gynecologist in hospitals does not add up the national total (n=279) because there are 19 Ob/Gyns currently working at lower level facilities.</i> |  |                    |                    |                          |
| <i>N/A: Not applicable. Type of operating agency does not exist for the corresponding facility type.</i>  |  |                    |                    |                          |

**Table 6.13A: Percentage of Hospitals with health workers present on duty and on call during the week, by health worker cadre**

| HOSPITALS (Teaching, Regional and District) | Percent of hospitals that do deliveries (n=281) with cadre currently working | Mon-Fri daytime                  |    |          |    |       |    | Mon-Fri night |    |          |    |       |    |
|---|--|----------------------------------|----|----------|----|-------|----|---------------|----|----------|----|-------|----|
|   |  | Percent of hospitals with cadre: |    |          |    |       |    |               |    |          |    |       |    |
|   |  | On duty:                         |    | On call: |    | Total |    | On duty:      |    | On call: |    | Total |    |
|   | %  | n                                | %  | n        | %  | n     | %  | n             | %  | n        | %  | n     | %  |
| Health worker cadre                         |  |                                  |    |          |    |       |    |               |    |          |    |       |    |
| Obstetrician/Gynecologist                   | 54%  | 120                              | 43 | 20       | 7  | 140   | 50 | 42            | 15 | 92       | 33 | 134   | 48 |
| Pediatrician                                | 26%  | 54                               | 19 | 11       | 4  | 65    | 23 | 18            | 6  | 43       | 15 | 61    | 22 |
| General Practitioner                        | 89%  | 239                              | 85 | 6        | 2  | 245   | 87 | 87            | 31 | 151      | 54 | 238   | 85 |
| Medical Assistant                           | 69%  | 186                              | 66 | 5        | 2  | 191   | 68 | 74            | 26 | 78       | 28 | 152   | 54 |
| Nurse Anesthesiologist                      | 77%  | 168                              | 60 | 35       | 12 | 203   | 72 | 56            | 20 | 147      | 52 | 203   | 72 |
| Midwife                                     | 98%  | 272                              | 97 | 2        | 1  | 274   | 98 | 256           | 91 | 14       | 5  | 270   | 96 |
| Clinical Nurse                              | 92%  | 253                              | 90 | 2        | 1  | 255   | 91 | 241           | 86 | 7        | 2  | 248   | 88 |
| Public health Nurse                         | 38%  | 96                               | 34 | 2        | 1  | 98    | 35 | 11            | 4  | 12       | 4  | 23    | 8  |
| Health assistant                            | 81%  | 223                              | 79 | 0        | 0  | 223   | 79 | 216           | 77 | 3        | 1  | 219   | 78 |
| Anesthesiologist                            | 16%  | 27                               | 10 | 15       | 5  | 42    | 15 | 10            | 4  | 28       | 10 | 38    | 14 |
| Community Health Officer/Nurse              | 65%  | 175                              | 62 | 2        | 1  | 177   | 63 | 29            | 10 | 8        | 3  | 37    | 13 |

**Table 6.14A: Percentage of Hospitals with health workers present on duty and on call during during weekends, by health worker cadre**

| HOSPITALS (Teaching, Regional and District) | Percent of hospitals that do deliveries (n=281) with cadre currently working | Sat and Sun daytime              |    |          |    |       |    | Sat and Sun night                |    |          |    |       |    |   |
|---|--|----------------------------------|----|----------|----|-------|----|----------------------------------|----|----------|----|-------|----|---|
|   |  | Percent of hospitals with cadre: |    |          |    |       |    | Percent of hospitals with cadre: |    |          |    |       |    |   |
|   |  | On duty:                         |    | On call: |    | Total |    | On duty:                         |    | On call: |    | Total |    |   |
| %   | n  | %                                | n  | %        | n  | %     | n  | %                                | n  | %        | n  | %     | n  | % |
| Health worker cadre                         |  |                                  |    |          |    |       |    |                                  |    |          |    |       |    |   |
| Obstetrician/Gynecologist                   | 54%  | 65                               | 23 | 70       | 25 | 135   | 48 | 23                               | 8  | 108      | 38 | 131   | 47 |   |
| Pediatrician                                | 26%  | 31                               | 11 | 31       | 11 | 62    | 22 | 11                               | 4  | 49       | 17 | 60    | 21 |   |
| General Practitioner                        | 89%  | 160                              | 57 | 82       | 29 | 242   | 86 | 77                               | 27 | 158      | 56 | 235   | 84 |   |
| Medical Assistant                           | 69%  | 138                              | 49 | 38       | 14 | 176   | 63 | 66                               | 23 | 85       | 30 | 151   | 54 |   |
| Nurse Anesthesiologist                      | 77%  | 86                               | 31 | 117      | 42 | 203   | 72 | 45                               | 16 | 157      | 56 | 202   | 72 |   |
| Midwife                                     | 98%  | 260                              | 93 | 11       | 4  | 271   | 96 | 254                              | 90 | 15       | 5  | 269   | 96 |   |
| Clinical Nurse                              | 92%  | 244                              | 87 | 5        | 2  | 249   | 89 | 235                              | 84 | 8        | 3  | 243   | 86 |   |
| Public health Nurse                         | 38%  | 15                               | 5  | 16       | 6  | 31    | 11 | 3                                | 1  | 15       | 5  | 18    | 6  |   |
| Health assistant                            | 81%  | 218                              | 78 | 2        | 1  | 220   | 78 | 211                              | 75 | 5        | 2  | 216   | 77 |   |
| Anesthesiologist                            | 16%  | 13                               | 5  | 29       | 10 | 42    | 15 | 8                                | 3  | 30       | 11 | 38    | 14 |   |
| Community Health Officer/Nurse              | 65%  | 33                               | 12 | 24       | 9  | 57    | 20 | 16                               | 6  | 11       | 4  | 27    | 10 |   |



**Table 6.15A:** Percentage of hospitals where indicated cadre provides the EmONC signal functions and other related services, by signal function and health worker cadre (among facilities that do deliveries)

| HOSPITALS (n=281)                     | Percent of hospitals with cadre present <sup>1</sup> | Parenteral Drugs <sup>2</sup> |           |                  | Procedures <sup>2</sup>    |                                  |     |     |                                 |                  |                        |                        |         |                   |
|---------------------------------------|--|-------------------------------|-----------|------------------|----------------------------|----------------------------------|-----|-----|---------------------------------|------------------|------------------------|------------------------|---------|-------------------|
|                                       |  | Antibiotics                   | Oxytocics | Anti-convulsants | Manual removal of placenta | Removal of retained products by: |     |     | Assisted vaginal delivery with: |                  | Neonatal resuscitation | Blood transfusion for: |         | Cesarean delivery |
|                                       |  |                               |           |                  |                            | MVA                              | D&C | D&E | Vacuum extraction               | Forceps delivery |                        | Mother                 | Newborn |                   |
|                                       | %  | %                             | %         | %                | %                          | %                                | %   | %   | %                               | %                | %                      | %                      | %       | %                 |
| Health worker cadre                   |  |                               |           |                  |                            |                                  |     |     |                                 |                  |                        |                        |         |                   |
| Medical doctor (general practitioner) | 89   | 79                            | 68        | 74               | 68                         | 57                               | 62  | 61  | 46                              | 17               | 67                     | 69                     | 53      | 64                |
| Obstetrician/Gynecologist             | 54   | 44                            | 43        | 43               | 48                         | 41                               | 41  | 43  | 37                              | 23               | 42                     | 39                     | 25      | 46                |
| Pediatrician                          | 26   | 18                            | 5         | 12               | 2                          | 3                                | 2   | 2   | 2                               | 2                | 18                     | 10                     | 17      | 3                 |
| Medical assistant                     | 69   | 50                            | 22        | 45               | 4                          | 2                                | 1   | 1   | 1                               | 0                | 19                     | 30                     | 20      | 0                 |
| Midwife                               | 98   | 95                            | 96        | 94               | 74                         | 30                               | 3   | 4   | 30                              | 2                | 94                     | 79                     | 47      | 1                 |
| Clinical nurse                        | 92   | 74                            | 33        | 62               | 3                          | 1                                | 0   | 0   | 0                               | 0                | 29                     | 52                     | 32      | 0                 |
| Health assistant                      | 81   | 21                            | 8         | 17               | 2                          | 0                                | 0   | 0   | 0                               | 0                | 13                     | 12                     | 6       | 0                 |

|                                |    |    |    |    |    |   |   |   |   |   |    |    |    |   |
|--------------------------------|----|----|----|----|----|---|---|---|---|---|----|----|----|---|
| Public health nurse            | 38 | 12 | 8  | 7  | 2  | 1 | 0 | 0 | 1 | 1 | 8  | 7  | 5  | 0 |
| Community health nurse/officer | 65 | 10 | 6  | 7  | 70 | 0 | 0 | 0 | 0 | 0 | 8  | 4  | 2  | 0 |
| Anesthesiologist (MD)          | 16 | 12 | 11 | 10 | 0  | 0 | 0 | 0 | 0 | 0 | 12 | 10 | 6  | 0 |
| Nurse anesthetist              | 77 | 51 | 48 | 45 | 1  | 0 | 1 | 1 | 1 | 1 | 51 | 46 | 30 | 1 |

*1 Facilities with missing information were excluded from percentage calculation.*

*2 Facilities that did not provide answers were treated as if the service is not provided by that cadre of health worker.*

*Note: Grey shaded cells suggest practice goes against policy.*

**Table 6.16A:** Percentage of health centers/maternalities where indicated cadre provides the EmONC signal functions and other related services, by signal function and health worker cadre (among facilities that do deliveries)

| HEALTH CENTERS/MATERNITIES (n=673)    | Percent of HCs and maternalities with cadre present <sup>1</sup> | Parenteral Drugs <sup>2</sup> |           |                  | Procedures <sup>2</sup>    |                                  |     |     |                                 |                  |                        |                        |         |                   |
|---------------------------------------|--|-------------------------------|-----------|------------------|----------------------------|----------------------------------|-----|-----|---------------------------------|------------------|------------------------|------------------------|---------|-------------------|
|                                       |  | Antibiotics                   | Oxytocics | Anti-convulsants | Manual removal of placenta | Removal of retained products by: |     |     | Assisted vaginal delivery with: |                  | Neonatal resuscitation | Blood transfusion for: |         | Cesarean delivery |
|                                       |  |                               |           |                  |                            | MVA                              | D&C | D&E | Vacuum extraction               | Forceps delivery |                        | Mother                 | Newborn |                   |
|                                       | %  | %                             | %         | %                | %                          | %                                | %   | %   | %                               | %                | %                      | %                      | %       | %                 |
| Health worker cadre                   |  |                               |           |                  |                            |                                  |     |     |                                 |                  |                        |                        |         |                   |
| Medical doctor (general practitioner) | 4  | 3                             | 2         | 2                | 2                          | 1                                | 1   | 1   | 1                               | 0                | 2                      | 1                      | 1       | 0                 |
| Obstetrician/Gynecologist             | 2  | 1                             | 1         | 1                | 1                          | 1                                | 1   | 1   | 1                               | 0                | 1                      | 0                      | 0       | 0                 |
| Pediatrician                          | 0  | 0                             | 0         | 0                | 0                          | 0                                | 0   | 0   | 0                               | 0                | 0                      | 0                      | 0       | 0                 |
| Medical assistant                     | 88   | 36                            | 16        | 32               | 7                          | 1                                | 0   | 0   | 1                               | 0                | 16                     | 3                      | 2       | 0                 |
| Midwife                               | 95   | 86                            | 91        | 80               | 73                         | 14                               | 1   | 1   | 15                              | 1                | 81                     | 2                      | 1       | 0                 |
| Clinical nurse                        | 40   | 29                            | 11        | 23               | 2                          | 0                                | 0   | 0   | 0                               | 0                | 6                      | 1                      | 1       | 0                 |

|                                       |   |                               |           |                  |                            |                                  |     |                   |                                 |        |                        |                        |   |                   |   |
|---------------------------------------|---|-------------------------------|-----------|------------------|----------------------------|----------------------------------|-----|-------------------|---------------------------------|--------|------------------------|------------------------|---|-------------------|---|
| Health assistant                      | 63  | 20                            | 14        | 19               |                            | 2                                | 0   | 0                 | 0                               | 0      | 0                      | 10                     | 0 | 0                 | 0 |
| Public health nurse                   | 6   | 1                             | 1         | 1                |                            | 1                                | 0   | 0                 | 0                               | 0      | 0                      | 1                      | 0 | 0                 | 0 |
| Community health nurse/officer        | 76  | 23                            | 21        | 18               |                            | 2                                | 0   | 0                 | 0                               | 0      | 0                      | 15                     | 0 | 0                 | 0 |
| Anesthesiologist (MD)                 | 0   | 0                             | 0         | 0                |                            | 0                                | 0   | 0                 | 0                               | 0      | 0                      | 0                      | 0 | 0                 | 0 |
| Nurse anesthetist                     | 1   | 0                             | 0         | 0                |                            | 0                                | 0   | 0                 | 0                               | 0      | 0                      | 0                      | 0 | 0                 | 0 |
| HEALTH CLINICS (n=136)                | Percent of health clinics with cadre present <sup>1</sup> | Parenteral Drugs <sup>2</sup> |           |                  | Procedures <sup>2</sup>    |                                  |     |                   |                                 |        |                        |                        |   |                   |   |
|                                       |   | Antibiotics                   | Oxytocics | Anti-convulsants | Manual removal of placenta | Removal of retained products by: |     |                   | Assisted vaginal delivery with: |        | Neonatal resuscitation | Blood transfusion for: |   | Cesarean delivery |   |
|                                       |   |                               |           |                  | MVA                        | D&C                              | D&E | Vacuum extraction | Forceps delivery                | Mother |                        | Newborn                |   |                   |   |
|                                       | %   | %                             | %         | %                | %                          | %                                | %   | %                 | %                               | %      | %                      | %                      | % | %                 | % |
| Health worker cadre                   |   |                               |           |                  |                            |                                  |     |                   |                                 |        |                        |                        |   |                   |   |
| Medical doctor (general practitioner) | 17%   | 13                            | 12        | 11               |                            | 10                               | 8   | 7                 | 6                               | 4      | 0                      | 10                     | 4 | 1                 | 1 |
| Obstetrician/Gynecol                  | 4%  | 3                             | 3         | 3                |                            | 3                                | 2   | 1                 | 1                               | 1      | 1                      | 2                      | 1 | 1                 | 1 |

|   |     |    |    |    |  |    |    |   |   |    |   |    |   |   |   |
|---|-----|----|----|----|--|----|----|---|---|----|---|----|---|---|---|
| ogist   |     |    |    |    |  |    |    |   |   |    |   |    |   |   |   |
| Pediatrician  | 0%  | 0  | 0  | 0  |  | 0  | 0  | 0 | 0 | 0  | 0 | 0  | 0 | 0 | 0 |
| Medical assistant   | 29% | 21 | 15 | 18 |  | 7  | 1  | 1 | 1 | 1  | 0 | 10 | 4 | 2 | 0 |
| Midwife   | 96% | 87 | 92 | 83 |  | 76 | 16 | 4 | 4 | 13 | 2 | 84 | 7 | 4 | 1 |
| Clinical nurse  | 42% | 24 | 12 | 23 |  | 1  | 1  | 0 | 1 | 0  | 0 | 7  | 1 | 1 | 0 |
| Health assistant  | 67% | 24 | 18 | 21 |  | 2  | 0  | 0 | 0 | 0  | 0 | 10 | 0 | 0 | 0 |
| Public health nurse   | 8%  | 5  | 5  | 5  |  | 4  | 1  | 1 | 1 | 1  | 0 | 5  | 1 | 1 | 0 |
| Community health nurse/officer  | 80% | 26 | 34 | 26 |  | 4  | 1  | 0 | 0 | 1  | 0 | 19 | 0 | 0 | 0 |
| Anesthesiologist (MD)   | 1%  | 0  | 0  | 0  |  | 0  | 0  | 0 | 0 | 0  | 0 | 0  | 0 | 0 | 0 |
| Nurse anesthetist   | 1%  | 0  | 0  | 0  |  | 0  | 0  | 0 | 0 | 0  | 0 | 0  | 0 | 0 | 0 |
| <i>1 Facilities with missing information were excluded from percentage calculation.</i>   |     |    |    |    |  |    |    |   |   |    |   |    |   |   |   |
| <i>2 Facilities that did not provide answers were treated as if the service is not provided by that cadre of health worker.</i> |     |    |    |    |  |    |    |   |   |    |   |    |   |   |   |
| <i>Note: Grey shaded cells suggest practice goes against policy.</i>  |     |    |    |    |  |    |    |   |   |    |   |    |   |   |   |

**Table 6.17A: Percentage of facilities where indicated health worker provides other essential services or procedures, by facility type, service and health worker cadre (among facilities that do deliveries)**

| HOSPITALS <sup>1</sup><br>(n=281)     | Percent of hospitals with cadre present <sup>2</sup> | Normal delivery | Breech delivery | Medical abortion | Partograph management | Immediate newborn care | Focused ANC | FP counseling | Temporary FP methods | Surgical FP methods | PM TCT | Uterotonic drugs by other routes | Repair simple obstetric fistula | Provide general anesthesia | Provide regional/spinal/epidural anesthesia |
|---------------------------------------|--|-----------------|-----------------|------------------|-----------------------|------------------------|-------------|---------------|----------------------|---------------------|--------|----------------------------------|---------------------------------|----------------------------|---|
|                                       | %  | %               | %               | %                | %                     | %                      | %           | %             | %                    | %                   | %      | %                                | %                               | %                          | %   |
| Health worker cadre                   |  |                 |                 |                  |                       |                        |             |               |                      |                     |        |                                  |                                 |                            |   |
| Medical doctor (general practitioner) | 89%  | 49              | 60              | 50               | 11                    | 61                     | 18          | 34            | 14                   | 49                  | 24     | 61                               | 10                              | 12                         | 12  |
| Obstetrician/Gynecologist             | 54%  | 40              | 46              | 36               | 8                     | 42                     | 22          | 31            | 16                   | 41                  | 12     | 42                               | 26                              | 7                          | 7   |
| Pediatrician                          | 26%  | 2               | 2               | 2                | 0                     | 17                     | 0           | 2             | 1                    | 2                   | 1      | 4                                | 1                               | 1                          | 1   |
| Medical assistant                     | 69%  | 7               | 4               | 1                | 4                     | 15                     | 5           | 17            | 6                    | 0                   | 9      | 14                               | 0                               | 0                          | 1   |
| Midwife                               | 98%  | 98              | 89              | 5                | 83                    | 96                     | 75          | 83            | 52                   | 3                   | 76     | 86                               | 1                               | 1                          | 4   |

|   |                    |                 |                 |                  |                       |                   |             |               |                     |                    |        |                     |               |                 |   |
|---|--------------------|-----------------|-----------------|------------------|-----------------------|-------------------|-------------|---------------|---------------------|--------------------|--------|---------------------|---------------|-----------------|---|
| Clinical nurse  | 92%                | 12              | 2               | 0                | 4                     | 25                | 10          | 25            | 11                  | 1                  | 14     | 21                  | 0             | 1               | 1   |
| Health assistant  | 81%                | 8               | 3               | 0                | 3                     | 17                | 7           | 12            | 8                   | 0                  | 4      | 6                   | 0             | 0               | 0   |
| Public health nurse   | 38%                | 7               | 4               | 1                | 5                     | 10                | 10          | 28            | 25                  | 1                  | 20     | 6                   | 0             | 0               | 0   |
| Community health nurse/officer  | 65%                | 6               | 1               | 0                | 3                     | 11                | 17          | 52            | 49                  | 0                  | 23     | 4                   | 0             | 0               | 0   |
| Anesthesiologist (MD)   | 16%                | 0               | 0               | 0                | 0                     | 9                 | 0           | 0             | 0                   | 0                  | 0      | 6                   | 0             | 13              | 14  |
| Nurse anesthetist   | 77%                | 4               | 2               | 2                | 4                     | 40                | 1           | 5             | 2                   | 1                  | 2      | 23                  | 0             | 63              | 62  |
| <i>1. Facilities that did not provide answers were treated as if they did not provide the service by that cadre of health worker.</i> |                    |                 |                 |                  |                       |                   |             |               |                     |                    |        |                     |               |                 |   |
| <i>2. Facilities with missing information were excluded from percentage calculation.</i>  |                    |                 |                 |                  |                       |                   |             |               |                     |                    |        |                     |               |                 |   |
|   |                    |                 |                 |                  |                       |                   |             |               |                     |                    |        |                     |               |                 |   |
| HEALTH CENTERS/MATERINITIES <sup>1</sup> (n=673)  | Percent of HCs and | Normal delivery | Breech delivery | Medical abortion | Partograph management | Immediate newborn | Focused ANC | FP counseling | Temporary FP method | Surgical FP method | PM TCT | Uterotonic drugs by | Repair simple | Provide general | Provide regional/spinal/epidural anesthesia |

|   | mater<br>nities<br>with<br>cadre<br>presen<br>t <sup>2</sup> |    |    |   |    | orn<br>care |    |    | ds | ods |    | other<br>routes | obst<br>etric<br>fistul<br>a | anest<br>hesia |   |
|---|--|----|----|---|----|-------------|----|----|----|-----|----|-----------------|------------------------------|----------------|---|
|   |  | %  | %  | % | %  | %           | %  | %  | %  | %   | %  | %               | %                            | %              | % |
| Health worker<br>cadre                      |  |    |    |   |    |             |    |    |    |     |    |                 |                              |                |   |
| Medical doctor<br>(general<br>practitioner) | 4%   | 1  | 1  | 1 | 0  | 1           | 0  | 1  | 0  | 0   | 0  | 1               | 0                            | 0              | 0 |
| Obstetrician/Gy<br>necologist               | 2%   | 1  | 1  | 1 | 0  | 1           | 1  | 1  | 1  | 0   | 0  | 1               | 0                            | 0              | 0 |
| Pediatrician                                | 0%   | 0  | 0  | 0 | 0  | 0           | 0  | 0  | 0  | 0   | 0  | 0               | 0                            | 0              | 0 |
| Medical<br>assistant                        | 88%  | 16 | 7  | 1 | 6  | 19          | 7  | 15 | 7  | 0   | 9  | 10              | 0                            | 0              | 1 |
| Midwife                                     | 95%  | 93 | 78 | 2 | 68 | 93          | 84 | 89 | 77 | 2   | 72 | 46              | 1                            | 0              | 4 |
| Clinical nurse                              | 40%  | 7  | 1  | 0 | 2  | 10          | 5  | 10 | 6  | 0   | 3  | 5               | 0                            | 0              | 1 |
| Health assistant                            | 63%  | 19 | 3  | 0 | 3  | 23          | 11 | 21 | 18 | 0   | 6  | 4               | 0                            | 0              | 0 |



|   |  |                 |                 |                  |                       |                        |             |               |                      |                     |        |                                  |                                 |                            |   |
|---|--|-----------------|-----------------|------------------|-----------------------|------------------------|-------------|---------------|----------------------|---------------------|--------|----------------------------------|---------------------------------|----------------------------|---|
| Public health nurse   | 6%   | 2               | 1               | 0                | 1                     | 2                      | 2           | 4             | 4                    | 0                   | 3      | 1                                | 0                               | 0                          | 0   |
| Community health nurse/officer  | 76%  | 29              | 2               | 0                | 4                     | 35                     | 33          | 68            | 68                   | 0                   | 31     | 8                                | 0                               | 0                          | 0   |
| Anesthesiologist (MD)   | 0%   | 0               | 0               | 0                | 0                     | 0                      | 0           | 0             | 0                    | 0                   | 0      | 0                                | 0                               | 0                          | 0   |
| Nurse anesthetist   | 1%   | 0               | 0               | 0                | 0                     | 0                      | 0           | 0             | 0                    | 0                   | 0      | 0                                | 0                               | 0                          | 0   |
| <i>1. Facilities that did not provide answers were treated as if they did not provide the service by that cadre of health worker.</i> |  |                 |                 |                  |                       |                        |             |               |                      |                     |        |                                  |                                 |                            |   |
| <i>2. Facilities with missing information were excluded from percentage calculation.</i>  |  |                 |                 |                  |                       |                        |             |               |                      |                     |        |                                  |                                 |                            |   |
|   |  |                 |                 |                  |                       |                        |             |               |                      |                     |        |                                  |                                 |                            |   |
| HEALTH CLINICS <sup>1</sup> (n=136)   | Percent of health clinics with cadre present | Normal delivery | Breech delivery | Medical abortion | Partograph management | Immediate newborn care | Focused ANC | FP counseling | Temporary FP methods | Surgical FP methods | PM TCT | Uterotonic drugs by other routes | Repair simple obstetric fistula | Provide general anesthesia | Provide regional/spinal/epidural anesthesia |

|                                       | t <sup>2</sup> |    |    |   |    |    |    |    |    |   |    |    | a |   |   |
|---------------------------------------|----------------|----|----|---|----|----|----|----|----|---|----|----|---|---|---|
|                                       |                | %  | %  | % | %  | %  | %  | %  | %  | % | %  | %  | % | % | % |
| Health worker cadre                   |                |    |    |   |    |    |    |    |    |   |    |    |   |   |   |
| Medical doctor (general practitioner) | 17%            | 10 | 10 | 2 | 4  | 10 | 6  | 8  | 4  | 1 | 4  | 10 | 1 | 2 | 1 |
| Obstetrician/Gynecologist             | 4%             | 3  | 3  | 0 | 0  | 3  | 1  | 3  | 1  | 0 | 0  | 2  | 0 | 0 | 0 |
| Pediatrician                          | 0%             | 0  | 0  | 0 | 0  | 0  | 0  | 0  | 0  | 0 | 0  | 0  | 0 | 0 | 0 |
| Medical assistant                     | 29%            | 9  | 4  | 0 | 4  | 13 | 7  | 12 | 6  | 0 | 6  | 5  | 0 | 1 | 1 |
| Midwife                               | 96%            | 93 | 76 | 1 | 74 | 93 | 82 | 90 | 74 | 1 | 66 | 54 | 1 | 1 | 1 |
| Clinical nurse                        | 42%            | 7  | 1  | 0 | 2  | 11 | 4  | 7  | 7  | 0 | 3  | 6  | 0 | 1 | 0 |
| Health assistant                      | 67%            | 17 | 4  | 0 | 3  | 23 | 9  | 18 | 17 | 0 | 7  | 7  | 0 | 0 | 0 |
| Public health nurse                   | 8%             | 5  | 5  | 0 | 4  | 5  | 4  | 6  | 6  | 0 | 5  | 1  | 0 | 0 | 0 |

|   |     |    |   |   |   |    |    |    |    |   |    |    |   |   |   |
|---|-----|----|---|---|---|----|----|----|----|---|----|----|---|---|---|
| Community health nurse/officer  | 80% | 31 | 2 | 0 | 8 | 40 | 38 | 72 | 67 | 0 | 32 | 10 | 0 | 0 | 0 |
| Anesthesiologist (MD)   | 1%  | 0  | 0 | 0 | 0 | 0  | 0  | 0  | 0  | 0 | 0  | 0  | 0 | 0 | 0 |
| Nurse anesthetist   | 1%  | 0  | 0 | 0 | 0 | 1  | 0  | 0  | 0  | 0 | 0  | 0  | 0 | 0 | 0 |
| <i>1. Facilities that did not provide answers were treated as if they did not provide the service by that cadre of health worker.</i> |     |    |   |   |   |    |    |    |    |   |    |    |   |   |   |
| <i>2. Facilities with missing information were excluded from percentage calculation.</i>  |     |    |   |   |   |    |    |    |    |   |    |    |   |   |   |

**Table 7.01A: Percent distribution of health providers interviewed and mean number and range of deliveries, by health worker cadre (n=1,143)**

|  | Providers Interviewed |    | Mean number of deliveries attended in past month |     |     |
|--|-----------------------|----|--|-----|-----|
|  | n                     | %  | mean <sup>2</sup>                                | min | max |
| Health worker cadre  |                       |    |  |     |     |
| Midwife  | 986                   | 86 | 13.5   | 0   | 153 |
| Community Health Nurse/Officer   | 71                    | 6  | 6.3  | 0   | 34  |
| Health Assistant   | 35                    | 3  | 8.4  | 0   | 30  |
| Medical Assistant  | 16                    | 1  | 10.1   | 1   | 25  |
| Clinical nurse   | 9                     | 1  | 5.7  | 2   | 11  |
| TBA  | 8                     | 1  | 5.5  | 1   | 16  |
| Public Health Nurse  | 2                     | 0  | 1.0  | 0   | 3   |
| Medical Doctor (general physician)   | 2                     | 0  | 4.0  | 3   | 5   |
| Other <sup>1</sup>   | 8                     | 1  | 3.4  | 1   | 6   |
| No cadre provided  | 6                     | 1  | -  | -   | -   |
| 1. Other health worker cadres include assistant midwife, facility administrator, orderly.  |                       |    |  |     |     |
| 2. Some providers appear to have misinterpreted the question about the number of deliveries they attended last month and instead reported the number of deliveries in the facility last month. Therefore, providers who reported attending more than 90% of the average monthly deliveries at their facility and who work at a facility with more than 5 midwives were assumed to have misinterpreted the question and have were excluded from the calculation of mean number of deliveries. |                       |    |  |     |     |

**Table 7.02A: Percent distribution of health workers according to time worked in facility, by health worker cadre (n=1,119)**

|  | Total<br>(n=1,093) | Midwives<br>(n=963) | CHN/CHO<br>(n=70) | HA /<br>Clinical<br>nurse<br>(n=44) | MA/ PHN <sup>1</sup><br>(n=16) |
|--|--------------------|---------------------|-------------------|-------------------------------------|--------------------------------|
|  | %                  | %                   | %                 | %                                   | %                              |
| Less than 1 year   | 16                 | 16                  | 19                | 11                                  | 25                             |
| 1 - 3 years  | 28                 | 27                  | 47                | 25                                  | 25                             |
| >3 - 5 years   | 17                 | 16                  | 24                | 14                                  | 13                             |
| >5 - 7 years   | 10                 | 10                  | 4                 | 20                                  | 13                             |
| More than 7 years  | 29                 | 31                  | 6                 | 30                                  | 25                             |
| Note 1: Missing responses (less than 3% unless otherwise indicated) are included in the denominator to provide a conservative estimate.              |                    |                     |                   |                                     |                                |
| Note 2: CHN is community health nurse. CHO is community health officer. HA is health assistant. MA is medical assistant. PHN is public health nurse. |                    |                     |                   |                                     |                                |
| 1. Two medical assistant (11%) responses are missing and included in the denominator.  |                    |                     |                   |                                     |                                |

**Table 7.03A: Percentage of providers who know focused antenatal care practices and which pregnant women are at risk, by health worker cadre**

|   | Total<br>(n=1,119) | Midwives<br>(n=986) | CHN/CHO<br>(n=71) | HA/Clinical<br>Nurse<br>(n=44) | MA/ PHN<br>(n=18) |
|---|--------------------|---------------------|-------------------|--------------------------------|-------------------|
| Knowledge of focused antenatal care   |                    |                     |                   |                                |                   |
| Average score (out of 6)  | 2.8                | 2.9                 | 2.2               | 2.1                            | 2.4               |
| Percent providing specific response:  | %                  | %                   | %                 | %                              | %                 |
| Prevent illness and promote health  | 60                 | 61                  | 59                | 41                             | 61                |
| Detect existing illnesses and manage complications  | 58                 | 60                  | 44                | 48                             | 39                |
| Teach danger signs  | 51                 | 53                  | 30                | 45                             | 39                |
| Ensure woman has birth plan   | 47                 | 48                  | 37                | 30                             | 50                |
| Minimum of 4 consultations  | 37                 | 38                  | 32                | 25                             | 33                |
| Promote breastfeeding   | 30                 | 31                  | 23                | 20                             | 17                |
|   |                    |                     |                   |                                |                   |
| Knowledge of which pregnant women require a special care plan <sup>1</sup>  |                    |                     |                   |                                |                   |
| Average score (out of 8)  | 4.3                | 4.5                 | 3.2               | 3.6                            | 4.1               |
| Percent providing specific response:  | %                  | %                   | %                 | %                              | %                 |
| 5 or more deliveries  | 77                 | 79                  | 70                | 55                             | 56                |
| Medical conditions  | 77                 | 77                  | 69                | 73                             | 78                |
| History of severe obstetric complications   | 74                 | 77                  | 46                | 68                             | 72                |
| Previous caesarean  | 67                 | 69                  | 48                | 57                             | 50                |
| 35 years or older for first baby  | 61                 | 64                  | 38                | 43                             | 50                |
| Previous stillbirth   | 26                 | 27                  | 15                | 16                             | 33                |
| <2 or >5 years between deliveries   | 18                 | 19                  | 15                | 18                             | 11                |
| Previous neonatal death   | 18                 | 18                  | 13                | 14                             | 33                |
| Previous instrumental delivery  | 13                 | 14                  | 1                 | 14                             | 22                |
| Previous obstetric fistula repair   | 3                  | 4                   | 1                 | 5                              | 0                 |
| <i>Note 1: Missing responses (less than 3% unless otherwise indicated) are included in the denominator to provide a conservative estimate.</i>              |                    |                     |                   |                                |                   |
| <i>Note 2: CHN is community health nurse. CHO is community health officer. HA is health assistant. MA is medical assistant. PHN is public health nurse.</i> |                    |                     |                   |                                |                   |
| <i>1. One medical assistant (5.6%) response is missing and included in the denominator.</i>   |                    |                     |                   |                                |                   |

**Table 7.04A: Percentage of providers who recognize complications of abortion, how to intervene, and what to do for victims of rape, by health worker cadre**

|   | Total<br>(n=1,119) | Midwives<br>(n=986) | CHN/CHO<br>(n=71) | HA/Clinical<br>Nurse<br>(n=44) | MA/PHN<br>(n=18) |
|---|--------------------|---------------------|-------------------|--------------------------------|------------------|
| What are the immediate (within 48 hours) complications of unsafe abortion?              |                    |                     |                   |                                |                  |
| Average score (out of 4)  | 2.7                | 2.8                 | 2.2               | 1.9                            | 2.5              |
| Percent providing specific response:  | %                  | %                   | %                 | %                              | %                |
| Bleeding  | 89                 | 90                  | 87                | 80                             | 94               |
| Sepsis  | 85                 | 89                  | 56                | 50                             | 67               |
| Shock   | 51                 | 52                  | 44                | 39                             | 44               |
| Genital injuries  | 25                 | 27                  | 13                | 14                             | 22               |
| Abdominal injuries  | 22                 | 23                  | 18                | 11                             | 22               |
|   |                    |                     |                   |                                |                  |
| What do you do for a woman with an unsafe or incomplete abortion?                       |                    |                     |                   |                                |                  |
| Average score (out of 9)  | 3.9                | 4.0                 | 2.5               | 3.4                            | 3.5              |
| Percent providing specific response:  | %                  | %                   | %                 | %                              | %                |
| Refer   | 78                 | 77                  | 89                | 89                             | 89               |
| Begin IV fluids   | 68                 | 71                  | 38                | 57                             | 56               |
| Begin antibiotics   | 60                 | 63                  | 30                | 43                             | 67               |
| Assess vital signs  | 53                 | 55                  | 30                | 45                             | 44               |
| Vaginal exam  | 43                 | 45                  | 27                | 32                             | 28               |
| Assess vaginal bleeding   | 39                 | 41                  | 21                | 25                             | 33               |
| Counsel   | 25                 | 26                  | 13                | 30                             | 28               |
| Manual vacuum aspiration  | 14                 | 15                  | 0                 | 7                              | 6                |
| Dilation with curettage or evacuation   | 8                  | 9                   | 0                 | 9                              | 0                |
|   |                    |                     |                   |                                |                  |
| What information do you give to women after unsafe or incomplete abortion? <sup>1</sup> |                    |                     |                   |                                |                  |
| Average score (out of 6)  | 2.9                | 3.0                 | 2.3               | 2.8                            | 3.1              |
| Percent providing specific response:  | %                  | %                   | %                 | %                              | %                |
| Family planning counselling and services  | 90                 | 91                  | 85                | 82                             | 72               |
| Consequences of unsafe abortion   | 65                 | 64                  | 62                | 77                             | 89               |
| Referral for contraception  | 61                 | 63                  | 41                | 50                             | 56               |

|   |     |     |     |     |     |
|---|-----|-----|-----|-----|-----|
| Prevention of reproductive tract infection/ HIV   | 37  | 37  | 27  | 27  | 61  |
| Return to fertility   | 27  | 28  | 14  | 30  | 28  |
| Social support  | 13  | 14  | 4   | 9   | 6   |
|   |     |     |     |     |     |
| What do you do for the victim of sexual violence? <sup>2</sup>  |     |     |     |     |     |
| Average score (out of 8)  | 2.7 | 2.7 | 2.2 | 2.0 | 1.9 |
| Percent providing specific response:  | %   | %   | %   | %   | %   |
| Refer   | 66  | 66  | 70  | 73  | 56  |
| Counsel for pre- and post-HIV testing   | 47  | 49  | 42  | 30  | 33  |
| Encourage her to report to police   | 36  | 37  | 32  | 39  | 28  |
| Provide emergency contraception   | 32  | 33  | 31  | 11  | 22  |
| Request urine, vaginal smear, and/ or blood exams   | 30  | 32  | 11  | 25  | 28  |
| Counsel for pregnancy prevention  | 26  | 28  | 18  | 9   | 6   |
| Help her complete the police report   | 18  | 19  | 11  | 14  | 11  |
| Provide post-exposure prophylaxis for HIV   | 12  | 13  | 0   | 2   | 11  |
| <i>Note 1: Missing responses (less than 3% unless otherwise indicated) are included in the denominator to provide a conservative estimate.</i>              |     |     |     |     |     |
| <i>Note 2: CHN is community health nurse. CHO is community health officer. HA is health assistant. MA is medical assistant. PHN is public health nurse.</i> |     |     |     |     |     |
| <i>1. One medical assistant (5.6%) response is missing and is included in the denominator.</i>  |     |     |     |     |     |
| <i>2. Two Health Assistant (4.6%) responses are missing and are included in the denominator.</i>  |     |     |     |     |     |

**Table 7.05A: Percentage of providers who know steps of immediate newborn care, signs of newborn complications and the appropriate responses, by health worker cadre**

|  | Total<br>(n=1,119) | Midwives<br>(n=986) | CHN/CHO<br>(n=71) | HA/Clinical Nurse<br>(n=44) | MA/PHN<br>(n=18) |
|--|--------------------|---------------------|-------------------|-----------------------------|------------------|
| The last time you delivered a baby, what immediate care did you give the newborn? <sup>1</sup> |                    |                     |                   |                             |                  |
| Average score (out of 11)  | 6.3                | 6.4                 | 4.8               | 5.8                         | 6.0              |
| Percent providing specific response:   | %                  | %                   | %                 | %                           | %                |
| Clean the mouth, face and nose   | 81                 | 82                  | 65                | 84                          | 78               |
| Ensure baby is kept warm (skin to skin)  | 75                 | 77                  | 48                | 70                          | 67               |
| Ensure the baby is dry   | 72                 | 74                  | 51                | 61                          | 61               |
| Care for the umbilical cord  | 71                 | 71                  | 72                | 77                          | 78               |
| Initiate breastfeeding within first 30 minutes   | 66                 | 68                  | 55                | 52                          | 67               |
| Ensure the baby is breathing   | 58                 | 60                  | 34                | 55                          | 50               |
| Clean the baby's mouth before the shoulder comes out   | 58                 | 59                  | 44                | 39                          | 67               |
| Weigh the baby   | 54                 | 55                  | 48                | 52                          | 61               |
| Observe for colour   | 47                 | 49                  | 32                | 39                          | 33               |
| Evaluate/examine baby within first hour  | 32                 | 33                  | 20                | 27                          | 17               |
| Provide prophylaxis for eyes   | 16                 | 16                  | 8                 | 18                          | 22               |
|  |                    |                     |                   |                             |                  |
| Signs & symptoms of newborn infection <sup>2</sup>   |                    |                     |                   |                             |                  |
| Average score (out of 7)   | 3.3                | 3.4                 | 2.2               | 2.5                         | 3.3              |
| Percent providing specific response:   | %                  | %                   | %                 | %                           | %                |
| Hypothermia or hyperthermia  | 73                 | 77                  | 41                | 43                          | 83               |
| Poor or no breastfeeding   | 71                 | 74                  | 56                | 34                          | 56               |
| Restlessness or irritability   | 47                 | 49                  | 23                | 32                          | 44               |
| Deep jaundice  | 42                 | 42                  | 38                | 41                          | 44               |
| Difficulty or fast breathing   | 41                 | 41                  | 31                | 50                          | 44               |
| Less movement (poor muscle tone)   | 40                 | 41                  | 27                | 41                          | 39               |
| Severe abdominal distension  | 17                 | 18                  | 8                 | 11                          | 17               |
|  |                    |                     |                   |                             |                  |
| Care for the infected newborn  |                    |                     |                   |                             |                  |
| Average score (out of 5)   | 2.1                | 2.2                 | 1.6               | 1.8                         | 1.8              |
| Percent providing specific response:   | %                  | %                   | %                 | %                           | %                |
| Refer  | 76                 | 76                  | 79                | 75                          | 50               |
| Begin antibiotics  | 56                 | 57                  | 35                | 50                          | 78               |
| Continue to breastfeed or give breast milk   | 40                 | 42                  | 28                | 23                          | 22               |



|   |     |     |     |     |     |
|---|-----|-----|-----|-----|-----|
| Explain the situation to the mother or caregiver  | 29  | 31  | 18  | 11  | 17  |
| Keep airways open   | 13  | 13  | 4   | 16  | 11  |
| Care for the low birth weight newborn   |     |     |     |     |     |
| Average score (out of 5)  | 2.9 | 3.0 | 2.4 | 2.3 | 2.7 |
| Percent providing specific response:  | %   | %   | %   | %   | %   |
| Make sure the baby is warm (skin to skin)   | 92  | 93  | 89  | 82  | 89  |
| Provide extra support to mother to establish breastfeeding  | 70  | 72  | 54  | 57  | 78  |
| Monitor ability to breastfeed   | 66  | 69  | 48  | 50  | 44  |
| Ensure infection prevention   | 37  | 38  | 37  | 16  | 33  |
| Monitor the baby for first 24 hours   | 24  | 25  | 8   | 27  | 22  |
| <i>Note 1: Missing responses (less than 3% unless otherwise indicated) are included in the denominator to provide a conservative estimate.</i>              |     |     |     |     |     |
| <i>Note 2: CHN is community health nurse. CHO is community health officer. HA is health assistant. MA is medical assistant. PHN is public health nurse.</i> |     |     |     |     |     |
| <i>1. Three health assistant responses missing (6.8%), and included in the denominator</i>  |     |     |     |     |     |
| <i>2. One medical assistant response is missing (5.6%) and included in the denominator.</i>   |     |     |     |     |     |

**Table 7.06A: Percentage and number of providers who reported training in various services, and percentage of those trained and untrained who provided the service in the past 3 months, by health worker cadre**

|  | Total (n=1,119) |        |                            |                   | Midwives (n=986) |        |                            |                   |
|--|-----------------|--------|----------------------------|-------------------|------------------|--------|----------------------------|-------------------|
|  | Trained         |        | Provided in past 3 months* |                   | Trained          |        | Provided in past 3 months* |                   |
|  | %               | Number | Among trained              | Among not trained | %                | Number | Among trained              | Among not trained |
|  | %               | Number | %                          | %                 | %                | Number | %                          | %                 |
| Provide focused antenatal care                 | 78              | 869    | 90                         | 32                | 82               | 808    | 90                         | 31                |
| Use of partograph                              | 87              | 969    | 82                         | 5                 | 93               | 921    | 84                         | 8                 |
| Active management of the third stage of labour | 94              | 1051   | 98                         | 37                | 98               | 970    | 98                         | 40                |
| Manually remove placenta                       | 69              | 772    | 55                         | 12                | 75               | 743    | 55                         | 14                |
| Set up IV fluids                               | 95              | 1059   | 95                         | 32                | 99               | 973    | 95                         | 62                |
| Check for anaemia                              | 90              | 1004   | 93                         | 24                | 92               | 903    | 93                         | 23                |
| Start blood transfusion                        | 51              | 572    | 39                         | 2                 | 55               | 546    | 40                         | 2                 |
| Administer IM or IV magnesium sulphate         | 71              | 792    | 33                         | 2                 | 78               | 769    | 33                         | 2                 |
| Bimanual uterine compression of uterus         | 62              | 694    | 33                         | 3                 | 68               | 674    | 33                         | 3                 |
| Suture an episiotomy                           | 92              | 1024   | 81                         | 19                | 97               | 99     | 81                         | 30                |
| Suture vaginal lacerations                     | 85              | 954    | 67                         | 11                | 93               | 914    | 67                         | 11                |
| Suture cervical lacerations                    | 30              | 339    | 27                         | 1                 | 34               | 331    | 27                         | 1                 |
| Use vacuum extractor                           | 30              | 337    | 23                         | 1                 | 33               | 326    | 24                         | 1                 |
| Use obstetric forceps                          | 4               | 43     | 21                         | 0                 | 4                | 43     | 21                         | 0                 |
| Perform manual vacuum aspiration (MVA)         | 25              | 283    | 30                         | 0                 | 28               | 276    | 30                         | 0                 |
| Perform dilation and curettage (D&C)           | 3               | 38     | 42                         | 1                 | 4                | 37     | 43                         | 1                 |
| Administer antiretrovirals for                 | 54              | 602    | 52                         | 3                 | 58               | 569    | 51                         | 3                 |

|   |    |     |    |    |    |     |    |    |  |
|---|----|-----|----|----|----|-----|----|----|--|
| PMTCT   |    |     |    |    |    |     |    |    |  |
| Manage severe malaria in pregnancy  | 72 | 805 | 69 | 5  | 75 | 744 | 69 | 4  |  |
| Counsel women about FP and contraception  | 89 | 998 | 91 | 25 | 91 | 893 | 91 | 22 |  |
| Resuscitate an adult  | 45 | 503 | 35 | 4  | 48 | 470 | 36 | 4  |  |
| Resuscitate a newborn with bag and mask   | 88 | 990 | 71 | 10 | 95 | 933 | 72 | 13 |  |
| <i>Note: Missing responses (less than 5% unless otherwise indicated) are included in the denominator to provide a conservative estimate.</i>                            |    |     |    |    |    |     |    |    |  |
| <i>*If a provider's response to training is missing, they are not counted in determining the percentage that provided services among those trained and not trained.</i> |    |     |    |    |    |     |    |    |  |

**Table 7.07A: Percentage and number of providers who reported training in various services, and percentage of those trained and untrained who provided the service in the past 3 months, by health worker cadre**

|  | Community Health Nurse/Community Health Officer (n=71) |                            |                   | Health Assistant/Clinical Nurse (n=44) |                            |                   | Medical Assistant/Public Health Nurse (n=18) |                            |                   |
|--|--|----------------------------|-------------------|--|----------------------------|-------------------|--|----------------------------|-------------------|
|  | Trained  | Provided in past 3 months* |                   | Trained                                | Provided in past 3 months* |                   | Trained                                      | Provided in past 3 months* |                   |
|  |  | Among trained              | Among not trained |  | Among trained              | Among not trained |  | Among trained              | Among not trained |
|  | %  | %                          | %                 | %                                      | %                          | %                 | %  | %                          | %                 |
| Provide focused antenatal care                 | 58   | 88                         | 47                | 20                                     | 100                        | 26                | 61   | 100                        | 29                |
| Use of partograph                              | 28   | 45                         | 0                 | 36                                     | 44                         | 7                 | 67   | 50                         | 0                 |
| Active management of the third stage of labour | 56   | 90                         | 39                | 57                                     | 96                         | 37                | 89   | 88                         | 0                 |
| Manually remove placenta                       | 10   | 71                         | 0                 | 30                                     | 46                         | 19                | 50   | 78                         | 0                 |
| Set up IV fluids                               | 52   | 86                         | 21                | 73                                     | 94                         | 33                | 94   | 94                         | 0                 |
| Check for anaemia                              | 80   | 89                         | 21                | 61                                     | 85                         | 29                | 94   | 100                        | 0                 |
| Start blood transfusion                        | 4  | 0                          | 0                 | 32                                     | 21                         | 3                 | 50   | 22                         | 0                 |

|  |    |    |    |    |    |    |    |    |    |
|--|----|----|----|----|----|----|----|----|----|
| Administer IM or IV magnesium sulphate   | 7  | 40 | 0  | 16 | 43 | 0  | 61 | 27 | 0  |
| Bimanual uterine compression of uterus   | 13 | 33 | 0  | 9  | 75 | 5  | 39 | 29 | 0  |
| Suture an episiotomy                     | 23 | 63 | 11 | 43 | 63 | 32 | 78 | 71 | 25 |
| Suture vaginal lacerations               | 15 | 64 | 7  | 36 | 75 | 21 | 72 | 69 | 0  |
| Suture cervical lacerations              | 3  | 0  | 0  | 0  | -- | 0  | 33 | 17 | 0  |
| Use vacuum extractor                     | 6  | 0  | 0  | 9  | 25 | 0  | 17 | 0  | 7  |
| Use obstetric forceps                    | 0  | 0  | 0  | 0  | 0  | 5  | 0  | 0  | 0  |
| Perform manual vacuum aspiration (MVA)   | 1  | 0  | 0  | 7  | 33 | 0  | 17 | 33 | 0  |
| Perform dilation and curettage (D&C)     | 0  | -- | 0  | 0  | -- | 0  | 6  | 0  | 0  |
| Administer antiretrovirals for PMTCT     | 30 | 48 | 2  | 9  | 50 | 3  | 44 | 63 | 0  |
| Manage severe malaria in pregnancy       | 38 | 56 | 0  | 48 | 86 | 18 | 72 | 92 | 0  |
| Counsel women about FP and contraception | 94 | 94 | 25 | 50 | 95 | 41 | 89 | 94 | 0  |
| Resuscitate an adult                     | 17 | 17 | 0  | 32 | 14 | 0  | 39 | 29 | 0  |
| Resuscitate a newborn with bag and mask  | 37 | 50 | 4  | 41 | 56 | 15 | 72 | 62 | 0  |

*Note: Missing responses (less than 5% unless otherwise indicated) are included in the denominator to provide a conservative estimate.*

*\*If a provider's response to training is missing, they are not counted in determining the percentage that provided services among those trained and not trained.*

**Table 7.08A: Place of training, diagnosis and management of birth asphyxia, among those with either training or experience with neonatal resuscitation, by health worker cadre**

|  | Total<br>(n=1,003) | Midwives<br>(n=940) | CHN/CHO<br>(n=71) | HA/Clinical<br>Nurse<br>(n=44) | MA/PHN<br>(n=18) |
|--|--------------------|---------------------|-------------------|--------------------------------|------------------|
| Where training in newborn resuscitation took place | %                  | %                   | %                 | %                              | %                |
| In-Service   | 43                 | 43                  | 39                | 41                             | 46               |
| Pre-service  | 13                 | 12                  | 46                | 27                             | 23               |
| Both   | 42                 | 44                  | 11                | 9                              | 31               |
| Other*   | 1                  | 0                   | 4                 | 14                             | 0                |
| Missing  | 1                  | 1                   | 0                 | 9                              | 0                |
| Total  | 100                | 100                 | 100               | 100                            | 100              |
| How to diagnose birth asphyxia                     |                    |                     |                   |                                |                  |
| Average score (out of 4)                           | 2.8                | 2.9                 | 1.8               | 1.8                            | 3.0              |
| Percent providing specific responses:              | %                  | %                   | %                 | %                              | %                |
| Central cyanosis (blue tongue)                     | 92                 | 94                  | 64                | 64                             | 100              |
| Depressed breathing                                | 77                 | 78                  | 57                | 59                             | 85               |
| Floppiness   | 63                 | 64                  | 43                | 41                             | 85               |
| Heart rate < 100 BPM                               | 49                 | 51                  | 14                | 18                             | 31               |
| Preliminary steps of neonatal resuscitation        |                    |                     |                   |                                |                  |
| Average score (out of 7)                           | 3.9                | 3.9                 | 2.4               | 2.7                            | 3.4              |
| Percent providing specific responses:              | %                  | %                   | %                 | %                              | %                |
| Call for help                                      | 15                 | 15                  | 11                | 9                              | 0                |
| Explain baby's condition to mother                 | 19                 | 19                  | 21                | 18                             | 15               |
| Place newborn face up                              | 54                 | 55                  | 25                | 36                             | 46               |
| Wrap baby, except for face & upper chest           | 68                 | 69                  | 29                | 41                             | 77               |
| Position baby's head so neck is extended           | 67                 | 69                  | 29                | 36                             | 46               |
| Suction mouth then nose                            | 85                 | 86                  | 68                | 64                             | 77               |
| Start ventilation using bag & mask                 | 80                 | 81                  | 57                | 64                             | 77               |
| Percent providing responses in sequential order    | 13                 | 14                  | 4                 | 5                              | 8                |
| If resuscitating with bag & mask, what do you do?  |                    |                     |                   |                                |                  |
| Average score (out of 5)                           | 2.9                | 2.9                 | 1.9               | 1.9                            | 3.0              |
| Percent providing specific responses:              | %                  | %                   | %                 | %                              | %                |
| Cover baby's chin, mouth & nose with mask          | 84                 | 85                  | 71                | 68                             | 92               |
| Ventilate 1 or 2 times                             | 69                 | 70                  | 50                | 36                             | 69               |
| Pause to determine whether                         | 58                 | 58                  | 36                | 50                             | 69               |

|   |     |     |     |     |     |
|---|-----|-----|-----|-----|-----|
| breathing is spontaneous  |     |     |     |     |     |
| Ensure seal   | 54  | 56  | 21  | 23  | 38  |
| Ventilate 40 times per min for 1 min  | 21  | 21  | 11  | 14  | 31  |
|   |     |     |     |     |     |
| If baby is breathing and no respiratory difficulty, what do you do?   |     |     |     |     |     |
| Average score (out of 3)  | 2.2 | 2.2 | 1.8 | 1.8 | 2.2 |
| Percent providing specific responses:   | %   | %   | %   | %   | %   |
| Keep baby warm  | 89  | 89  | 79  | 73  | 92  |
| Immediate breastfeeding   | 75  | 75  | 82  | 55  | 69  |
| Continue monitoring baby  | 53  | 54  | 21  | 50  | 62  |
|   |     |     |     |     |     |
| If baby does not begin to breathe, or if breathing is < 30 per minute, what do you do?  |     |     |     |     |     |
| Average score (out of 6)  | 2.3 | 2.4 | 1.6 | 1.5 | 2.5 |
| Percent providing specific responses:   | %   | %   | %   | %   | %   |
| Refer the newborn   | 73  | 72  | 89  | 68  | 77  |
| Continue to ventilate   | 59  | 60  | 29  | 36  | 77  |
| Administer oxygen if needed   | 48  | 50  | 11  | 18  | 38  |
| Explain to mother what is happening   | 24  | 24  | 18  | 18  | 15  |
| Assess need for special care  | 18  | 19  | 7   | 0   | 31  |
| Intubate per adrenal resuscitation guidelines   | 12  | 12  | 7   | 5   | 8   |
| <i>Note 1: Missing responses (less than 4% unless otherwise indicated) are included in the denominator to provide a conservative estimate.</i>              |     |     |     |     |     |
| <i>Note 2: CHN is community health nurse. CHO is community health officer. HA is health assistant. MA is medical assistant. PHN is public health nurse.</i> |     |     |     |     |     |
| <i>* Other places of training include observation, at a conference, by private midwives association, or not trained.</i>                                    |     |     |     |     |     |
| <i>1. Two Health Assistant (9.1%) responses are missing and included in the denominator.</i>  |     |     |     |     |     |
| <i>2. One Medical Assistant (7.7%) response is missing and included in the denominator.</i>   |     |     |     |     |     |
| <i>3. Three Health Assistant (13.6%) responses are missing and included in the denominator.</i>   |     |     |     |     |     |

**Table 8.01A: Percentage of facilities according to mechanisms for ordering drugs, among facilities with a pharmacy**

|  | Teaching Hosp | Regional Hosp | District Hosp | Health Centre | Health Clinic | Maternity Home | CHPS Compound | Total    |
|--|---------------|---------------|---------------|---------------|---------------|----------------|---------------|----------|
|  | %             | %             | %             | %             | %             | %              | %             |          |
| <i>Among facilities with a pharmacy/supply of medicine</i> | (n=3)         | (n=9)         | (n=272)       | (n=517)       | (n=158)       | (n=160)        | (n=138)       | (n=1257) |
| <b>In labour and delivery</b>                              |               |               |               |               |               |                |               |          |
| Daily  | 0             | 0             | 13            | 7             | 7             | 20             | 3             | 10       |
| Order same time each week/month/quarter                    | 33            | 44            | 31            | 41            | 33            | 27             | 38            | 35       |
| Order whenever stocks reach re-order level                 | 33            | 44            | 43            | 37            | 45            | 39             | 38            | 40       |
| Re-order when we run out                                   | 33            | 0             | 6             | 11            | 10            | 10             | 20            | 10       |
| Never order drugs(shipment come/kit arrive)                | 0             | 0             | 0             | 0             | 0             | 0              | 0             | 0        |
| Medicine ordered on patient-by-patient basis               | 0             | 11            | 6             | 4             | 4             | 4              | 1             | 5        |
| <b>In the post-natal ward</b>                              |               |               |               |               |               |                |               |          |
| Daily  | 33            | 22            | 21            | 10            | 9             | 18             | 6             | 14       |
| Order same time each week/month/quarter                    | 0             | 33            | 24            | 37            | 29            | 23             | 35            | 31       |
| Order whenever stocks reach re-order level                 | 33            | 33            | 28            | 33            | 42            | 38             | 35            | 34       |
| re-order when we run out                                   | 0             | 0             | 5             | 11            | 10            | 10             | 22            | 10       |
| never order drugs(shipment come/kit arrive)                | 0             | 0             | 0             | 1             | 0             | 0              | 0             | 0        |
| Medicine ordered on patient-by-patient basis               | 33            | 11            | 19            | 8             | 8             | 10             | 1             | 10       |
| other(specify)   | 0             | 0             | 0             | 0             | 0             | 0              | 0             | 0        |

**Table 8.02A: Percentage of reporting most common cause of delay in the delivery of supplies in hospitals and health centres, by operating agency (among facilities with a pharmacy/supply of drugs).**

| Most common cause of delay  | Teaching Hospitals | Regional Hospitals | District Hospitals |                              |                           | Health Centres     |                            |                           |
|---|--------------------|--------------------|--------------------|------------------------------|---------------------------|--------------------|----------------------------|---------------------------|
|   | Government (n=3)   | Government (n=9)   | Government (n=117) | Private (for profit) (n=103) | Religious, Mission (n=51) | Government (n=466) | Private (for profit) (n=2) | Religious, Mission (n=47) |
|   | %                  | %                  | %                  | %                            | %                         | %                  | %                          | %                         |
| Never experienced a delay   | 100                | 33                 | 32                 | 63                           | 25                        | 40                 | 50                         | 45                        |
| Inadequate transport  | 0                  | 0                  | 15                 | 6                            | 14                        | 18                 | 0                          | 21                        |
| Administrative difficulties   | 0                  | 11                 | 21                 | 14                           | 8                         | 14                 | 0                          | 2                         |
| Financial problems  | 0                  | 22                 | 14                 | 8                            | 31                        | 9                  | 0                          | 19                        |
| Insufficient fuel   | 0                  | 0                  | 0                  | 0                            | 0                         | 0                  | 0                          | 0                         |
| Insufficient staff  | 0                  | 0                  | 0                  | 0                            | 0                         | 1                  | 0                          | 0                         |
| Stock out at the central store  | 0                  | 33                 | 19                 | 10                           | 22                        | 18                 | 0                          | 13                        |
| Other   | 0                  | 0                  | 0                  | 0                            | 0                         | 0                  | 50                         | 0                         |
| <i>NOTE: Four facilities with a pharmacy/supply of medicine did not answer question about delays are excluded from table.</i> |                    |                    |                    |                              |                           |                    |                            |                           |



**Table 8.03A: Percentage of reporting most common cause of delay in the delivery of supplies health clinics, maternity homes and CHPS compounds by operating agency (among facilities with a pharmacy/supply of drugs).**

|                                | Health Clinics    |                             |                           |           | Maternity Homes  |                              |                          | CHPS Compounds     |          |                          |
|--------------------------------|-------------------|-----------------------------|---------------------------|-----------|------------------|------------------------------|--------------------------|--------------------|----------|--------------------------|
|                                | Government (n=76) | Private (for profit) (n=31) | Religious, Mission (n=48) | NGO (n=2) | Government (n=3) | Private (for profit) (n=156) | Religious, Mission (n=1) | Government (n=135) | NGO(n=1) | Religious, Mission (n=2) |
|                                | %                 | %                           | %                         | %         | %                | %                            | %                        | %                  | %        | %                        |
| Never experienced a delay      | 45                | 68                          | 100                       | 56        | 67               | 84                           | 100                      | 44                 | 100      | 50                       |
| Inadequate transport           | 14                | 10                          | 0                         | 8         | 0                | 3                            | 0                        | 14                 | 0        | 0                        |
| Administrative difficulties    | 11                | 6                           | 0                         | 4         | 0                | 3                            | 0                        | 11                 | 0        | 50                       |
| Financial problems             | 3                 | 13                          | 0                         | 27        | 0                | 9                            | 0                        | 11                 | 0        | 0                        |
| Insufficient fuel              | 0                 | 0                           | 0                         | 0         | 0                | 0                            | 0                        | 0                  | 0        | 0                        |
| Insufficient staff             | 4                 | 0                           | 0                         | 0         | 0                | 1                            | 0                        | 1                  | 0        | 0                        |
| Stock out at the central store | 22                | 3                           | 0                         | 2         | 33               | 1                            | 0                        | 19                 | 0        | 0                        |
| Other                          | 1                 | 0                           | 0                         | 2         | 0                | 0                            | 0                        | 0                  | 0        | 0                        |

**Table 8.04A: Percentage of facilities reporting on pharmacy-related items, by type of facility (among facilities with a pharmacy/supply of drugs).**

|   | Teaching Hospitals | Regional Hospitals | District (Other) Hospital | Health Centres | Health Clinics | Maternity Homes | CHPS Compound | Total    |
|---|--------------------|--------------------|---------------------------|----------------|----------------|-----------------|---------------|----------|
|   | (n=3)              | (n=9)              | (n=272)                   | (n=517)        | (n=158)        | (n=160)         | (n=138)       | (n=1257) |
|   | %                  | %                  | %                         | %              | %              | %               | %             | %        |
| Pharmacy/Dispensary accessible 24 hours a day   | 100                | 100                | 83                        | 88             | 82             | 94              | 90            | 87       |
| Use 'first-expire-first-out' system for supply management   | 100                | 100                | 98                        | 100            | 99             | 97              | 97            | 98       |
| Have mechanism to ensure that expired drugs are not distributed   | 100                | 89                 | 99                        | 97             | 96             | 95              | 98            | 97       |
| Medicines are protected from moisture, heat or infestation.   | 100                | 100                | 97                        | 90             | 86             | 86              | 76            | 89       |
| Medicines that require refrigeration are stored in a functional refrigerator  | 100                | 100                | 99                        | 88             | 83             | 86              | 57            | 86       |
| Facility has at least one functioning electric/gas refrigerator   | 100                | 100                | 99                        | 76             | 75             | 87              | 26            | 77       |
| Facility has at least one functioning gas (liquid/compressed) refrigerator  | 0                  | 11                 | 6                         | 12             | 15             | 5               | 19            | 11       |
| Facility has at least one functioning solar refrigerator  | 0                  | 11                 | 2                         | 12             | 8              | 1               | 24            | 9        |
| <i>Note: Facilities that did not reply are excluded from percentage calculation. Missing values &lt;3% of any subgroup.</i> |                    |                    |                           |                |                |                 |               |          |

**Table 8.05A: Percentage of facilities reporting on stock-outs of ergometrine, ketamine and atropine, oxytocin and magnesium sulphate, by type of facility (among facilities with pharmacy/supply of drugs).**

|  | Teaching Hospitals | Regional Hospitals | District Hospital | Health Centres | Health Clinics | Maternity Homes | CHPS Compound | Total    |
|--|--------------------|--------------------|-------------------|----------------|----------------|-----------------|---------------|----------|
|  | (n=3)              | (n=9)              | (n=271)           | (n=515)        | (n=157)        | (n=160)         | (n=136)       | (n=1251) |
|  | %                  | %                  | %                 | %              | %              | %               | %             | %        |
| Ergometrine (injection) stock outs in last 6 months? | 0                  | 0                  | 9                 | 11             | 11             | 13              | 4             | 10       |
| <i>Among those with a stock out:</i>                 |                    |                    |                   |                |                |                 |               |          |
| Currently out of stock                               | 0                  | 0                  | 21                | 22             | 18             | 29              | 0             | 21       |
| Within last month                                    | 0                  | 0                  | 33                | 16             | 24             | 12              | 0             | 19       |
| Within 3 months                                      | 0                  | 0                  | 21                | 28             | 29             | 6               | 40            | 24       |
| Within 6 months                                      | 0                  | 0                  | 25                | 34             | 29             | 53              | 60            | 35       |
| Ketamine stock outs in last 6 months?                | 0                  | 0                  | 6                 | 2              | 2              | 2               | 0             | 2        |
| <i>Among those with a stock out:</i>                 |                    |                    |                   |                |                |                 |               |          |
| Currently out of stock                               | 0                  | 0                  | 31                | 36             | 100            | 50              | 0             | 41       |
| Within last month                                    | 0                  | 0                  | 6                 | 9              | 0              | 0               | 0             | 6        |
| Within 3 months                                      | 0                  | 0                  | 25                | 9              | 0              | 25              | 0             | 18       |
| Within 6 months                                      | 0                  | 0                  | 38                | 45             | 0              | 25              | 0             | 35       |
| Atropine stock outs in last 6 months?                | 0                  | 0                  | 5                 | 1              | 3              | 1               | 0             | 2        |
| <i>Among those with a stock out:</i>                 |                    |                    |                   |                |                |                 |               |          |
| Currently out of stock                               | 0                  | 0                  | 23                | 29             | 75             | 67              | 0             | 37       |
| Within last month                                    | 0                  | 0                  | 8                 | 0              | 25             | 0               | 0             | 7        |
| Within 3 months                                      | 0                  | 0                  | 15                | 29             | 0              | 0               | 0             | 15       |
| Within 6 months                                      | 0                  | 0                  | 54                | 43             | 0              | 33              | 0             | 41       |
| Oxytocin stock outs in last 6 months?                | 0                  | 22                 | 3                 | 5              | 4              | 2               | 6             | 4        |

|  |   |    |    |    |    |    |    |    |
|--|---|----|----|----|----|----|----|----|
| <i>Among those with a stock out:</i>                       |   |    |    |    |    |    |    |    |
| Currently out of stock                                     | 0 | 50 | 10 | 22 | 17 | 33 | 29 | 22 |
| Within last month  | 0 | 0  | 60 | 30 | 17 | 33 | 14 | 31 |
| Within 3 months  | 0 | 50 | 10 | 26 | 33 | 0  | 29 | 24 |
| Within 6 months  | 0 | 0  | 20 | 22 | 33 | 0  | 29 | 22 |
|  |   |    |    |    |    |    |    |    |
| Magnesium sulfate (injection) stock outs in last 6 months? | 0 | 22 | 10 | 11 | 3  | 10 | 4  | 9  |
| <i>Among those with a stock out:</i>                       |   |    |    |    |    |    |    |    |
| Currently out of stock                                     | 0 | 50 | 21 | 35 | 67 | 63 | 0  | 35 |
| Within last month  | 0 | 0  | 21 | 12 | 0  | 13 | 20 | 14 |
| Within 3 months  | 0 | 0  | 32 | 13 | 0  | 6  | 20 | 17 |
| Within 6 months  | 0 | 50 | 25 | 40 | 33 | 19 | 60 | 34 |

**Table 8.06A: Percentage of facilities with drugs related to the signal functions and emergencies, by type of facility (among facilities with pharmacy/supply of drugs)**

|                                    | Teaching Hospital | Regional Hospital | District Hospital | Health Centre | Health Clinic | Maternity Home | CHPS Compound | Total     |
|------------------------------------|-------------------|-------------------|-------------------|---------------|---------------|----------------|---------------|-----------|
|                                    | (n=3)             | (n=9)             | (n=272)           | (n=517)       | (n=158)       | (n=160)        | (n=138)       | (n=1257)  |
|                                    | %                 | %                 | %                 | %             | %             | %              | %             | %         |
| <b>Any Antibiotics?</b>            | <b>100</b>        | <b>100</b>        | <b>100</b>        | <b>100</b>    | <b>99</b>     | <b>97</b>      | <b>96</b>     | <b>99</b> |
| Amoxicillin                        | 100               | 100               | 95                | 92            | 97            | 98             | 88            | 94        |
| Ampicillin                         | 100               | 56                | 60                | 22            | 30            | 41             | 14            | 34        |
| Cephazoline sodium                 | 33                | 11                | 17                | 6             | 4             | 5              | 1             | 8         |
| Cefixime                           | 33                | 22                | 41                | 7             | 16            | 7              | 1             | 15        |
| Ceftriaxone                        | 100               | 100               | 92                | 35            | 42            | 26             | 7             | 46        |
| Cefotaxime injection {for newborn} | 67                | 33                | 25                | 4             | 5             | 4              | 0             | 9         |
| Cefuroxime                         | 67                | 100               | 87                | 16            | 20            | 12             | 1             | 31        |

|   |     |     |     |    |    |     |    |    |
|---|-----|-----|-----|----|----|-----|----|----|
| Chloramphenicol {injection}                     | 67  | 78  | 54  | 39 | 29 | 18  | 10 | 37 |
| Clindamycin                                     | 67  | 100 | 68  | 9  | 11 | 5   | 2  | 22 |
| Cloxacillin                                     | 67  | 67  | 57  | 48 | 56 | 60  | 24 | 51 |
| Erythromicin                                    | 67  | 89  | 87  | 52 | 53 | 47  | 17 | 57 |
| Erythromicin                                    | 33  | 11  | 20  | 9  | 5  | 5   | 4  | 10 |
| Oral flucloxacillin {for newborn}               | 100 | 100 | 90  | 76 | 70 | 64  | 60 | 76 |
| Gentamicin {injection}                          | 100 | 100 | 97  | 66 | 71 | 76  | 28 | 72 |
| Metronidazole {injection}                       | 100 | 100 | 96  | 35 | 41 | 37  | 7  | 48 |
| Penicillin G {Benzyl}                           | 100 | 89  | 80  | 65 | 62 | 48  | 34 | 64 |
| Procaine benzyl penicillin {procaine            | 0   | 22  | 37  | 36 | 36 | 36  | 28 | 35 |
| Soframycin                                      | 0   | 0   | 9   | 2  | 4  | 3   | 0  | 4  |
| Trimethoprim/Sulfamethozazole                   | 100 | 67  | 67  | 37 | 34 | 34  | 17 | 42 |
| Tetracycline eye ointment/drops                 | 33  | 78  | 69  | 49 | 45 | 32  | 33 | 50 |
|   |     |     |     |    |    |     |    |    |
| <b>Any Anticonvulsants/Sedatives?</b>           | 100 | 100 | 100 | 96 | 92 | 90  | 64 | 93 |
| Magnesium sulfate (injection) 50% concentration | 67  | 78  | 67  | 26 | 32 | 48  | 21 | 40 |
| Magnesium sulfate (injection) 20% concentration | 33  | 56  | 45  | 14 | 15 | 23  | 8  | 23 |
| Diazepam (injection)                            | 100 | 89  | 98  | 99 | 96 | 97  | 95 | 98 |
| Phenobarbital (injection)                       | 67  | 67  | 38  | 5  | 10 | 5   | 0  | 14 |
| Phenytoin (Diphenylhydantoin)                   | 67  | 56  | 48  | 9  | 13 | 10  | 0  | 19 |
|   |     |     |     |    |    |     |    |    |
| <b>Any Antihypertensive?</b>                    | 100 | 100 | 97  | 75 | 74 | 52  | 13 | 72 |
| Hydralazine                                     | 100 | 78  | 64  | 6  | 10 | 8   | 0  | 26 |
| Labetalol                                       | 33  | 22  | 10  | 2  | 2  | 4   | 0  | 5  |
| Methyldopa                                      | 100 | 89  | 73  | 9  | 22 | 9   | 0  | 31 |
| Nifedipine                                      | 100 | 100 | 98  | 96 | 96 | 99  | 87 | 97 |
|   |     |     |     |    |    |     |    |    |
| <b>Any Oxytocics or Prostaglandins?</b>         | 100 | 100 | 100 | 99 | 92 | 100 | 71 | 96 |

|                                       |     |     |     |    |    |    |    |    |
|---------------------------------------|-----|-----|-----|----|----|----|----|----|
| Ergometrine (injection)               | 100 | 100 | 96  | 83 | 91 | 83 | 77 | 87 |
| Ergometrine (tablets)                 | 0   | 33  | 50  | 15 | 28 | 41 | 6  | 28 |
| Methylergometrine                     | 67  | 0   | 12  | 3  | 4  | 3  | 0  | 5  |
| Misoprostol                           | 100 | 67  | 61  | 11 | 18 | 32 | 11 | 27 |
| Oxytocin                              | 100 | 100 | 99  | 96 | 94 | 97 | 94 | 97 |
| Prostaglandin E2 (dinoprostone)       | 0   | 0   | 6   | 2  | 2  | 3  | 1  | 3  |
|                                       |     |     |     |    |    |    |    |    |
| <b>Any drugs used in emergencies?</b> | 100 | 100 | 99  | 95 | 92 | 91 | 51 | 91 |
| Adrenaline(epinephrine)               | 100 | 100 | 88  | 45 | 43 | 51 | 12 | 55 |
| Aminophylline                         | 100 | 89  | 95  | 48 | 40 | 28 | 8  | 55 |
| Atropine 271occasion                  | 67  | 100 | 80  | 5  | 6  | 6  | 2  | 25 |
| Calcium gluconate                     | 67  | 44  | 30  | 5  | 8  | 13 | 2  | 13 |
| Digoxin                               | 67  | 56  | 49  | 1  | 5  | 1  | 2  | 14 |
| Diphenhydramine                       | 0   | 22  | 40  | 8  | 9  | 4  | 8  | 15 |
| Ephedrine                             | 0   | 78  | 71  | 17 | 23 | 33 | 2  | 33 |
| Frusemide                             | 100 | 100 | 95  | 37 | 43 | 33 | 2  | 50 |
| Hydrocortisone                        | 100 | 89  | 96  | 89 | 88 | 87 | 69 | 89 |
| Naloxone hydrochloride                | 67  | 22  | 15  | 2  | 1  | 3  | 4  | 6  |
| Nitroglycerine                        | 67  | 22  | 14  | 3  | 5  | 1  | 0  | 6  |
| Promethazine                          | 100 | 89  | 98  | 87 | 92 | 91 | 84 | 91 |
|                                       |     |     |     |    |    |    |    |    |
| <b>Any IV fluids?</b>                 | 100 | 100 | 100 | 99 | 98 | 98 | 60 | 95 |
| Dextrose                              | 100 | 100 | 95  | 88 | 86 | 94 | 72 | 90 |
| Dextran                               | 0   | 67  | 37  | 12 | 15 | 18 | 0  | 19 |
| Lucose 5%                             | 100 | 100 | 94  | 82 | 82 | 82 | 60 | 84 |
| Glucose 10%                           | 100 | 78  | 70  | 18 | 22 | 23 | 7  | 32 |
| Glucose 50%                           | 100 | 100 | 69  | 16 | 19 | 16 | 3  | 29 |
| Normal saline                         | 100 | 100 | 100 | 96 | 97 | 99 | 95 | 98 |
| Ringer's lactate                      | 100 | 100 | 100 | 95 | 96 | 98 | 83 | 96 |
|                                       |     |     |     |    |    |    |    |    |

|                                |     |     |     |     |     |     |     |    |
|--------------------------------|-----|-----|-----|-----|-----|-----|-----|----|
| <b>Any Antimalarials?</b>      | 100 | 100 | 99  | 100 | 99  | 98  | 100 | 99 |
| Sulphadoxine Pyrimethamine     | 100 | 89  | 90  | 91  | 87  | 95  | 87  | 91 |
| Artesonate-Amodiaquine         | 100 | 89  | 92  | 98  | 95  | 90  | 98  | 95 |
| Atemether-lumenfatre           | 100 | 100 | 97  | 70  | 71  | 68  | 38  | 74 |
| Dihydroartemisinin Piperaquine | 67  | 0   | 32  | 7   | 11  | 16  | 1   | 14 |
| Quinine Dihydrochloride        | 100 | 100 | 87  | 75  | 64  | 56  | 30  | 71 |
|                                |     |     |     |     |     |     |     |    |
| <b>Any Antiretrovirals?</b>    | 100 | 100 | 54  | 15  | 9   | 9   | 5   | 23 |
| Nevirapine-mother              | 100 | 100 | 97  | 83  | 69  | 80  | 100 | 91 |
| Nevirapine-newborn             | 100 | 100 | 92  | 81  | 100 | 73  | 80  | 89 |
| Post-HIV exposure prophylaxis  | 100 | 100 | 90  | 26  | 8   | 40  | 20  | 63 |
| Combined ARV for mother        | 100 | 89  | 91  | 27  | 31  | 27  | 20  | 64 |
| Combined ARV for newborn       | 67  | 89  | 74  | 27  | 23  | 33  | 20  | 55 |
|                                |     |     |     |     |     |     |     |    |
| <b>Any Steroids?</b>           | 100 | 89  | 95  | 30  | 41  | 39  | 3   | 46 |
| Betamethasone                  | 0   | 25  | 28  | 5   | 16  | 12  | 0   | 18 |
| Dexamethasone                  | 100 | 100 | 84  | 29  | 43  | 51  | 0   | 60 |
| Prednisone                     | 67  | 63  | 48  | 45  | 52  | 33  | 0   | 46 |
| Prednisolone corticosteriod    | 100 | 75  | 67  | 42  | 55  | 49  | 100 | 57 |
|                                |     |     |     |     |     |     |     |    |
| <b>Any Anesthetics?</b>        | 100 | 89  | 98  | 80  | 75  | 83  | 45  | 81 |
| Halothane/Isoflourane          | 100 | 100 | 73  | 1   | 4   | 2   | 2   | 23 |
| Ketamine                       | 100 | 100 | 84  | 2   | 7   | 6   | 2   | 27 |
| Lignocaine/lidocaine 2% or 1%  | 100 | 100 | 100 | 99  | 99  | 100 | 96  | 99 |
|                                |     |     |     |     |     |     |     |    |
| <b>Any Analgesics?</b>         | 100 | 100 | 100 | 99  | 98  | 99  | 96  | 99 |
| Acetylsalicylic acid (Asprin)  | 100 | 89  | 91  | 62  | 61  | 50  | 24  | 64 |
| Ibuprofen 400mg                | 67  | 100 | 93  | 86  | 87  | 70  | 81  | 85 |
| Morphine (injection)           | 100 | 33  | 19  | 2   | 1   | 1   | 0   | 6  |
| Paracetamol                    | 67  | 100 | 100 | 99  | 99  | 99  | 94  | 99 |
| Pethidine                      | 100 | 100 | 92  | 16  | 21  | 22  | 3   | 35 |
| Declofenac (inj)               | 100 | 100 | 100 | 90  | 94  | 87  | 66  | 91 |
|                                |     |     |     |     |     |     |     |    |

|                       |     |     |    |    |    |    |    |    |
|-----------------------|-----|-----|----|----|----|----|----|----|
| <b>AnyTocolytics?</b> | 100 | 100 | 93 | 51 | 48 | 31 | 8  | 55 |
| indomethacin          | 33  | 11  | 18 | 6  | 19 | 35 | 25 | 15 |
| Ritodrine             | 0   | 11  | 6  | 2  | 4  | 0  | 0  | 4  |
| Salbutamol            | 100 | 89  | 96 | 95 | 97 | 79 | 88 | 94 |

**Table 8.07A: Percentage of facilities with basic and emergency newborn supplies and equipment in the maternity area, by type of facility<sup>1</sup>**

|  | Teaching Hospital | Regional Hospital | District Hospital | Health Centres | Health Clinic | Maternity Homes | CHPS Compound | All Facilities |
|--|-------------------|-------------------|-------------------|----------------|---------------|-----------------|---------------|----------------|
|  | (n=3)             | (n=9)             | (n=269)           | (n=509)        | (n=136)       | (n=164)         | (n=69)        | (n=1159)       |
|  | %                 | %                 | %                 | %              | %             | %               | %             | %              |
| <b>Neonatal resuscitation pack</b>                   |                   |                   |                   |                |               |                 |               |                |
| Mucus extractor/bulb syringe                         | 100               | 100               | 95                | 87             | 84            | 92              | 79            | 81             |
| Infant face masks (sizes 0,1,2)                      | 100               | 67                | 90                | 66             | 55            | 76              | 45            | 65             |
| Ambu (ventilator) bag                                | 100               | 100               | 95                | 82             | 76            | 85              | 59            | 76             |
| Suction catheter 10, 12 CH                           | 100               | 89                | 82                | 42             | 37            | 56              | 14            | 47             |
| Infant laryngoscope with spare bulb and batteries    | 100               | 44                | 36                | 6              | 4             | 11              | 1             | 12             |
| Endotracheal tubes 3.0,3.5                           | 100               | 44                | 41                | 7              | 5             | 12              | 1             | 14             |
| Disposable uncuffed tracheal tubes (sizes 2.0-3.5)   | 100               | 22                | 33                | 6              | 4             | 11              | 1             | 12             |
| Suction aspirator (operated by foot or electrically) | 100               | 78                | 70                | 25             | 22            | 26              | 10            | 32             |
| Mucus trap for suction                               | 100               | 67                | 56                | 21             | 21            | 29              | 7             | 27             |
|  |                   |                   |                   |                |               |                 |               |                |
| <b>Supplies and equipment needed for newborn</b>     |                   |                   |                   |                |               |                 |               |                |
| Baby weighing scale                                  | 100               | 100               | 99                | 95             | 94            | 97              | 79            | 95             |
| Newborn resuscitating table                          | 100               | 100               | 78                | 51             | 58            | 74              | 32            | 61             |
| Incubator  | 100               | 56                | 33                | 1              | 3             | 1               | 1             | 8              |
| Radiant warmer                                       | 100               | 56                | 30                | 3              | 4             | 2               | 0             | 9              |



|  |     |    |    |    |    |    |    |    |
|--|-----|----|----|----|----|----|----|----|
| Icterometer  | 0   | 11 | 7  | 0  | 0  | 0  | 0  | 2  |
| Fluorescent tubes for phototherapy to treat jaundice   | 100 | 78 | 33 | 2  | 1  | 5  | 0  | 9  |
| Pulse oximeter   | 0   | 33 | 20 | 1  | 5  | 4  | 0  | 6  |
| Apnoea monitor   | 0   | 22 | 11 | 2  | 1  | 0  | 1  | 3  |
| Small cup for breast milk expression   | 67  | 44 | 33 | 20 | 22 | 35 | 13 | 23 |
| Towel or cloth for newborn   | 67  | 56 | 43 | 21 | 33 | 55 | 11 | 32 |
| <sup>1</sup> Note: Facilities that did not answer question are excluded from percentage calculation (<2% of any subgroup). |     |    |    |    |    |    |    |    |

**Table 8.08A: Percentage of facilities with basic diagnostic and resuscitation equipment and supplies for other procedures in the maternity area, by type of facility (among facilities that do deliveries)<sup>1</sup>**

|  | Teaching Hospital | Regional Hospital | District Hospital | Health Centres | Health Clinic | Maternity Homes | CHPS Compound | All Facilities |
|--|-------------------|-------------------|-------------------|----------------|---------------|-----------------|---------------|----------------|
|  | (n=3)             | (n=9)             | (n=269)           | (n=509)        | (n=136)       | (n=164)         | (n=69)        | (n=1159)       |
|  | %                 | %                 | %                 | %              | %             | %               | %             | %              |
| <b>Diagnosis</b>   |                   |                   |                   |                |               |                 |               |                |
| Filled oxygen cylinder with cylinder carrier and key to open | 67                | 100               | 90                | 23             | 36            | 41              | 7             | 57             |
| Ultrasound   | 33                | 89                | 79                | 3              | 11            | 10              | 0             | 23             |
| Blood pressure cuff  | 100               | 100               | 100               | 97             | 99            | 100             | 93            | 98             |
| Stethoscope  | 100               | 100               | 100               | 98             | 99            | 100             | 93            | 99             |
| Foetal stethoscope   | 100               | 89                | 97                | 96             | 90            | 96              | 97            | 95             |
| Kidney basins  | 100               | 100               | 99                | 94             | 91            | 97              | 90            | 95             |
| Sponge bowls   | 100               | 100               | 94                | 85             | 86            | 87              | 80            | 87             |
| Clinical oral thermometer                                    | 0                 | 44                | 47                | 29             | 26            | 55              | 32            | 37             |
| Rectal thermometer for newborn                               | 0                 | 0                 | 15                | 5              | 8             | 13              | 6             | 9              |

| <b>Supplies</b>  |     |     |     |    |    |     |    |    |
|--|-----|-----|-----|----|----|-----|----|----|
| Low reading thermometer(32 or35 degree C)  | 67  | 67  | 41  | 42 | 54 | 45  | 36 | 43 |
| Scissors   | 100 | 100 | 99  | 99 | 99 | 100 | 97 | 99 |
| Needle and syringes(10-20cc)   | 100 | 89  | 87  | 60 | 57 | 74  | 49 | 67 |
| Syringes(1ml,2ml,5ml,10ml)   | 100 | 89  | 77  | 57 | 58 | 65  | 51 | 63 |
| Needles (23-25 gauge)  | 100 | 89  | 96  | 95 | 95 | 90  | 93 | 94 |
| Suture needles/suture materials  | 100 | 89  | 100 | 96 | 97 | 96  | 77 | 96 |
| Cannulae for IV line(16-18)  | 100 | 100 | 99  | 90 | 90 | 93  | 72 | 92 |
| Urinary catheters  | 100 | 100 | 100 | 87 | 90 | 98  | 71 | 91 |
| IV infusion  | 100 | 100 | 99  | 89 | 88 | 94  | 51 | 90 |
| Neonatal giving set/umbilical catheter   | 0   | 44  | 28  | 10 | 12 | 12  | 1  | 14 |
| Uristix (dip stick for protein in urine )  | 100 | 67  | 71  | 51 | 67 | 87  | 42 | 62 |
| Adult ventilator bag and mask  | 33  | 78  | 74  | 35 | 30 | 29  | 26 | 42 |
| Mouth gag  | 67  | 44  | 45  | 10 | 21 | 24  | 4  | 21 |
| Wheelchair   | 100 | 100 | 89  | 66 | 64 | 63  | 22 | 68 |
| Stretcher with trolley   | 100 | 100 | 79  | 36 | 35 | 17  | 6  | 42 |
| Examination table  | 100 | 78  | 88  | 91 | 89 | 95  | 77 | 90 |
| Labour/delivery table with stirrups  | 100 | 100 | 80  | 63 | 55 | 37  | 30 | 61 |
| Labour/delivery table without stirrups   | 67  | 44  | 54  | 54 | 54 | 70  | 55 | 56 |
| Partograph   | 67  | 100 | 88  | 72 | 74 | 71  | 53 | 75 |
| Plain thump forceps  | 67  | 89  | 65  | 50 | 47 | 52  | 36 | 53 |
| Dressing forceps   | 67  | 100 | 96  | 91 | 92 | 96  | 90 | 93 |
| Surgeon's hand brush with nylon bristles   | 67  | 56  | 57  | 29 | 36 | 31  | 28 | 37 |
| Watch or clock with second that can be easily seen   | 100 | 100 | 97  | 85 | 88 | 98  | 62 | 89 |
| Measuring tape   | 100 | 100 | 99  | 99 | 99 | 100 | 99 | 99 |
| Nasogastric tubes or other tubing for oxygen administration  | 67  | 100 | 91  | 26 | 31 | 36  | 6  | 43 |
| <sup>1</sup> Note: Facilities that did not reply to the question are excluded from percentage calculation (<3% of any subgroup). |     |     |     |    |    |     |    |    |

**Table 8.09A: Percentage of facilities with an operating theatre (OT) and, among those with an OT, percent with select equipment and supplies**

| Type of facility <sup>1</sup>                   | Teaching Hospital | Regional Hospital | District Hospital | Health Centre  | Health Clinic  | Maternity Home | All Facilities  |
|---|-------------------|-------------------|-------------------|----------------|----------------|----------------|-----------------|
|   | %                 | %                 | %                 | %              | %              | %              | %               |
| <i>Among all facilities</i>                     | <i>(n=3)</i>      | <i>(n=9)</i>      | <i>(n=273)</i>    | <i>(n=518)</i> | <i>(n=161)</i> | <i>(n=165)</i> | <i>(n=1268)</i> |
| Facility has an operating theatre               | 100               | 100               | 90                | 1              | 2              | 2              | 21              |
| Facility has separate OT for obstetric patients | 100               | 56                | 14                | <1             | 0              | 0              | 4               |
|   |                   |                   |                   |                |                |                |                 |
| <i>Among facilities with an OT</i>              | <i>(n=3)</i>      | <i>(n=9)</i>      | <i>(n=245)</i>    | <i>(n=3)</i>   | <i>(n=4)</i>   | <i>(n=4)</i>   | <i>(n=268)</i>  |
| When are drug supplies ordered                  |                   |                   |                   |                |                |                |                 |
| Daily   | 0                 | 22                | 10                | 33             | 0              | 33             | 10              |
| Order same time each week/month/quarter         | 67                | 44                | 35                | 0              | 33             | 67             | 36              |
| Order whenever stocks reach "order level"       | 33                | 11                | 42                | 33             | 33             | 0              | 40              |
| Re-order when we run out                        | 0                 | 11                | 5                 | 0              | 33             | 0              | 5               |
| Medicine ordered on patient-by- patient basis   | 0                 | 11                | 7                 | 0              | 0              | 0              | 7               |
| Other   | 0                 | 0                 | 1                 | 33             | 0              | 0              | 1               |
|   |                   |                   |                   |                |                |                |                 |
| Basic items                                     |                   |                   |                   |                |                |                |                 |
| Operating table                                 | 100               | 100               | 99                | 33             | 100            | 75             | 98              |
| Light-adjustable, shadowless                    | 100               | 100               | 96                | 33             | 33             | 75             | 94              |
| Surgical drapes                                 | 100               | 100               | 99                | 33             | 100            | 75             | 98              |
| Syringes 5ml                                    | 100               | 89                | 100               | 67             | 100            | 75             | 99              |
| Syringes 10ml                                   | 100               | 89                | 98                | 67             | 100            | 50             | 97              |
| Syringes 20ml                                   | 100               | 56                | 73                | 50             | 67             | 50             | 72              |
| Needle 21,22,23                                 | 100               | 78                | 93                | 67             | 100            | 50             | 91              |
|   |                   |                   |                   |                |                |                |                 |
| Obstetric laparotomy /caesarean delivery pack   |                   |                   |                   |                |                |                |                 |
| Stainless steel instrument tray w/ cover        | 67                | 56                | 91                | 33             | 67             | 75             | 88              |
| Towel chips                                     | 100               | 89                | 100               | 33             | 100            | 75             | 98              |
| Sponge forceps,22.5cm                           | 100               | 100               | 95                | 33             | 100            | 75             | 95              |
| Straight artery forceps,16cm                    | 100               | 100               | 95                | 33             | 100            | 50             | 94              |
| Uterine haemostasis                             | 100               | 100               | 88                | 33             | 33             | 75             | 88              |
| Needle holder                                   | 100               | 89                | 100               | 33             | 100            | 75             | 98              |
| Surgical knife handle/no                        | 100               | 100               | 96                | 33             | 67             | 75             | 95              |

|  |     |     |     |    |     |    |    |
|--|-----|-----|-----|----|-----|----|----|
| 3  |     |     |     |    |     |    |    |
| Surgical knife handle/no 4   | 100 | 100 | 96  | 33 | 33  | 50 | 94 |
| Surgical knife blades  | 100 | 100 | 100 | 33 | 100 | 75 | 98 |
| Triangular point suture needles/7.3 c  | 100 | 75  | 76  | 33 | 33  | 50 | 74 |
| Round-bodied needles/no 12/size 6  | 100 | 89  | 87  | 33 | 67  | 50 | 86 |
| Abdominal retractor/size 3   | 100 | 100 | 95  | 33 | 67  | 75 | 94 |
| Abdominal retractors/double-ended  | 100 | 89  | 85  | 33 | 67  | 75 | 84 |
| Curved operating scissors/blunt point  | 100 | 89  | 94  | 33 | 100 | 75 | 93 |
| Straight operating scissors/blunt poi  | 100 | 100 | 95  | 33 | 100 | 75 | 94 |
| Scissors, straight, 23   | 100 | 100 | 94  | 33 | 100 | 75 | 94 |
| Suction nozzle   | 100 | 100 | 93  | 33 | 67  | 50 | 92 |
| Suction tube, 22.5cm, 23 French gauge  | 100 | 89  | 95  | 33 | 67  | 75 | 93 |
| Intestinal clamps, curved, 22.5cm  | 67  | 78  | 81  | 33 | 67  | 75 | 80 |
| Intestinal clamps, straight, 22.5cm  | 67  | 89  | 82  | 33 | 67  | 75 | 81 |
| Dressing (non-toothed tissue) forceps/   | 100 | 89  | 93  | 33 | 100 | 75 | 92 |
| Dressing (non-toothed tissue) forceps/   | 67  | 89  | 87  | 0  | 100 | 75 | 86 |
| Sutures (different sizes and types)  | 100 | 100 | 100 | 33 | 100 | 75 | 99 |
| Mini-laparotomy kit  | 100 | 78  | 78  | 33 | 67  | 75 | 77 |
| <i>Note: Facilities that did not answer question were excluded from percentage calculation (&lt;3% of any subgroup except Health Clinics and Maternity Homes where 1 facility (or 25% of facilities in the subgroup) did not answer some questions).</i> |     |     |     |    |     |    |    |
| <sup>1</sup> <i>Since no CHPS compounds had an OT, CHPS compounds are not presented in this table.</i>   |     |     |     |    |     |    |    |

**Table 8.10A: Percentage of facilities with an operating theatre (OT) that have anaesthesia equipment and supplies.**

| Type of facility <sup>1</sup>  | Teaching Hospital with OT (n=3) | Regional Hospital with OT (n=9) | District (Other) Hospital with OT (n=245) | Health Centre with OT (n=3) | Health Clinic with OT (n=4) | Maternity Home with OT (n=4) | All Facilities with OT (n=268) |
|--|---------------------------------|---------------------------------|---|-----------------------------|-----------------------------|------------------------------|--------------------------------|
|  | %                               | %                               | %   | %                           | %                           | %                            | %                              |
| <b>Anaesthesia equipment</b>   |                                 |                                 |   |                             |                             |                              |                                |
| Anaesthetic face masks   | 100                             | 100                             | 98  | 33                          | 67                          | 75                           | 97                             |
| Oropharyngeal airways  | 100                             | 100                             | 95  | 33                          | 33                          | 75                           | 94                             |
| Laryngoscopes(with spare bulbs and batteries)  | 100                             | 100                             | 92  | 0                           | 33                          | 25                           | 89                             |
| Endotracheal tubes with cuffs (8mm)  | 100                             | 100                             | 90  | 33                          | 33                          | 50                           | 88                             |
| Endotracheal tubes with cuffs (10mm)   | 67                              | 78                              | 77  | 0                           | 33                          | 75                           | 76                             |
| Incubating forceps   | 67                              | 78                              | 81  | 33                          | 33                          | 75                           | 80                             |
| Endotracheal tube connectors   | 67                              | 89                              | 82  | 33                          | 33                          | 75                           | 81                             |
| Spinal needles(18-guage to 25-guage)   | 100                             | 100                             | 93  | 33                          | 67                          | 75                           | 92                             |
| Suction apparatus: foot-operated   | 33                              | 0                               | 39  | 0                           | 33                          | 25                           | 37                             |
| Suction apparatus: electric  | 67                              | 100                             | 93  | 33                          | 33                          | 50                           | 91                             |
| Anaesthetic vaporizers   | 100                             | 89                              | 70  | 33                          | 33                          | 75                           | 70                             |
| Oxygen cylinder with manometer and flow-meter (low flow) tubes and connectors  | 67                              | 100                             | 97  | 33                          | 67                          | 75                           | 95                             |
| <b>Craniotomy Equipment</b>  |                                 |                                 |   |                             |                             |                              |                                |
| Decapitation hook s/s  | 33                              | 22                              | 18  | 0                           | 0                           | 0                            | 17                             |
| Craniotomy forceps s/s   | 33                              | 22                              | 17  | 0                           | 0                           | 0                            | 16                             |
| Perforator   | 33                              | 33                              | 17  | 0                           | 0                           | 0                            | 17                             |
| <i>Note: Facilities that did not answer question are excluded from percentage calculation (&lt;3% of any subgroup except Health Clinics where 1 facility (or 25% of facilities in the subgroup) did not answer any questions).</i> |                                 |                                 |   |                             |                             |                              |                                |
| <sup>1</sup> Since no CHPS compounds had an OT, CHPS compounds were not included in the analysis   |                                 |                                 |   |                             |                             |                              |                                |

**Table 8.11A: Percentage of facilities with a laboratory and among them, percentage with laboratory supplies, by type of facility**

| Type of facility <sup>1</sup>                 | Teaching Hospital | Regional Hospital | District (Other) Hospital | Health Centre | Health Clinic | Maternity Home | Total    |
|---|-------------------|-------------------|---------------------------|---------------|---------------|----------------|----------|
|   | %                 | %                 | %                         | %             | %             | %              | %        |
| <i>Among all facilities</i>                   | (n=3)             | (n=9)             | (n=273)                   | (n=518)       | (n=161)       | (n=165)        | (n=1268) |
| Facility has a laboratory                     | 100               | 100               | 96                        | 31            | 36            | 28             | 43       |
| <i>Among facilities with a laboratory</i>     | (n=3)             | (n=9)             | (n=262)                   | (n=158)       | (n=56)        | (n=45)         | (n=533)  |
| Facility has set of guidelines for laboratory | 100               | 100               | 85                        | 65            | 81            | 59             | 77       |
| <b>Laboratory supplies</b>                    |                   |                   |                           |               |               |                |          |
| Microscope                                    | 100               | 100               | 99                        | 93            | 100           | 91             | 97       |
| Immersion oil                                 | 100               | 100               | 98                        | 89            | 96            | 89             | 95       |
| Glass rods                                    | 67                | 67                | 64                        | 37            | 60            | 50             | 55       |
| Sink or staining tank                         | 100               | 100               | 97                        | 75            | 85            | 73             | 87       |
| Measuring cylinder (25 ml) polypropylene      | 67                | 67                | 58                        | 24            | 36            | 20             | 43       |
| Measuring cylinder (50 ml) polypropylene      | 67                | 67                | 61                        | 27            | 29            | 16             | 44       |
| Measuring cylinder (100 ml) polypropylene     | 67                | 78                | 63                        | 34            | 29            | 11             | 47       |
| Measuring cylinder (250 ml) polypropylene     | 100               | 67                | 56                        | 31            | 29            | 7              | 42       |
| Measuring cylinder (500 ml) polypropylene     | 67                | 78                | 68                        | 34            | 27            | 2              | 48       |
| Wash bottle                                   | 67                | 100               | 83                        | 56            | 65            | 52             | 71       |
| Bottle with buffered water                    | 67                | 78                | 69                        | 31            | 45            | 43             | 53       |
| Timer clock with alarm                        | 33                | 67                | 69                        | 42            | 55            | 52             | 58       |
| Rack for drying slides                        | 100               | 89                | 84                        | 65            | 76            | 73             | 77       |
| Giemsa stain                                  | 100               | 100               | 94                        | 75            | 91            | 80             | 87       |
| Wright stain                                  | 33                | 0                 | 21                        | 13            | 20            | 16             | 18       |
| May Grunwald stain                            | 0                 | 11                | 13                        | 5             | 4             | 9              | 9        |
| Funnel and filter paper                       | 100               | 100               | 81                        | 51            | 62            | 36             | 67       |
| Methanol                                      | 100               | 100               | 84                        | 40            | 60            | 39             | 65       |
| Refrigerator for laboratory supplies          | 100               | 100               | 93                        | 43            | 73            | 66             | 74       |
| Glass containers                              | 100               | 78                | 76                        | 41            | 64            | 57             | 63       |
| Counting chamber (Differential counter)       | 67                | 100               | 85                        | 46            | 64            | 32             | 67       |
| Pipette (5 ml)                                | 67                | 89                | 84                        | 59            | 69            | 59             | 73       |
| Pipette (graduated 1.0ml)                     | 100               | 89                | 81                        | 47            | 64            | 39             | 66       |

|  |     |     |     |     |     |     |     |
|--|-----|-----|-----|-----|-----|-----|-----|
| Dropping Pipette   | 100 | 100 | 87  | 71  | 73  | 73  | 80  |
| Cover slips  | 100 | 100 | 97  | 83  | 98  | 86  | 92  |
| Petri dishes   | 67  | 100 | 58  | 17  | 24  | 5   | 38  |
| Bowls, stainless steel, assorted sizes   | 67  | 78  | 60  | 49  | 49  | 43  | 54  |
| Tork diluting solution   | 67  | 44  | 30  | 11  | 17  | 18  | 23  |
| Tally counter  | 100 | 100 | 82  | 41  | 58  | 23  | 63  |
| Haemoglobinometer  | 33  | 56  | 50  | 40  | 42  | 37  | 45  |
| Spectrophotometer  | 33  | 56  | 74  | 23  | 38  | 27  | 51  |
| Microhaematocrit centrifuge (manual or electric)   | 67  | 56  | 43  | 28  | 40  | 28  | 37  |
| Balance for reading results  | 67  | 56  | 54  | 17  | 29  | 23  | 38  |
| Herparinized capillary tubes   | 67  | 89  | 62  | 20  | 33  | 11  | 43  |
| Spirit lamp  | 33  | 44  | 43  | 35  | 27  | 34  | 38  |
| Ethanol  | 67  | 100 | 82  | 48  | 56  | 48  | 67  |
| Dip sticks   | 67  | 100 | 76  | 41  | 45  | 48  | 61  |
| Test tubes   | 67  | 100 | 99  | 90  | 100 | 98  | 96  |
| Test tube rack   | 100 | 100 | 97  | 78  | 80  | 77  | 88  |
| Beaker:100ml   | 67  | 78  | 60  | 21  | 31  | 18  | 43  |
| Beaker: 250 ml   | 67  | 67  | 60  | 19  | 20  | 9   | 40  |
| Beaker:1000 ml   | 67  | 78  | 49  | 17  | 20  | 7   | 33  |
| Group Total  | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Ammonia  | 33  | 56  | 28  | 8   | 11  | 11  | 19  |
| Lugol's iodine   | 33  | 78  | 67  | 18  | 18  | 16  | 43  |
| CD 4 machine   | 67  | 100 | 51  | 4   | 4   | 0   | 29  |
| <i>Note: Facilities that did not answer question are excluded from percentage calculation (&lt;9% in all subgroups).</i> |     |     |     |     |     |     |     |
| <i>1. Since no CHPS compounds had a laboratory, CHPS are excluded from this table.</i>                                   |     |     |     |     |     |     |     |

**Table 8.12A: Percentage of facilities with equipment and supplies for blood transfusion, by type of facility (among facilities with a laboratory)**

| Type of facility <sup>1</sup>               | Teaching Hospital (n=3) | Regional Hospital (n=9) | District (Other) Hospital (n=262) | Health Centre (n=158) | Health Clinic (n=158) | Maternity Home (n=56) | All facilities (n=533) |
|---|-------------------------|-------------------------|-----------------------------------|-----------------------|-----------------------|-----------------------|------------------------|
| Equipment & Supplies for Blood Transfusions |                         |                         |                                   |                       |                       |                       |                        |
| Refrigerator for blood bank                 | 100                     | 100                     | 62                                | 6                     | 7                     | 11                    | 37                     |
| Test tubes – small size                     | 100                     | 100                     | 94                                | 81                    | 98                    | 93                    | 91                     |

|  |     |     |     |    |     |    |    |
|--|-----|-----|-----|----|-----|----|----|
| Test tubes – medium size                 | 100 | 89  | 94  | 79 | 96  | 82 | 89 |
| Slides (microscope)                      | 100 | 100 | 100 | 93 | 98  | 98 | 97 |
| Compound microscope                      | 67  | 67  | 79  | 68 | 71  | 73 | 74 |
| Microscope illuminator                   | 100 | 56  | 62  | 28 | 44  | 43 | 49 |
| Blood lancets                            | 67  | 100 | 100 | 91 | 96  | 93 | 96 |
| Cotton wool                              | 100 | 100 | 100 | 96 | 100 | 98 | 98 |
| Rack                                     | 100 | 100 | 98  | 83 | 96  | 89 | 93 |
| 8.5 g/l Sodium Chloride solution         | 100 | 100 | 92  | 56 | 75  | 70 | 78 |
| 20% Bovine albumin                       | 33  | 33  | 34  | 14 | 13  | 29 | 25 |
| Centrifuge (electric)                    | 100 | 89  | 97  | 77 | 93  | 80 | 89 |
| Centrifuge (hand driven)                 | 0   | 22  | 14  | 13 | 11  | 12 | 13 |
| 37° Water bath (or incubator)            | 100 | 89  | 70  | 16 | 36  | 28 | 48 |
| Pipettes Volumetric – 1 ml               | 100 | 100 | 86  | 55 | 62  | 48 | 71 |
| Pipettes Volumetric – 2 ml               | 67  | 89  | 79  | 46 | 45  | 41 | 63 |
| Pipettes Volumetric – 3ml                | 67  | 89  | 73  | 48 | 53  | 43 | 61 |
| Pipettes Volumetric – 5ml                | 33  | 89  | 80  | 46 | 55  | 45 | 64 |
| Pipettes Volumetric – 10ml               | 33  | 89  | 76  | 43 | 53  | 52 | 62 |
| Pipettes Volumetric – 20ml               | 33  | 78  | 70  | 37 | 42  | 52 | 56 |
| Pipette holder of 10 pieces              | 67  | 44  | 48  | 27 | 44  | 45 | 41 |
| Blood typing and cross-matching reagents | 67  | 89  | 88  | 54 | 62  | 51 | 72 |
| Blood collection bags                    | 67  | 100 | 65  | 5  | 20  | 9  | 38 |
|  |     |     |     |    |     |    |    |
| Blood collection and screening tests     |     |     |     |    |     |    |    |
| Airway needle for collecting blood       | 67  | 100 | 58  | 5  | 18  | 2  | 34 |
| Artery forceps                           | 67  | 78  | 57  | 20 | 27  | 30 | 41 |
| Anticoagulant                            | 100 | 78  | 86  | 41 | 47  | 50 | 66 |



|  |     |     |     |    |    |    |    |  |
|--|-----|-----|-----|----|----|----|----|--|
| bottles  |     |     |     |    |    |    |    |  |
| Scale for blood collection   | 67  | 78  | 43  | 5  | 15 | 7  | 26 |  |
| Hepatitis B Test   | 100 | 100 | 96  | 61 | 76 | 64 | 81 |  |
| Hepatitis C Test   | 67  | 89  | 76  | 24 | 25 | 18 | 51 |  |
| HIV Test   | 67  | 100 | 95  | 65 | 73 | 68 | 82 |  |
| Syphilis Test  | 67  | 100 | 90  | 55 | 62 | 52 | 74 |  |
| Pregnancy test kit   | 67  | 89  | 100 | 90 | 96 | 95 | 96 |  |
| Malaria testing kit  | 67  | 67  | 80  | 90 | 84 | 82 | 83 |  |
| <i>Note: Facilities that did not answer question are excluded from percentage calculation (&lt;9% in all subgroups).</i> |     |     |     |    |    |    |    |  |
| <i>1. Since no CHPS compounds had a laboratory, CHPS are excluded from this table.</i>                                   |     |     |     |    |    |    |    |  |

**Table 8.13A: Percentage of facilities with autoclave, sterilization and incineration items in the maternity area<sup>1</sup>, by type of facility (among facilities that do deliveries)**

| Type of facility   | Teaching Hospital | Regional Hospital | District Hospital | Health Centre | Health Clinic | Maternity Home | CHPS Compound | All facilities |
|--|-------------------|-------------------|-------------------|---------------|---------------|----------------|---------------|----------------|
|  | (n=3)             | (n=9)             | (n=269)           | (n=509)       | (n=136)       | (n=164)        | (n=69)        | (n=1159)       |
| Autoclave, Sterilization Equipment and Incineration      | %                 | %                 | %                 | %             | %             | %              | %             | %              |
| Separate autoclave room                                  | 67                | 56                | 59                | 7             | 14            | 12             | 3             | 21             |
| Autoclave (with temperature and pressure gauges)         | 100               | 67                | 67                | 13            | 19            | 12             | 7             | 26             |
| Hot air Sterilizer (dry oven)                            | 100               | 25                | 41                | 6             | 12            | 11             | 3             | 16             |
| Steam Sterilizer   | 100               | 25                | 45                | 15            | 16            | 16             | 12            | 22             |
| Steam Instrument Sterilizer / Pressure Cooker (electric) | 33                | 11                | 44                | 22            | 23            | 30             | 15            | 28             |
| Sterilizer / Pressure Cooker (kerosene heated)           | 0                 | 0                 | 6                 | 23            | 21            | 12             | 17            | 17             |
| Sterilization drum                                       | 100               | 89                | 86                | 61            | 64            | 72             | 41            | 68             |
| Sterilization drum stand                                 | 100               | 44                | 46                | 12            | 16            | 14             | 10            | 21             |
| Functioning  | 67                | 100               | 57                | 30            | 19            | 36             | 10            | 35             |

|   |  |  |  |  |  |  |  |  |
|---|--|--|--|--|--|--|--|--|
| incinerator   |  |  |  |  |  |  |  |  |
| <i>Note: Facilities that did not answer question are excluded from percentage calculation (&lt;3% of any subgroup).</i>   |  |  |  |  |  |  |  |  |
| <i><sup>1</sup>For hospitals, the maternity area was likely to be a specific room and these questions were related to the items available in that specific room. Health centres may not have had a specific room devoted to a maternity ward and these questions were therefore related to whether the facility, in general, had the items available.</i> |  |  |  |  |  |  |  |  |

**Table 9.01A: Percent distribution of time between diagnosis for caesarean and surgery, and reasons for delay, by sector**

| Time lapse between diagnosis of caesarean and surgery and reason for delay | All cases | Cases in public sector | Cases in private sector | Cases in religious/ NGO |
|--|-----------|------------------------|-------------------------|-------------------------|
|  | %         | %                      | %                       | %                       |
|  | (n=697)   | (n=315)                | (n=239)                 | (n=143)                 |
| Time lapse, diagnosis to surgery   |           |                        |                         |                         |
| 30 minutes or less   | 31        | 16                     | 22                      | 33                      |
| 31 - 60 minutes  | 5         | 6                      | 4                       | 6                       |
| > 1 hr and ≤ 2 hours   | 14        | 17                     | 8                       | 18                      |
| > 2 hrs and ≤ 5 hours  | 4         | 5                      | 1                       | 4                       |
| > 5 hrs and ≤ 24 hours   | 9         | 6                      | 12                      | 10                      |
| > 24 hours   | 2         | 2                      | 1                       | 1                       |
| Unknown  | 45        | 48                     | 52                      | 27                      |
|  |           |                        |                         |                         |
|  |           |                        |                         |                         |
| Reasons for delay > 30 minutes   | (n=225)   | (n=112)                | (n=61)                  | (n=52)                  |
| Human resources not available, on call, delayed calling                    | 11        | 15                     | 8                       | 6                       |
| Labor was being monitored/PIH being observed                               | 4         | 5                      | 3                       | 0                       |
| Patient being prepared   | 2         | 4                      | 0                       | 0                       |
| Blood not readily available  | 2         | 3                      | 0                       | 2                       |
| Cesarean was elective  | 2         | 1                      | 3                       | 2                       |
| Patient counseled, refused surgery, consent signing                        | 1         | 2                      | 0                       | 2                       |
| Lack of drugs  | 1         | 2                      | 0                       | 0                       |
| Lack of equipment/infrastructure   | 1         | 2                      | 0                       | 0                       |
| Other (failed vacuum, indications for C/S given)                           | 3         | 3                      | 3                       | 2                       |
| Unknown  | 71        | 61                     | 82                      | 81                      |

**Table 9.02A: Percent distribution of time spent in facility following caesarean delivery and mean duration of stay according to type of cesarean, infection status and indication, by sector**

|                           | All cases (n=651) | Cases in public sector (n=296) | Cases in private sector (n=226) | Cases in religious/ NGO (n=129) |
|---------------------------|-------------------|--------------------------------|---------------------------------|---------------------------------|
|                           | %                 | %                              | %                               | %                               |
| Duration of hospital stay |                   |                                |                                 |                                 |
| 0 - 3 days                | 19                | 20                             | 15                              | 24                              |
| 4 - 5 days                | 38                | 37                             | 41                              | 33                              |
| 6 - 7 days                | 28                | 26                             | 35                              | 21                              |
| ≥ 8 days                  | 15                | 17                             | 9                               | 22                              |

|  | Days | Days | Days | Days |
|--|------|------|------|------|
| Average time in hospital (in days) <sup>1</sup>  | 5.6  | 5.7  | 5.4  | 5.6  |
| By type of cesarean  |      |      |      |      |
| Emergency cesarean   | 5.5  | 5.6  | 5.3  | 5.6  |
| Elective cesarean  | 5.6  | 6.0  | 5.3  | 6.0  |
| No information   | 5.9  | 5.6  | 6.2  | 6.3  |
| By wound infection   |      |      |      |      |
| Wound infected <sup>2</sup>  | 8.5  | 8.8  | 11.3 | 6.5  |
| Wound not infected   | 5.4  | 5.6  | 5.1  | 5.7  |
| No information   | 5.6  | 5.3  | 6.4  | 5.2  |
| By indication  |      |      |      |      |
| Maternal Indications   |      |      |      |      |
| CPD/prolonged labor/ruptured uterus  | 5.3  | 5.0  | 5.1  | 5.3  |
| Previous scar/4th degree tear  | 5.3  | 5.7  | 4.6  | 6.4  |
| PE/Eclampsia   | 6.9  | 7.6  | 8.4  | 5.2  |
| Placenta previa/abruptio/APH   | 5.8  | 5.5  | 5.8  | 6.4  |
| Failed induction/AVD   | 5.7  | 5.0  | 6.2  | 5.0  |
| Other (elderly primip, BTL, PROM, fibroids, etc.)  | 6.1  | 6.2  | 5.8  | 6.1  |
| Fetal Indications  |      |      |      |      |
| Fetal distress   | 4.9  | 4.8  | 5.0  | 5.1  |
| Breech with footling/malpresentation   | 6.1  | 5.6  | 6.5  | 6.6  |
| Multiple gestation <sup>2</sup>  | 5.5  | 3.7  | 6.0  | 6.7  |
| Cord prolapse <sup>2</sup>   | 5.1  | 4.9  | 0.0  | 6.0  |
| Post term <sup>2</sup>   | 5.7  | 6.7  | 4.7  | 7.0  |
| No information <sup>2</sup>  | 5.5  | 4.0  | 5.8  | 3.0  |
| 1. 46 (or 6%) charts reviewed had no information on average time (days) in hospital. They are excluded from average calculation.   |      |      |      |      |
| 2. Small number of cases: infected wound: government (n=13), private for profit (n=3), NGO (n=6); multiple gestations: government (n=4), private for profit (n=8), NGO (n=3); cord prolapse: government (n=8), PFP (n=0), NGO (n=2); post-term: government (n=3), PFP (n=4), NGO (n=1); No info: government (n=1), PFP (n=11), NGO (n=1) |      |      |      |      |

**Table 9.03A: Percent distribution of women whose caesarean deliveries were reviewed according to wound infections status, antibiotic treatment, permanent contraception and condition after surgery, by sector**

|  | All cases<br>(n=697) | Cases in<br>public sector<br>(n=315) | Cases in<br>private<br>sector<br>(n=239) | Cases in<br>religious/<br>NGO (n=143) |
|--|----------------------|--------------------------------------|--|---------------------------------------|
|  | %                    | %                                    | %  | %                                     |
| Caesarean wound became infected  |                      |                                      |  |                                       |
| Yes <sup>1</sup>   | 3                    | 4                                    | 1  | 4                                     |
| No   | 79                   | 76                                   | 82                                       | 80                                    |
| Unknown  | 18                   | 20                                   | 16                                       | 15                                    |
| Antibiotics given prophylactically   |                      |                                      |  |                                       |
| Yes  | 69                   | 70                                   | 68                                       | 68                                    |
| No   | 22                   | 21                                   | 22                                       | 25                                    |
| Unknown  | 9                    | 10                                   | 11                                       | 6                                     |
| Permanent contraception given  |                      |                                      |  |                                       |
| Yes  | 13                   | 15                                   | 11                                       | 13                                    |
| No   | 51                   | 47                                   | 49                                       | 62                                    |
| Unknown  | 36                   | 38                                   | 41                                       | 25                                    |
| Condition of the mother  |                      |                                      |  |                                       |
| Alive  | 98                   | 98                                   | 98                                       | 97                                    |
| Dead <sup>2</sup>  | 1                    | 1                                    | 0  | 2                                     |
| Unknown  | 1                    | 0                                    | 2  | 1                                     |
| <sup>1</sup> 14 of these women are known to have received antibiotics prophylactically around the time of surgery                                    |                      |                                      |  |                                       |
| <sup>2</sup> Causes of maternal death: 1 PPH, 1 acute renal failure, 1 maternal distress/cardiac arrest and 4 with no information on cause of death. |                      |                                      |  |                                       |