

National Assessment for Emergency Obstetric and Newborn Care

Ghana

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List of Acronyms

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

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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Dr. George K. Amofah	Deputy Director General, Ghana Health Service
Dr. Patrick Kuma- Aboagye	Deputy Director, FHD (RCH), Ghana Health Service
Dr. Cynthia Bannerman	Ag. Director ICD, Ghana Health Service
Mrs. Gladys Brew	Safe Motherhood Programme Manager, FHD-GHS
Mr. Emmanuel Owusu Ansah	Head, Policy Analysis Unit, PPME-MoH
Mrs. Susanna Larbi Wumbee	Deputy Director Nursing Services, ICD-GHS
Ms Irene Dede Sawerteh	Administrative Manager/Programme Assistant, GHS
Mr. Appiah Kusi-Boateng	Data Analyst, Ghana Statistical Service
Ms Yayne Fekadu	AMDD intern

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Dr. George K. Amofah	Deputy Director General, Ghana Health Service
Dr. Gloria Quansah Asare	Director, Family Health Division
Dr. Anirban Charterjee	Chief of Health and Nutrition, UNICEF
Ms Jane Mwangi	M&E Specialist, UNICEF
Dr. (Mrs.) Rhoda Manu	PMTCT/MH Specialist, UNICEF
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Executive Summary

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 4th, 2010 in Upper East Region. For all other regions, data collection began July 25th and concluded by 7th 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 CSPro 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.

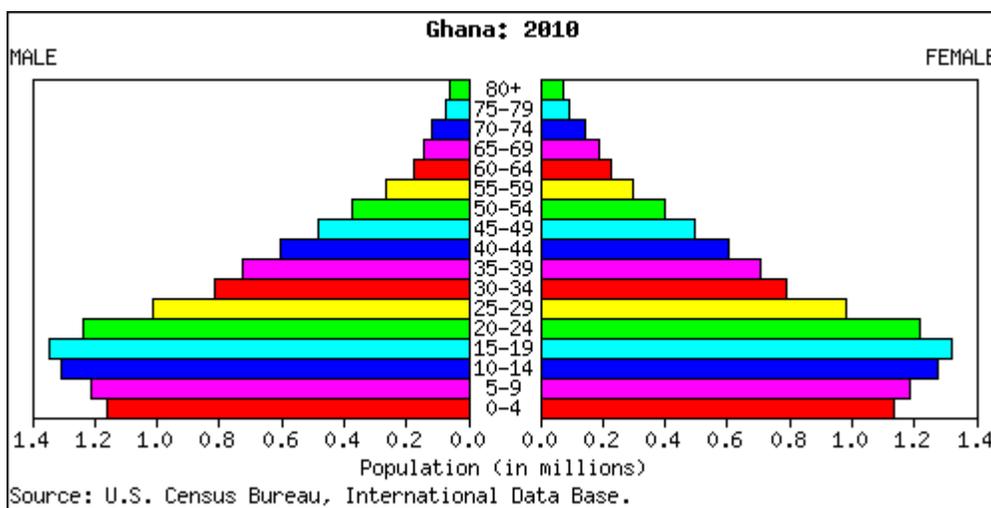
Fig. 1.01: Map of Ghana showing administrative Regions/Capitals



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 24,232,431¹ with a population density varying from 897 per km² in Greater Accra Region to 31 per km² 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 population². Population growth rate 2.4%³, total fertility rate (children born per women)⁴ 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

¹ Ghana 2010 Census, provisional results

² GHS 2009 Facts and Figures

³ Ghana 2010 Census preliminary results

⁴ GDHS, 2008

services for all people living in Ghana and promoting the development of a local health industry”⁵. 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 infections⁶.

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.

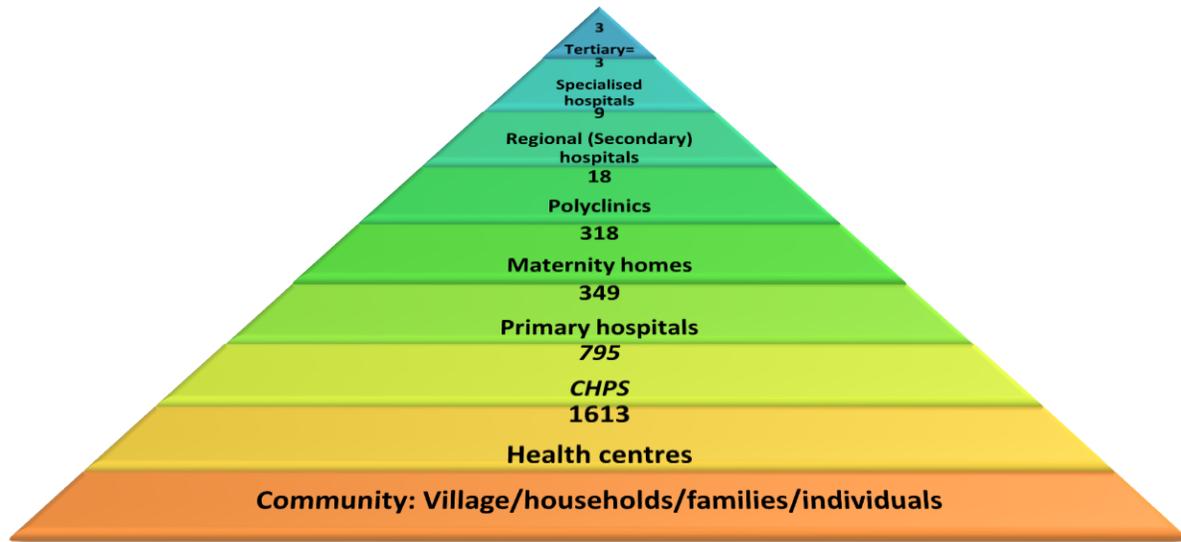
Health service in Ghana is delivered at three levels: Primary, secondary and tertiary levels. The primary level is made up of all health institutions (CHPS, clinics, health centres and hospitals), faith-based, private, public or traditional. The district hospital is the first referral point with maternity, 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.

⁵ The Health Sector Medium-Term Development Plan (HSMTDP) 2010-2013

⁶ 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 data⁷. 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 2008⁸. 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;

⁷ Maternal Health Survey 2007

⁸ 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 audited⁹.

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 women¹⁰.

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 assessment¹¹.

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

⁹ The Health Sector Medium-Term Development Plan (HSMTDP) 2010-2013

¹⁰ (GMMS 2007).

¹¹ 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

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 4th, 2010 in Upper East Region. For all other regions, data collection began July 25th and concluded by 7th 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)¹².

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.

¹² Ghana 2010 Census, provisional results

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

	Inclusion Criteria ¹	In the 12 months prior to the survey, facilities with ² :			
		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%

¹Based on HMIS reports

²Based 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 team¹³ 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

¹³ 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

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

BASIC SERVICES	COMPREHENSIVE SERVICES
(1) Administer parenteral antibiotics	Perform signal functions 1-7 plus (8) Perform surgery (e.g.) caesarean section (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)

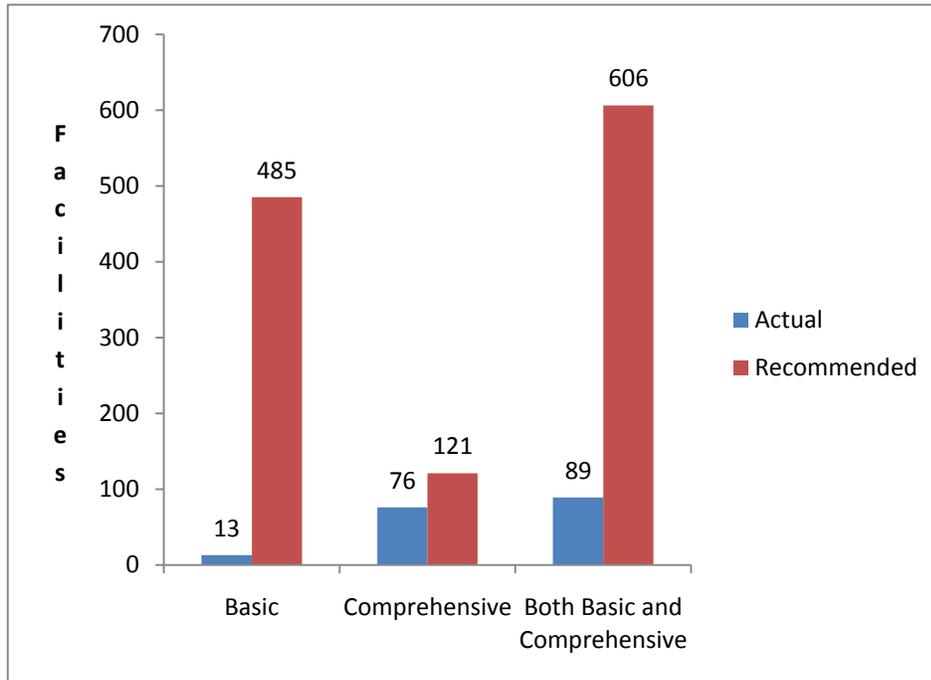


Fig. 3.02: Distribution of EmONC facilities using UN standards (per 500,000 population)

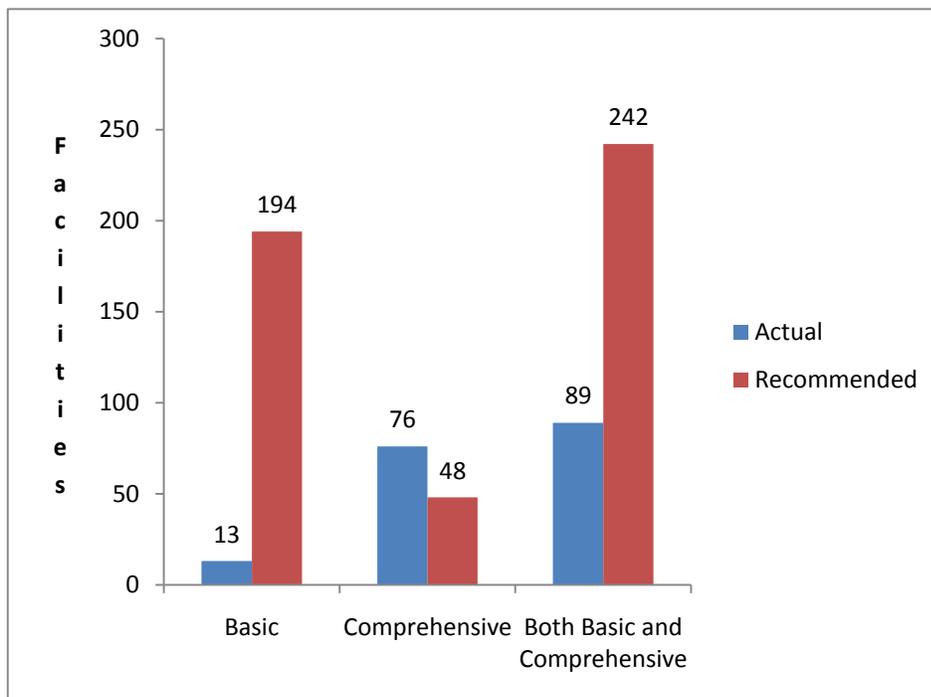


Table 3.02 shows the distribution of facilities by EmONC classification, region, facility type and designation. We find that of all hospitals providing deliveries (i.e. 281), 76 of them were comprehensive (27%), 7 of them were basic (2%), 111 were partial (40%), and 87 (31%) were non-EmONC. For Health 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 ¹				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

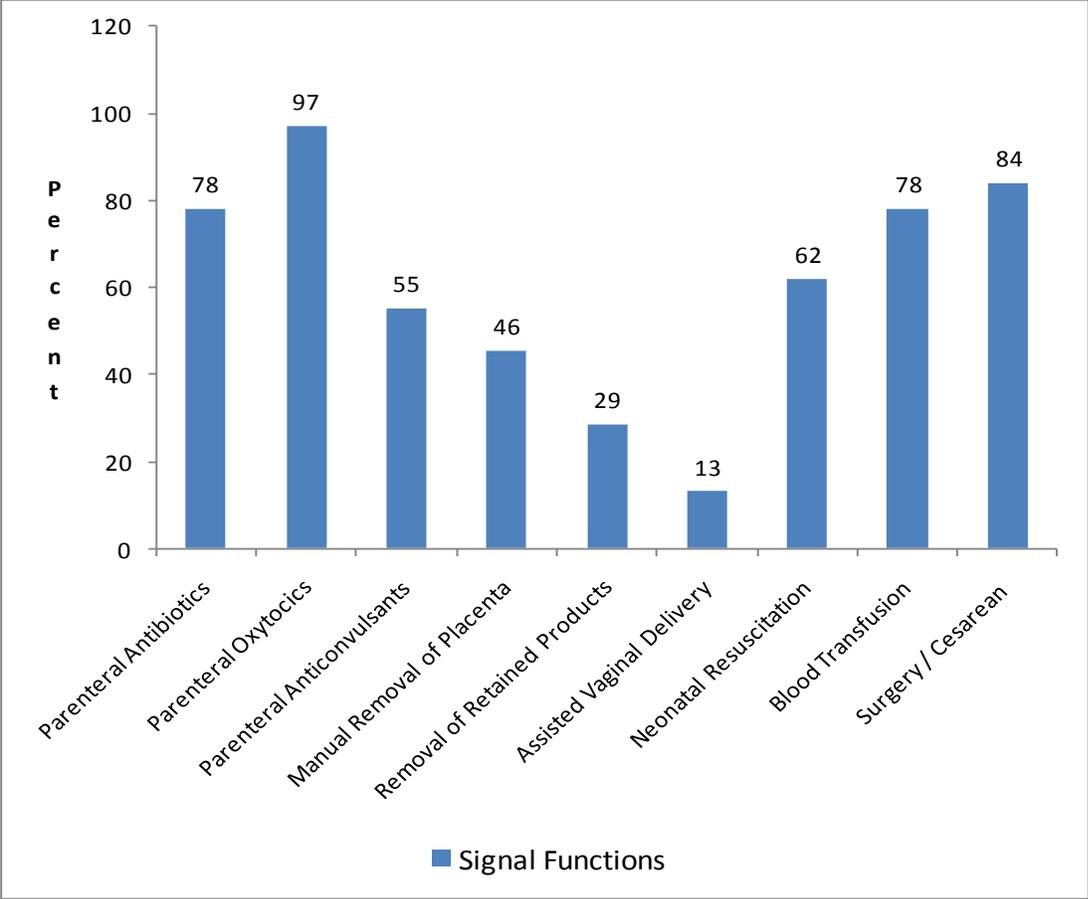
Ashanti	146	47	3	18	214
Brong Ahafo	88	21	1	10	120
Northern	68	29	3	8	108
Upper East	69	13	0	3	85
Upper West	57	6	0	4	67
Type of facility					
Teaching Hospital	0	0	0	3	3
Regional Hospital	0	3	0	6	9
District Hospital	87	108	7	67	269
Health Centre	394	113	2	0	509
Health Clinic	112	23	1	0	136
Maternity 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
¹ 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 functions¹



¹For 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 ¹	Surgery / Caesarean ¹
		%	%	%	%	%	%	%	%	%
National	1159	78	97	55	46	29	13	62	78	84
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
Sector										
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>										
¹ 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					
¹ Urban	695	99	40%	1%	60%
Rural	464	94	34%	2%	64%

¹Row 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 ¹	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 ¹	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

¹Two 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	¹ Dilatation & curettage	¹ 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 ¹							
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 ²	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
Designation							
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>							
¹ Only Hospitals included in the denominator for this column. (Only hospitals are expected to perform either D&C or D&E)							
² 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						
¹ Western	120	9	6	100	0	0
¹ 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
¹ Health Centre	509	16	3	88	0	0
Health Clinic	136	9	7	100	0	0
¹ Maternity Home	164	11	7	82	9	0
CHPS Compound	69	1	1	100	0	0
Urban/rural designation						
¹ Urban	695	132	86	93	4	1
Rural	464	21	14	100	0	0
¹ 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
				%	%	%	%	%	%
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 ¹	221	78	64	18	16	41	10	51	18
Surgery (caesarean) ¹	239	84	46	41	25	38	11	53	11

¹ 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 ¹	Number of expected births (CBR*pop) ²	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 ¹	Expected complications ²	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 ¹	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 ¹	Number of maternal deaths by direct cause ¹	DOCFR ²	Number of women with direct complications ¹	Number of maternal deaths by direct cause ¹	DOCFR ²
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/ eclampsia	3,503	4%	137	16%
Abortion complications (haemorrhage and/or sepsis ¹)	6,062	6%	70	8%
Ectopic pregnancy	2,179	2%	15	2%
Other direct obstetric complications ²	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 ³	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 ¹	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 ²	14,208	107	1%

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

²*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 ¹	Intrapartum + very early neonatal death rate (per 1000 deliveries) ²
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.						
¹ Very early neonatal death was defined as a death occurring within 24 hours after delivery						
² 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 ¹	Intrapartum + very early neonatal death rate (per 1000 deliveries) ²
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.						
¹ Very early neonatal death was defined as a death occurring within 24 hours after delivery						
² 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 ¹	All maternal deaths ²	Percent of all maternal deaths due to indirect cause	Number of maternal deaths due to indirect cause ¹	All maternal deaths ²	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 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 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%

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

²*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

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 1/5th 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

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 hospital¹⁴. 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.

¹⁴ 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									
Teaching Hospital	3	29,064	1,497	597	34	20	20.5	1.2	21.7
Regional Hospital									
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 ¹	emergency care for other patients ²
		%	%
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 ¹		
	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

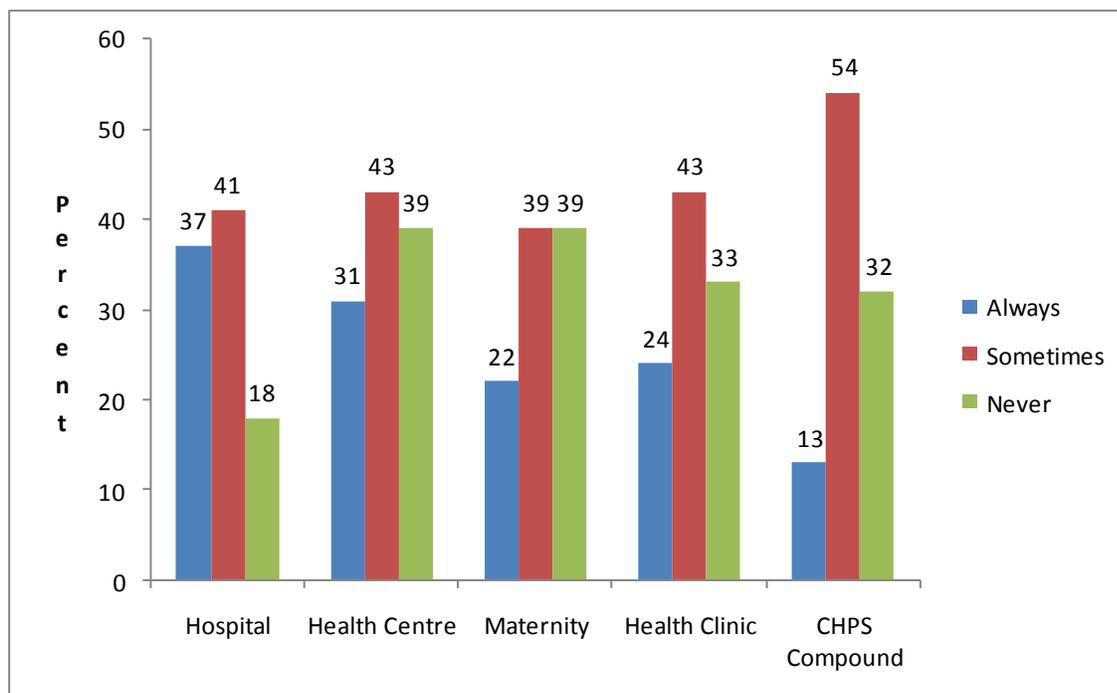
Note: Denominators includes missing responses (<0.5% of all responses). This provides a conservative estimate of availability of communication.

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 coming¹.



¹Don'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
Facility Type						
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
Region						
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 ¹
		%	%	%	%	%	%	%
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 ¹	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 ¹								
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 ¹	Total number of facilities that reported receiving referrals ²
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
¹ 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.			
² 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 guidelines¹ 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

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

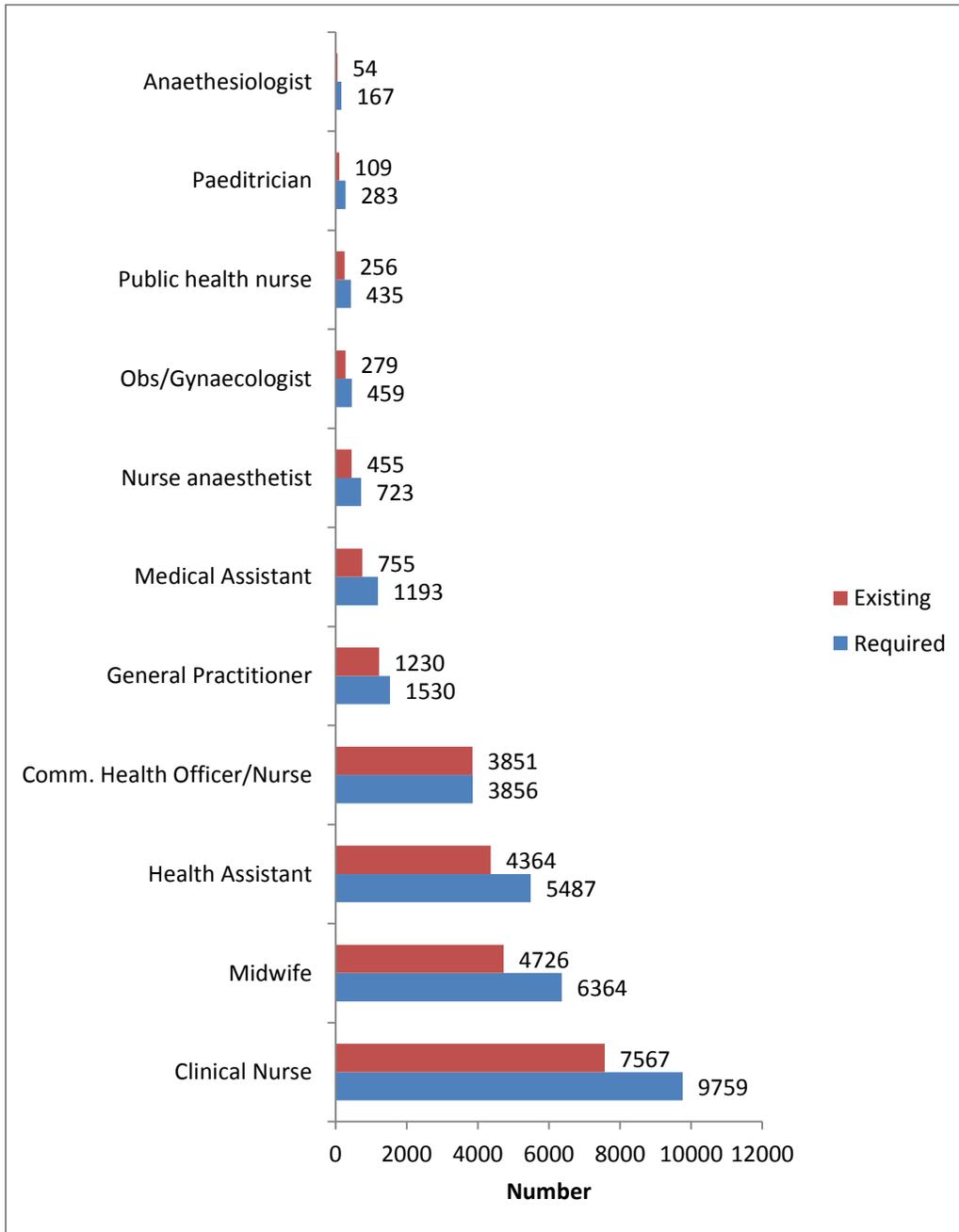
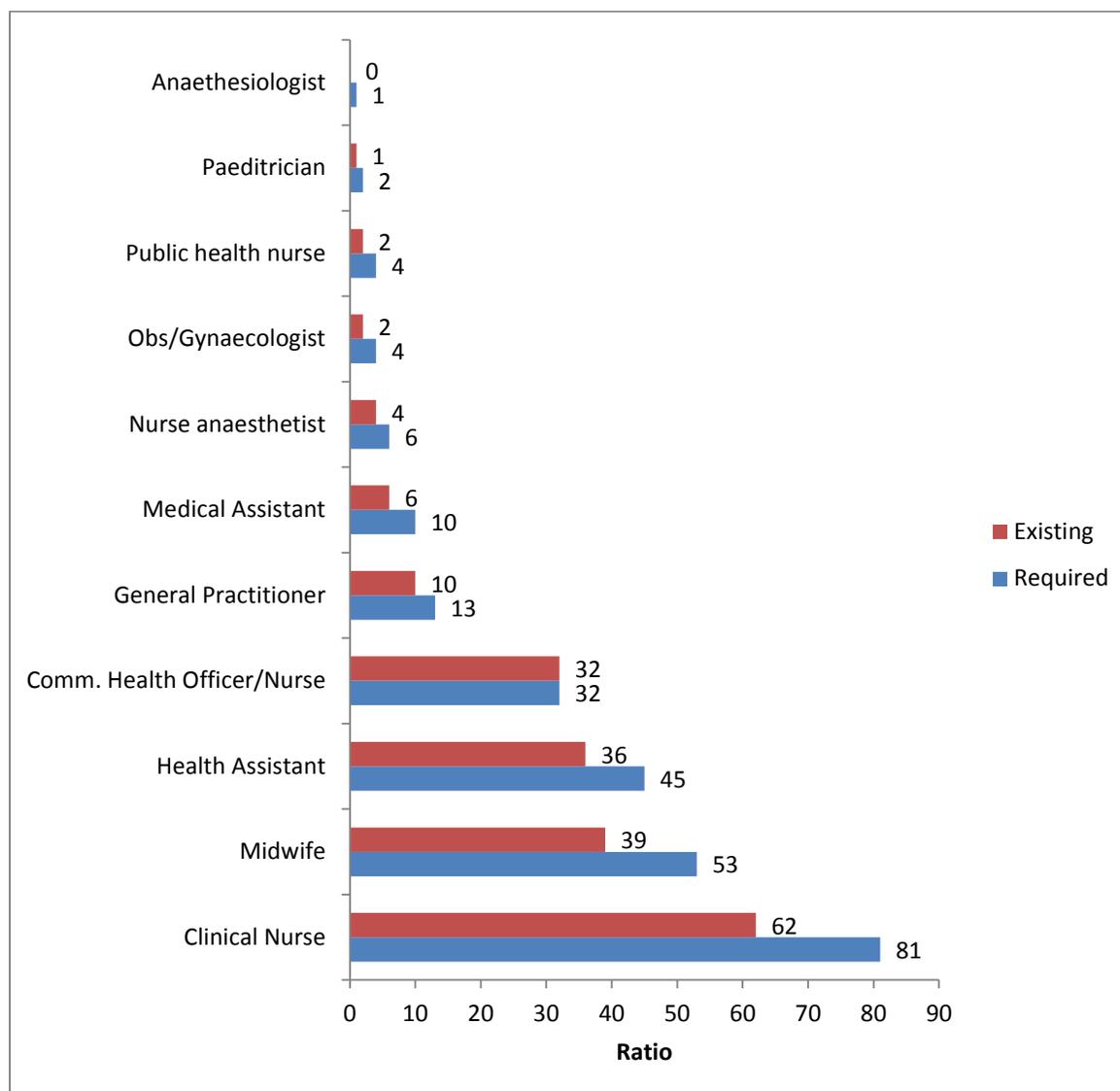


Fig. 6.02: Number of selected health worker cadres currently working in facilities by region per 200,000 population



6.02 Health worker cadres and recent posting

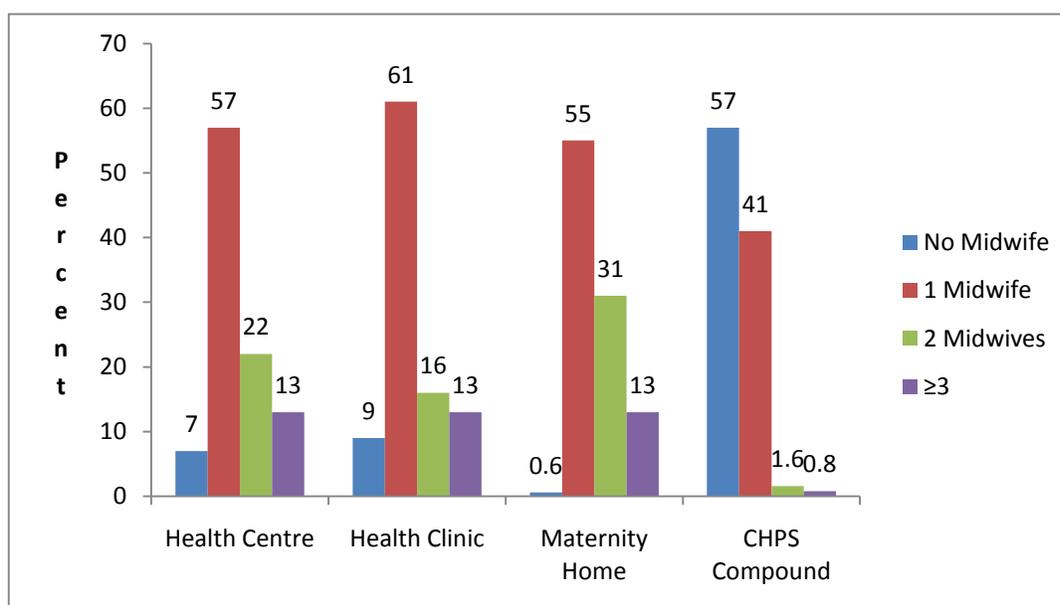
Tables 6.05A, 6.06A and 6.07A in the Appendix show the absolute numbers of health workers by cadre who either left or were posted to the various levels of facility in the 12 months preceding the survey. Nationally, there was an overall net gain among the various cadres with the exception of paediatrician, 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.

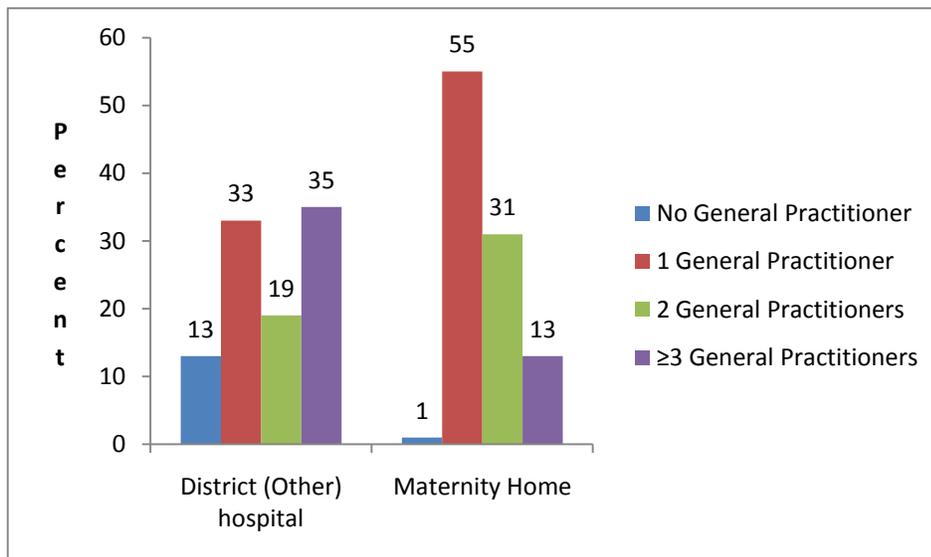
Fig. 6.03: Percent distribution of midwives in Health centres, Health clinics, Maternity homes and CHPS Compounds



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

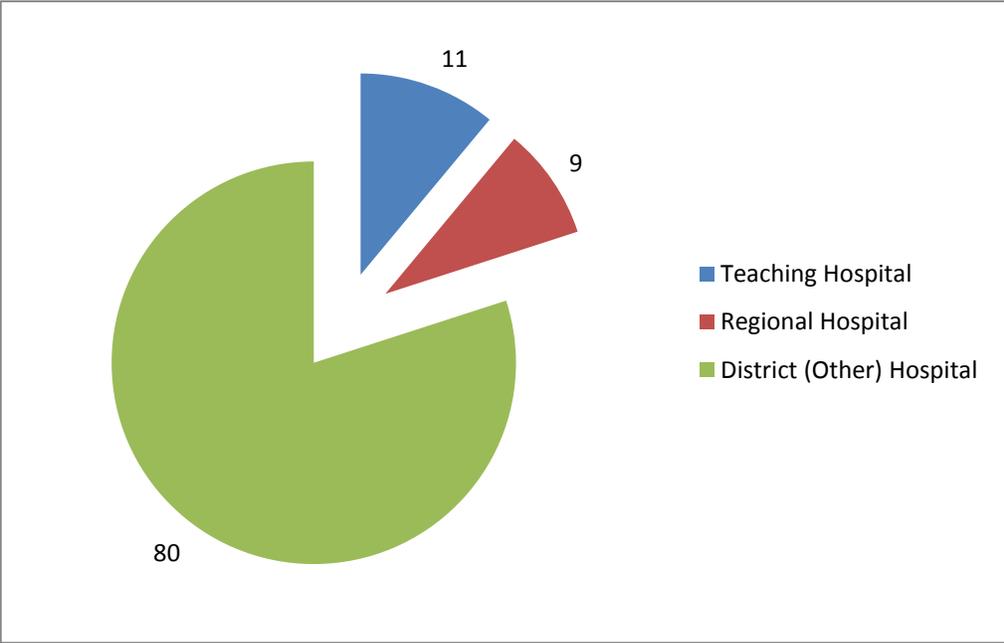
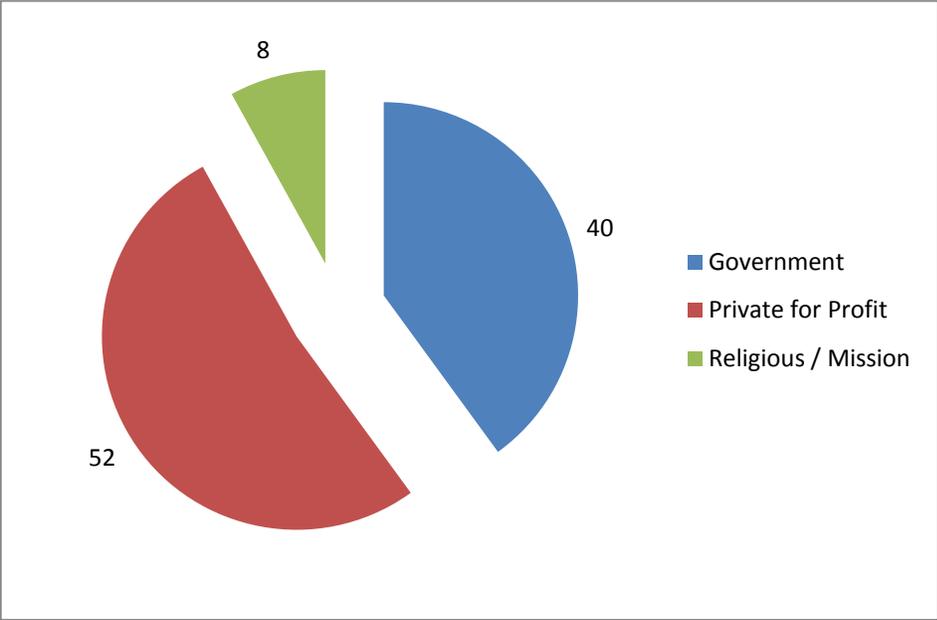


Fig. 6.06: Percentage distribution of obstetrician/gynaecologists working in hospitals by operating agency



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 year¹⁵. 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.

¹⁵ 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 ¹	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
¹ 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 ¹	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>			
¹ . Hospitals include : Teaching , Regional , District/Other			

CHAPTER SEVEN Provider knowledge and competency for maternal and newborn care

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 (n=1119)	Midwife (n=986)	CHN/CHO (n=71)	HA/CN (n=44)	MA/PHN (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 (n=1,119)	Midwife (n=986)	CHN/CHO (n=71)	HA/CN (n=44)	MA/ PHN (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? ¹					
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 (n=1,119)	Midwives (n=986)	CHN/CHO (n=71)	HA/CN (n=44)	MA/ PHN (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 (n=1,003)	Midwives (n=940)	CHN/CHO (n=71)	HA/CN (n=44)	MA/ PHN (n=18)
How to diagnose birth asphyxia ¹					
Average score (out of 4)	2.8	2.9	1.8	1.8	3.0
Preliminary steps of neonatal					

resuscitation ^{1,2}					
Average score (out of 7)	3.9	3.9	2.4	2.7	3.4
If resuscitating with bag & mask, what do you do? ³					
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? ³					
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? ^{2,3}					
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

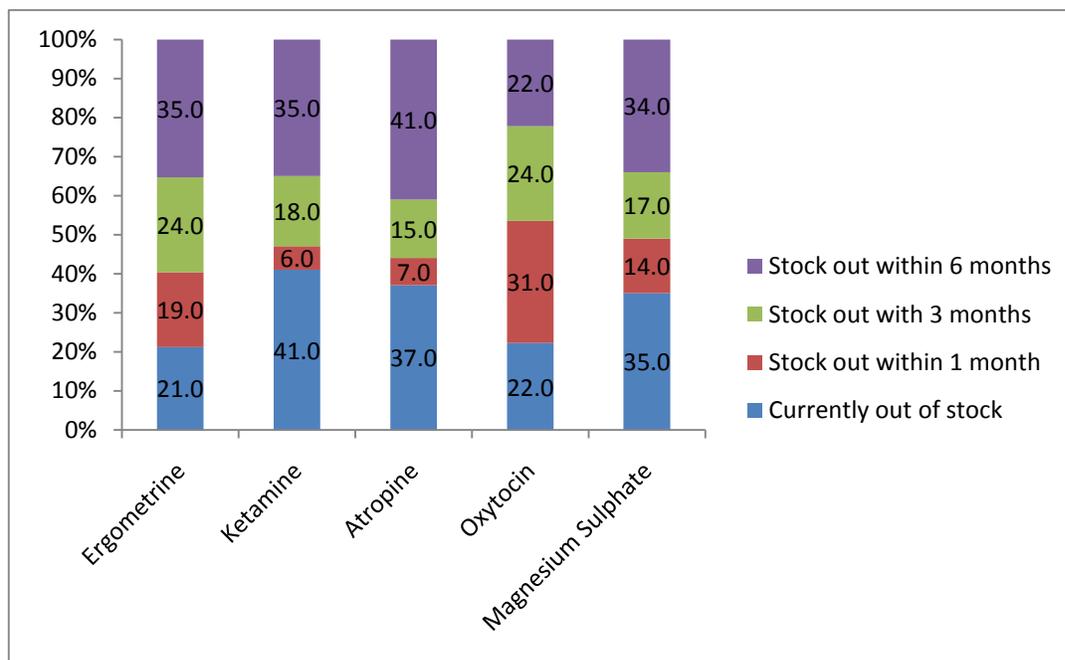
Nationally, 4% of facilities reported stock out of Oxytocin in the last 6 months. Out of these facilities reporting stock outs, 22% were currently experiencing stock outs, 31% experienced stock out in last 1 month, 24% in last 3 months while 22% experienced stock out in last 6 months.

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)
Any contraceptives	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
Any other drugs and supplies								
<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 <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)
	%	%	%	%	%	%	%	%
Basic Items								
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 (<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

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 ³	Hospitals	Health Centers	Maternities
	%	%	%	%
	(n=1154)	(n=280)	(n=508)	(n=164)
Used partograph	73	83	73	67
Of those that used partograph ¹ :	(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 ² :	(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 ⁴	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 ¹ :	(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 ² :	(n=1821)	(n=555)	(n=816)	(n=212)
used augmentation	10	16	7	10
Among those who used augmentation ³ :	(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	%
Age (in years)		
<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
Parity		
0	157	23
1	130	19
2-3	180	26
4-5	62	9
≥ 6	32	5
Unknown	136	20
Residence of woman		
Urban	363	52
Rural	305	44
Unknown	29	4
Referred from another facility		
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 th 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/4th 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
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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).

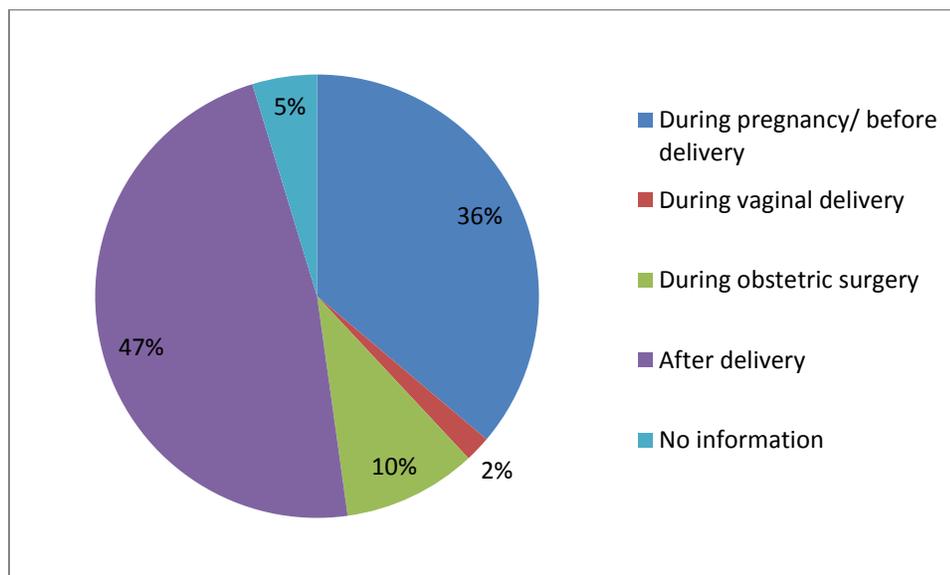
Table 9.08: Numeric and percent distribution of women whose deaths were reviewed according to primary cause of death

	(n=322)	
	n	%
Direct causes ²	210	66
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 ³	12	4
Indirect causes	47	15
Malaria	15	5
HIV/AIDS-related	6	2
Severe anemia	5	2
Hepatitis	2	1
Sickle-cell crises	3	1
Asthma	5	2
Other ⁴	11	3
No cause listed	61	19

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 ¹	(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 ¹	4
Day of the week that woman died ²	
Weekday	76
Weekend	24
Factors contributing to death ³	
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
¹ 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	
	%	%	%	%	%	
Age at death						
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
Sector						
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
Type of facility						
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 ¹	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
¹ 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 ¹	Total number of neonatal deaths reviewed	Cause of death				No info
		Asphyxia	Neonatal sepsis	Preterm/low birth weight	Other	
		n	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 ²	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
¹ Multiple complications possible						
² 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

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

Region	Name
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

Name	
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 ¹	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 ²	Actual	Gap	Recommended ²	Actual	Gap	Recommended ²	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 ¹	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 ²	Actual	Gap	Recommended ²	Actual	Gap	Recommended ²	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 ¹	Basic and Comprehensive EmONC facilities 5 per 200, 000 population			Comprehensive EmONC facilities 1 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 ¹	Basic and Comprehensive EmONC facilities 5 per 500, 000 population			Comprehensive EmONC facilities 1 per 500,000 population		
		Recommended ²	Actual	Gap	Recommended ²	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) ¹				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

¹*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 ¹	52	6	87	166	19	32	77	1	2
Health worker to perform SF ²	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

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

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, MAMPONTENG	NON EmONC	YES	YES	NO	NO	YES	NO	YES	NO	NO
Ashanti	AFRICAN DIASPORA CLINIC AND MATERNITY HOME	PARTIAL EmONC	YES	YES	YES	YES	NO	NO	YES	NO	NO
Ashanti	ST PATRICKS HOSPITAL 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, MOWIRE	NON EmONC	YES	YES	YES	NO	YES	NO	YES	NO	YES
Ashanti	GLADYS MATERNITY HOME, 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 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- ASUOFUA	PARTIAL EmONC	NO	YES	YES	YES	YES	YES	YES	NO	NO
Ashanti	ACHIASE NYAMA MATERNITY HOME	NON EmONC	NO	NO	NO	YES	NO	NO	NO	NO	NO
Ashanti	ANGLICAN HEALTH CENTRE- 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 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

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

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

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

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	SENCHI 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

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

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

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

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

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

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

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

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

	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

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

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

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 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 CENTRE	NON EmONC	YES	YES	NO	YES	NO	NO	YES	NO	NO
Eastern	KWAHU AMANFROM CHPS 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 & 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 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

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 JEJETHI 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

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

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	BRENASE 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

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

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

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

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	AMOAH 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

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

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

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

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

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 (REPRODUCTIVE AND CHILD 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	WORIKAMBO 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 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 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 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 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&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 ¹	Staff use own cell phone for emergency referral	Staff are regularly reimbursed for own airtime used for work	Staff are sometimes 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 0	10 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 ¹
		Total	Total	Total	Total	Total	Total	Total
National	1159	2 31	5 3	9	2	545	461	1301
Facility Type								
Hospital	281	1 62	1 9	0	1	408	44	634
Health Centre	509	4 3	3 0	8	0	92	357	530
Maternity	164	6	0	0	1	18	0	25
Health Clinic	136	1 8	3	1	0	25	19	66
CHPS	69	2	1	0	0	2	41	46
Region								
Western	120	1 3	0	0	0	27	22	62
Central	105	2 4	4	0	0	32	0	60
Greater Accra	138	3 8	3	1	0	102	29	173
Volta	81	2 0	3 2	0	0	53	17	122

Eastern	121	3 0	1	0	0	72	63	166
Ashanti	214	3 9	5	0	0	109	58	211
Brong Ahafo	120	2 3	0	0	2	50	26	101
Northern	108	2 3	8	7	0	49	92	179
Upper East	85	8	0	1	0	26	62	97
Upper West	67	1 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 ¹	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 ²	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 ¹	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 ²	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 ¹	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 ¹	Guidelines				
		Explicit written guidelines used to regulate emergency transport ^{2,3}	Number of facilities with explicit guidelines	Among facilities with guidelines, guidelines produced by ⁴ :		
				Facility	MOH/GHS	Other
		%	n	%	%	%
National	335	49	162	37	49	10
Facility Type ¹						
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 ²	Number of facilities where driver expected to maintain logbook	Among facilities where driver expected to maintain a logbook, percent where driver is to record ^{5,6} :						
			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 ¹									
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 ¹	Driver is always available ²	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 ¹																	
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 ¹	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 ²
		%	%	%
National	335	67	90	94
Facility Type ¹				
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 ¹	Have OT (0 km)	<25 km	25 to 49 km	50+ km	Total number of maternities ¹	Have OT (0 km)	<25 km	25 to 49 km	50+ km	Total number of health centers ¹	Have OT (0 km)	<25 km	25 to 49 km	50 to 74 km	75 to 99 km	100+ km
National	276	2 56	1 8	2	0	116	4	9 5	1 4	3	416	3	2 70	1 05	2 0	9	9
Region																	
Western	25	2 5	0	0	0	6	0	3	2	1	26	0	1 3	1 0	3	0	0
Central	17	1 6	0	1	0	11	0	6	4	1	40	0	2 6	1 3	0	0	1
Greater Accra	66	6 0	5	1	0	16	1	1 4	1	0	12	1	1 1	0	0	0	0
Volta	24	2 4	0	0	0	6	0	5	0	1	36	0	2 5	8	0	2	1
Eastern	22	2 2	0	0	0	11	0	9	2	0	46	0	3 2	1 3	0	1	0
Ashanti	66	5 7	9	0	0	36	2	3 1	3	0	62	0	5 1	9	1	1	0
Brong Ahafo	24	2 4	0	0	0	25	0	2 3	2	0	43	0	3 2	1 0	1	0	0
Northern	19	1 5	4	0	0	3	1	2	0	0	68	0	2 6	2 3	1 1	4	4
Upper East	7	7	0	0	0	1	0	1	0	0	31	1	2 2	6	2	0	0
Upper West	6	6	0	0	0	1	0	1	0	0	52	1	3 2	1 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 ¹	Have OT (0 km)	<25 km	25 to 49 km	50+ km	Total number of CHPS ¹	Have OT (0 km)	<25 km	25 to 49 km	50+ km
National	100	3	7 1	2 1	5	51	0	2 5	2 2	4
Region										
Western	8	0	4	3	1	7	0	1	6	0
Central	13	0	1 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 6	3	1	13	0	8	3	2
Ashanti	23	1	1 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 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 ¹	Have OT (0 min)	<30 min	30 to 59 min	1 hr +	Total number of maternities ¹	Have OT (0 min)	<30 min	30 to 59 min	1 hr +	Total number of health centers ¹	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

¹ 215 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 ¹	Have OT (0 min)	<30 min	30 to 59 min	1 hr +	Total number of CHPS ¹	Have OT (0 min)	<30 min	30 to 59 min	1 hr +
National	98	3	4 8	3 0	1 1	4 9	0	1 4	1 6	1 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 2	5	3	1 3	0	6	5	2
Ashanti	22	1	1 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 1	4	2	1 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 ¹	Receive patients from a private facility ²
		%	%
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 ¹	Obstetric or newborn cases referred OUT of facility		Other cases referred OUT	Number of facilities that receive patients from another facility ⁵	Automatically waives certain costs for pregnant or recently delivered woman or her baby who is referred into the facility ⁶
		Requires transportation / fuel costs are paid before patient transported ²	Requires all fees paid before patient transported ³	Requires transportation / fuel costs paid before patient transported ⁴		%
		%	%	%		%
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 ¹	269	61	15	61	24 4	45
Health Centre	509	81	6	81	21 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 15	78	7	78	34 1	46
Private (for profit)	2 84	62	15	62	10 9	31
NGO	3	33	0	33	1	100
Religious mission	1 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 <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 ¹	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 (<3.5% of all subgroups except in Upper West where 6.5% of facilities did not answer question about fuel.)</i>				
<i>¹Facilities 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 ¹	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 ¹	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 ¹	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 ³			
			Recorded in exclusive register ²	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
Facility Type										
District hospital ¹	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
Region										
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 ¹	Sends feedback about the condition of the patient to the sending facility ²		Required to report on number of patients referred in ³	Maternity patients referred in:		Patients referred in come with a referral form: ⁶		Average number of patients referred in ⁷			
		Always	Sometimes		Recorded in exclusive register ^{4,5}	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 1	65	7 2	2 1	1 9	1 6	52	5.6	3.2	6.9	6.1	
Central	52	3 5	42	8 8	2 1	2 1	3 1	33	7.0	1.2	3.6	4.8	
Greater Accra	59	2 5	46	4 6	1 4	2 4	4 7	36	6.0	1.6	3.6	3.3	
Volta	34	9	30	6 4	4 5	1 5	3 3	45	7.6	1.9	4.7	9.6	
Eastern	61	2 3	56	9 3	2 1	1 3	2 3	40	4.6	1.6	3.9	4.9	
Ashanti	117	1 4	36	7 3	9	1 5	1 6	35	5.0	3.1	4.7	5.4	
Brong Ahafo	43	9	44	6 3	2 1	4 2	2 8	44	8.6	3.4	11. 4	8.5	
Northern	51	2 4	41	7 5	2 7	1 6	2 7	29	3.5	1.3	5.0	4.4	
Upper East	41	2 4	46	7 6	1 0	2 9	3 3	38	4.9	2.2	4.6	4.5	
Upper West	31	6 5	29	9 7	1 9	2 3	5 5	35	5.4	1.0	6.0	4.4	
Facility Type													
Hospital	244	1 6	47	7 6	3 3	2 2	4 0	50	9.9	3.4	8.0	9.0	
Health Centre	218	2 6	43	7 3	8	2 1	2 3	29	2.1	1.2	3.2	3.0	
Maternity	34	2 4	21	6 8	6	9	0	12	2.5	0.1	1.8	1.3	
Health Clinic	37	2 7	46	6 9	5	2 4	1 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

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.

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	677,763	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/ 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/ 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	1	7	1	1	0	9	0	1	1
Paediatrician	1	0	0	0	0	1	1	0	0	0	0	0
General Practitioner	35	3	8	5	38	3	6	3	7	0	1	1
Medical Assistant	294	48	70	22	52	6	11	5	18	2	2	0
Midwife	983	149	174	25	220	32	41	9	291	17	14	-3
Clinical Nurse	617	51	112	61	142	15	28	13	33	0	4	4
Health Assistant	819	91	220	129	289	18	34	16	311	20	32	12
Community Health Officer/Nurse	2,271	301	558	257	328	44	97	53	7	4	1	-3

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	8
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 ¹						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

	¹ 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>				
<i>¹Total 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	%
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 Anesthesiast	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 ¹	Parenteral Drugs ²			Procedures ²									
		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 ¹	Parenteral Drugs ²			Procedures ²									
		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 ¹	Parenteral Drugs ²			Procedures ²										
		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 ¹ (n=281)	Percent of hospitals with cadre present ²	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/MATERNITIES ¹ (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 nities with cadre presen t ²					orn care			ds	ods		other routes	obst etric fistul a	anest hesia	
		%	%	%	%	%	%	%	%	%	%	%	%	%	%
Health worker cadre															
Medical doctor (general practitioner)	4%	1	1	1	0	1	0	1	0	0	0	1	0	0	0
Obstetrician/Gy 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 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 ¹ (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 ²												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 ²	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 ¹	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 been 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 (n=1,093)	Midwives (n=963)	CHN/CHO (n=70)	HA / Clinical nurse (n=44)	MA/ PHN ¹ (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 (n=1,119)	Midwives (n=986)	CHN/CHO (n=71)	HA/Clinical Nurse (n=44)	MA/ PHN (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 ¹					
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 (n=1,119)	Midwives (n=986)	CHN/CHO (n=71)	HA/Clinical Nurse (n=44)	MA/PHN (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? ¹					
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? ²					
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 (n=1,119)	Midwives (n=986)	CHN/CHO (n=71)	HA/Clinical Nurse (n=44)	MA/PHN (n=18)
The last time you delivered a baby, what immediate care did you give the newborn? ¹					
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 ²					
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 (n=1,003)	Midwives (n=940)	CHN/CHO (n=71)	HA/Clinical Nurse (n=44)	MA/PHN (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)
In labour and delivery								
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
In the post-natal ward								
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 <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)
	%	%	%	%	%	%	%	%
Any Antibiotics?	100	100	100	100	99	97	96	99
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
Any Anticonvulsants/Sedatives?	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
Any Antihypertensive?	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
Any Oxytocics or Prostaglandins?	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
Any drugs used in emergencies?	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
Any IV fluids?	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

Any Antimalarials?	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
Any Antiretrovirals?	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
Any Steroids?	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
Any Anesthetics?	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
Any Analgesics?	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

AnyTocolytics?	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 facility¹

	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)
	%	%	%	%	%	%	%	%
Neonatal resuscitation pack								
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
Supplies and equipment needed for newborn								
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
¹ 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)¹

	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)
	%	%	%	%	%	%	%	%
Diagnosis								
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

Supplies								
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
¹ 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 ¹	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 (<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>							
¹ <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 ¹	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)
	%	%	%	%	%	%	%
Anaesthesia equipment							
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
Craniotomy Equipment							
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 (<3% of any subgroup except Health Clinics where 1 facility (or 25% of facilities in the subgroup) did not answer any questions).</i>							
¹ 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 ¹	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
Laboratory supplies							
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 (<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 ¹	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 (<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 area¹, 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 (<3% of any subgroup).</i>								
<i>¹For 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) ¹	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 ²	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 ²	5.5	3.7	6.0	6.7
Cord prolapse ²	5.1	4.9	0.0	6.0
Post term ²	5.7	6.7	4.7	7.0
No information ²	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 (n=697)	Cases in public sector (n=315)	Cases in private sector (n=239)	Cases in religious/ NGO (n=143)
	%	%	%	%
Caesarean wound became infected				
Yes ¹	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 ²	1	1	0	2
Unknown	1	0	2	1
¹ 14 of these women are known to have received antibiotics prophylactically around the time of surgery				
² Causes of maternal death: 1 PPH, 1 acute renal failure, 1 maternal distress/cardiac arrest and 4 with no information on cause of death.				