

**Progress Towards Improved Quality of Reproductive and Child
Health Services in 30 Districts in Ghana**

Midterm Assessment Results

December 2007



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Quality Health Partners is a bilateral assistance project funded by USAID/Ghana and led by EngenderHealth. JHPIEGO and Abt Associates are implementing partners on the project. Technical assistance is also provided by Initiatives, Inc. and Family Health International.



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Acknowledgments

The QHP midterm assessment is one of the primary means by which the project's contributions will be measured. These results are compared to a baseline assessment conducted in 2004 and will be compared to an endline assessment in the final year of the project in 2009.

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Abbreviations / Acronyms

ACT	Artemisinin –based Combination Therapy
BEOC	Basic Emergency Obstetric Care
CEOC	Comprehensive Emergency Obstetric Care
CHN	Community Health Nurse
COPE	Client-oriented, provider efficient (problem-solving methodology)
DHMT	District Health Management Team
FBA	Facility Baseline Assessment (QHP’s Baseline Document)
FP	Family Planning
FS	Facilitative Supervision
GHS	Ghana Health Service
HRD	Human Resource Division (of the Ghana Health Service)
IDSR	Integrated Disease Surveillance and Response
IMCI	Integrated Management of Childhood Illness
IPT	Intermittent Preventive Treatment (Malaria in pregnancy)
LSS	Life Saving Skills (training to improve emergency obstetric care skills)
MA	Medical Assistant
NMCP	National Malaria Control Programme
QAT	Quality Assurance Team
QHP	Quality Health Partners (Project)
RHMT	Regional Health Management Team
UNFPA	United Nations Population Fund
USAID	United States Agency for International Development

Executive Summary

Since the inception of the Quality Health Partners project in June 2004, there have been many improvements in quality in facilities in the 30 target districts. Some of the major accomplishments are;

- An increase in the percentage of facilities having quality assurance teams from 35.1% to 52.1%,
- An increase in the percentage of providers treating malaria appropriately from 1.0% at baseline to 56.7% at midterm,
- Significant increases in assurance of patient confidentiality in all service units,
- Improved provider to patient communication in the treatment of children,
- Increased practice of the active management of the third stage of labor at delivery (including almost universal use of oxytocics), and
- The successful institutionalization of the Integrated Disease Surveillance and Response model for disease surveillance.

The Quality Health Partners (QHP) project, managed by EngenderHealth is one of four bi-lateral assistance projects charged with working to improve the health of Ghanaians. QHP's mandate is to work with health facilities to improve quality in the area of reproductive and child health. QHP does this through a strong collaboration with the Ministry of Health / Ghana Health Service in providing training, provision of equipment and supplies, through facilitative supervision and by supporting the development, dissemination and implementation of standards and guidelines. QHP works in nearly 200 facilities in 30 target districts located in the southern region of Ghana.

The results presented in this report are from the baseline assessment, conducted in December 2004, monitoring data collected in December 2006 and the midterm assessment which concluded in September 2007. They are results from a census of all target facilities, using instruments that examined the status of services in the facilities, observations of providers and also collected information from the Regional and District health management teams.

Human Resources

In the first three years of the project, QHP expended a lot of effort to develop or finalize and disseminate existing human resource policies (such as the in-service training policy) and to develop new tools to evaluate provider performance (which will be rolled out in seven demonstration districts in early 2008). Another key policy that was developed with QHP support was the *Human Resources Policies and Strategies for 2007-2011* document which was completed and launched in early 2008.

Since the inception of the project, QHP has supported and trained more than 6,000 healthcare providers and between 55.4 – 70.1% of providers interviewed reported having attended in-service training within the past three years (in-line with the GHS standard). Through monitoring visits and encouragement at the facility level – the number of providers holding a copy of their own job description has increased significantly, although it remains low at less than 30%. Another important finding of the midterm assessment which impacts QHP's ability to achieve success is that the number of medical assistants and midwives (key providers of community level care) has dropped since the baseline in the target districts.

Quality Assurance

There have been significant gains in the areas of quality assurance and facilitative supervision. The percentage of facilities having a quality assurance team increased from 35.1% at baseline to 52.1% at midterm. There have also been significant gains in the variety of quality assurance tools that providers and supervisors are using to assess the quality of their work. Most hospitals and overall more than one-third of facilities have undertaken a COPE© (Client Oriented Provider Efficient services) exercise as a way to improve quality. However, more work remains to be done to improve the action orientation of these teams.

Facilities are also reporting regular external supervision almost universally (94.3%) and a wide range of supervisory activities. More work remains to be done on improving the availability and knowledge of the new National Referral Guidelines, although use of the standard referral note in 71.3% of delivery units and with 70.8% of child health providers, was quite high.

Systemically, one way to measure quality is to look at the measures for infection prevention. While provider knowledge of the correct procedures for processing instruments was quite high, the overall composite score for infection prevention, when assessing *all* areas in the facility was low. Despite this, in some service delivery units there have been significant gains.

Child Health

All areas in child health have seen significant gains, perhaps because 59.5% of facilities have a trained IMCI provider actually delivering services and now 80.9% of facilities have the key child health reference – the IMCI chart booklet. Providers are now assessing all of the danger signs in children more often (11.1% at baseline and 50.7% at midterm), increasingly performing physical examinations on sick children and providing better advice to the caregiver on how to manage their child's symptoms. One of the most significant gains has been an improvement in the correct management of diarrhea up from 18.4% at baseline to 70.0% at midterm.

Malaria

The National Malaria Control Programme introduced an Artemisinin-based combination therapy (ACT) as the first line of treatment for malaria in December 2004. In the target facilities at midterm there was nearly universal reported use of this new regimen (96.7%). There was a problem with providers not knowing the correct dosage, due to a widely distributed job aid that does not emphasize the milligram/kilogram dosage, but at midterm more than 50% of prescribers knew the correct dosage. Perhaps most impressively – the percentage of providers treating fever and malaria appropriately increased from 1.0% at baseline to 56.7% at midterm.

Family Planning

Family planning has had the most challenges to improvement since the inception of the project. Couple Years Protection (CYP) in the districts declined steadily in 2006, with the loss of trained trainers and providers, and lack of FP promotion, both at the facility and wider levels, as likely contributing factors. CYP in target districts appears to be rebounding slightly in early 2007. Facilities especially in the target districts in Ashanti, Central and Western Regions often suffered stock-outs of some family planning commodities. On a more positive note, providers are well versed in providing comprehensive information about family planning and saw some significant

improvements in infection prevention practices. Family planning equipment readiness also improved after an equipment procurement and distribution exercise by QHP.

Basic and Comprehensive Emergency Obstetric Care

Although QHP is not specifically trying to prepare target facilities to be BEOC or CEOC ready, their readiness affects the quality of care that clients receive and sets the stage for understanding gains related to maternal and neonatal health. The midterm assessment found that very few health centres (13.4%) meet all the criteria for BEOC, however there have been remarkable strides towards improving the availability of key drugs in the delivery units and this is a significant increase over baseline. A little over half (51.4%) of hospitals meet all of the criteria for CEOC. The main constraints for hospitals to achieve this measure were having qualified staff to perform a manual removal of a placenta and/or a vacuum extraction. These areas are in need of more attention in future programming.

Ante-Natal Care

Ante-natal care has had significant improvements in patient privacy and this has in turn contributed to the overall improvement in the quality of care in general. At midterm 84.3% of facilities overall reported that they are implementing a focused-ANC approach and more than 90% of health centres are using this method. There were few shortages of iron and folic acid in the facilities, but shortages of sulfadoxine/pyrimethamine (SP) in one out of five facilities has the potential to negatively impact the intermittent preventive treatment program to prevent malaria in pregnancy. Indeed the percentage of women who received three doses of SP in the first quarter of 2007 was very low (12.0%). Supervision of ANC are was strong and improved significantly since December 2006. Additionally, three-quarters of ANC providers (75.5%) had in-service training in the past 3 years, in line with GHS policy.

Delivery and Neonatal Care

Best practices are being widely adopted in the delivery units in the target facilities. For example, there is good (and improving) knowledge of the active management of the third stage of labor – especially use of oxytocic drugs among midwives. Patient privacy has improved significantly since baseline and infection prevention practices are also much stronger. The best practice of having emergency trays ready, with key drugs, supplies and equipment, is being implemented in more than 50% of facilities and the availability of magnesium sulfate has increased significantly. Supervision occurred in more than half of delivery units in the past six months, with some strong Regional variation. One area that needs reinforcement and improvement is in the consistent use of the partograph.

Overall – provider knowledge of neonatal care is improving and there has been a significant increase in the percentage of providers who routinely report providing all essential newborn care services. Facilities also seem to be prioritizing the procurement or reorganization of basic newborn equipment as its availability has improved since baseline.

Integrated Disease Surveillance and Response (IDSR)

The institutionalization of the IDSR program in facilities has been highly successful. This is evidenced by increased use of data for decision making, increased availability of standards and guidelines related to IDSR and relatively high rates of weekly and monthly reporting of notifiable

diseases. In all districts that reported a suspected outbreak of a disease in the past 12 months, all outbreaks were investigated and reports documenting the outbreak were also written.

Conclusion

There has been a great deal of progress towards improving the quality of reproductive and child health in the 30 target districts. The challenge now will be to continue to improve the quality of supervision and training – to make it more skill based for providers to improve the quality of the care they provide, which is one of the key recommendations presented at the end of this report. At the same time, supervisors must become more engaged in the quality of the services those they supervise are providing. There is still room for improvement especially in increasing the quality of services, specifically in family planning and infection prevention.

Quality improvement is a continuous process and QHP in cooperation with the Ghana Health Service is well on the way to institutionalizing a “culture of quality” in the target districts and facilities. Indeed, there are numerous testimonies from the nearly 6,000 GHS staff who feel better prepared to deliver high quality services as a result of their participation in QHP supported activities.

Background

The Quality Health Partners (QHP) project is one of four bilateral projects contributing to USAID/Ghana's Strategic Objective Seven: Improved Health Status for Ghanaians. The other USAID/Ghana bilateral health projects are the Community-based Health Planning and Services-Technical Assistance Project (CHPS-TA), the Ghana Sustainable Change Project (GSCP) and the Strengthening HIV/AIDS Response Partnerships (SHARP) Project.

QHP began in June 2004 and continues through May 2009. QHP focuses on improving the quality of and equitable access to a package of reproductive and child health (RCH) services in health facilities in 30 of the most deprived Districts of the country's seven southern Regions, as well as in other key health facilities in the country, including seven Regional hospitals. The RCH service package includes Safe Motherhood (antenatal and postnatal care, safe delivery and essential newborn care), Family Planning, Child Health/Integrated Management of Childhood Illness (IMCI), malaria prevention and treatment. An additional area of focus for QHP is Integrated Disease Surveillance and Response (IDSR). In high HIV prevalence areas, a package of services to improve the quality of anti-retroviral therapy, to reduce stigmatization related to HIV and AIDS in the facility and other key interventions is also provided.

Four program goals were initially defined to guide QHP work with Ghanaian institutions:

1. Strengthened institutional capacity of the GHS to provide high quality health services using approved standards and guidelines
2. Improved systems for human resource capacity development
3. Improved supervision, monitoring, problem-identification/solving and communication skills
4. Raised standard of quality in private and public health facilities and development of a franchising approach

During the second half of the third year (January to June 2007), QHP transitioned to four modified goals that are listed below:

1. Strengthened policies and systems to ensure comprehensive delivery of quality services in the public and private sector
2. Improved quality of care and services at regional and district level and below
3. Strong and effective platform for monitoring and evaluation of the SO7 Elements and sub-elements through quality data collection and analysis
4. Improved quality of care for HIV patients in high prevalence areas

The modified goals reflect: a) an evolution of the QHP project, with most Human Resource policy and other national level work having been completed before or during the third year; b) a new role for QHP as the coordinating partner for SO7 (non-HIV) data collection and reporting; and c) an expanded portfolio of HIV and AIDS activities under the Get HIP! Initiative.

Table 1 QHP Target Districts and Population

District	Population 2006
Ahafo Ano South	163,318
Amasie West	132,881
Bosomtwi-Kwanwoma	178,468
Ashanti Region Total	474,667
Asutifi	97,977
Sene	95,287
Brong Ahafo Region Total	193,264
Abura Asebu Kwanankese	102,058
Agona	180,065
Ajumako Enyam Essiam	104,178
Asikuma Odoben Brakwa	101,267
Assin North	119,128
Assin South	100,918
Awutu Efutu Senya	192,545
Cape Coast	133,791
Gomoa	220,661
Komenda Edina Eguafo Abirem	127,369
Mfantsiman	173005
Twifo Heman Lower Denkyira	122436
Upper Denkyira	120319
Central Region Total	1,797,740
Afram Plains	147,753
Birim North	134,203
Eastern Region Total	281,956
Dangbe West	125,348
Greater Accra Region Total	125,348
Akatsi	104,652
Kadjebi	58,215
Nkwanta	169,366
North Tongu	145,909
South Tongu	72,560
Volta Region Total	550,702
Ahanta West	114,932
Bibiani Anhwiaso Bekwai	124,736
Juaboso	202,885
Bia	168,844
Western Region Total	611,397
Total Population in 30 Target Districts	4,035,074

QHP works in approximately 200 facilities in 30 target districts in the seven southern Regions of Ghana. These districts were selected by the MOH/GHS and USAID on the basis of being among the most deprived and remote districts in the country. The project works in three districts in Ashanti Region, two districts in Brong Ahafo, all districts in Central Region (13), two districts in Eastern Region, one district in the Greater Accra Region, five districts in the Volta Region and four districts in Western Region. The project's emphasis is on public sector facilities at the health center level and above.

Overall the project supports better quality health care for an estimated 4 million people, which is about one-fifth of Ghana's overall total population. But many of the initiatives of the QHP project reach beyond the 30 target districts and support building capacity at the Regional level, which has an impact throughout the Region and not only in the target districts. In addition, some aspects of the QHP project (specifically the HIV component and the Other Public Health Threats [guinea worm eradication] component) are largely outside the 30 districts. These areas also benefit from QHP's approach and methodology.

A special focus for QHP is Central Region, because the project covers the entire Region and is supporting better quality health care for almost 1.8 million people.

Figure 1 – QHP’s Pathways to Quality



Following from previous USAID-supported work in performance improvement (notably through EngenderHealth, the PRIME and PRIME II projects¹ and JHPIEGO’s work²) and taking the Ghanaian context into consideration, QHP’s method to achieve quality involves support for four types of activities. A key activity has been helping to review, develop and implement standards and guidelines, both clinical and for human resources planning and management. A second major area of QHP’s work is training for providers and managers. This training has taken the form of clinical training as well as training in “cross-cutting” topics like quality assurance, facilitative supervision and infection prevention. The third major area of QHP’s work has been support for supervision at the facility level and the provision of technical assistance at the facility level and at higher levels to get a new initiative off the ground. The final area of QHP’s work has been in the provision of equipment and supplies, some of which are

supplied by QHP, with others leveraged from other sources. QHP has also used staff expertise to ensure that existing equipment and supplies are more rationally organized within a health care facility. These pathways to quality are shown graphically in Figure 1.

As part of QHP’s Performance Management and Evaluation Plan (PMP) and to better understand the project’s progress towards improved quality of services, a midterm assessment tool was developed based on the instruments used for the 2004 Facility Baseline Assessment and for a program monitoring activity in 2006, to collect information on changes in the quality of services at the facility level. These midterm data were collected between June and August 2007. The results of the midterm assessment visits made to each of the target facilities in the QHP catchment area are presented in this report, and most data are compared with baseline results for the same items.

Methodology and Sampling for the Assessments

Results from the following instruments used during the facility baseline assessment, monitoring and midterm assessments are presented in this report.

1. Facility audit – review of management practices, provider knowledge, availability of equipment and supplies.
2. Provider observation – Observation of providers giving treatment to children presenting with fever or diarrhea.
3. RHMT/DHMT interviews – Interviews with the Regional and District Health Management teams to review management practices and uses of data.

In December 2004, QHP and GHS conducted a census baseline survey in 171 facilities³. At that time all Regional hospitals in the country (n=10) some high volume facilities (n=6) and referral facilities outside the target districts (n=3) were also included in the dataset. Two and a half years later, the target facilities in the seven southern regions and 30 target districts have been better

defined. Target facilities for the midterm assessment included the seven Regional hospitals, 30 district and mission hospitals and 156 GHS health centres in the 30 districts⁴.

In December of 2006, routine monitoring data were collected in a census of the target facilities. Some of these results are also presented here, especially where a new indicator or measurement method was introduced. In order to compare the results at baseline with those in 2006 and 2007, the baseline dataset was edited to exclude all “non-focus” facilities. In the edited baseline dataset there are now data for a total of 157 facilities. In the December 2006 monitoring results, there are data for a total of 176 facilities. In the midterm assessment which was also a census – data for the facility audit instrument was collected for 193 facilities (Table 2). Although different numbers of facilities were sampled in each of these datasets, the proportion of facilities sampled overall remains the same and there were no statistically significant differences between the types of facilities sampled or the Regions from which they were sampled.

Table 2 Number of Facilities in the December 2004 Facility Baseline (edited), Monitoring Dataset and the Midterm Assessment – Facility Audit

Number of facilities included in the dataset by type and Region*			
	Baseline Dec 04	Monitoring Dec 06	Midterm Sep 07
Type of Facility			
Regional Hospitals	7	4	7
District/Mission/ Hospitals	28	31	30
Health Centres/Other	122	141	156
Region			
Ashanti	19	21	23
Brong Ahafo	8	11	12
Central	60	72	72
Eastern	11	9	10
Greater Accra	5	5	6
Volta	32	37	41
Western	22	21	29
Totals	157	176	193

*No statistically significant difference between the types of facilities sampled and the numbers sampled in the Regions in any time period.

In addition to completing a general facility audit in the target health centres and hospitals, an assessment of provider practice of treatment of children under five (focusing on malaria and diarrhea) was conducted. At baseline between 2 and 5 observations were conducted at each facility (some with the same provider, some with different providers). At midterm the main provider who treats children under five was targeted for observation (to reduce time and expenses in the field). A total of 421 observations were made at target facilities at baseline in the matched dataset and 145 observations were made at midterm. Details about these observations can be found in the Child Health section of this report.

Interviews with the RHMT and DHMTs were added when the monitoring system was launched in 2006. During the first round of monitoring 32 (of 37) districts and regions were interviewed. At midterm 36 of 37 districts and regions were interviewed.

The data in this report are presented in Table and Figures. More detailed analyses (especially of the figures), showing variation by Region and type of facility are supplied in the Appendix.

Limitations in the Data

There are a few limitations in these data. The first is that while in many of the tables the name of an entire Region is presented – these data are only representative at the Regional level of the facilities in Central Region. In all other Regions, QHP only works in a limited number of districts and these data are not representative of the whole Region.

Many of the questions in this report focus on provider knowledge, rather than the gold standard of “practice.” Thus, some of the findings reflect provider knowledge of what they “should be doing,” which could vary from their actual practice. To the extent possible, statements are cross-checked with evidence at the facility, but this was not always possible.

Results

Human Resources

Number and mix of staff. A direct comparison of 144 facilities sampled both at baseline and at midterm was conducted and it was found that there have been increases in the numbers of doctors, nurses and public health nurses in target facilities. There has also been a modest increase in the numbers of community health nurses and enrolled nurses in the target facilities. However, both the numbers of medical assistants and midwives – both key prescribers and service providers at the community (health centre) level are declining. In the almost three years since baseline – their numbers have declined between 10.6 and 11.1% (Table 3), even as the population in the target area overall has increased 6.5%. The declining numbers of midwives is of special concern, because this means that women will have less access to attended delivery, especially at the health centre level. While gains in the number of doctors, nurses and public health nurses are impressive – they are more likely to benefit an urban⁵ population as these cadres are most often posted to district and Regional hospitals.

Table 3 Total Number of Trained Staff in Districts and Facilities Surveyed

	Doctor		Medical Assistant		SRN		PHN		Midwife or Nurse Midwife		Community Health Nurse/ Enrolled Nurse	
	Base-line	Mid-term	Base-line	Mid-term	Base-line	Mid-term	Base-line	Mid-term	Base-line	Mid-term	Base-line	Mid-term
Regional Hospital	169	251	11	4	369	324	12	11	290	275	262	180
District/Other Hospitals	56	6	27	27	190	375	12	17	282	236	208	223
Health Centres /Other	3	2	61	56	20	18	7	14	166	147	272	361
Totals	228	324	99	87	579	717	31	42	738	658	742	764
% increase or (decrease)	29.3		(11.1)		19.2		26.2		(10.6)		3.5	

The MOH and GHS are pursuing a number of measures to increase intake and output of training schools, and retention of all categories of health workers. With USAID funding, QHP provided vital technical and financial support for the preparation of the *MOH Human Resource Policies and Strategies for the Health Sector, 2007-2011*. This document reports, “The last five years has seen the establishment of the Ghana College of Physicians and Surgeons and five general nursing schools. New programs have been introduced for direct entry into midwifery and health assistant (clinical) courses as well as a diploma in community health nursing. The MOH has established a total of 21 training institutions and programs over the last five years, some in new health training institutions and others in previously existing institutions. CHAG and the private sector together have opened seven new schools in general nursing and health assistants (clinical).”⁶

Through these institutions there has been a 50% increase in admissions into health training institutions, however the increased intake is greatly straining the capacity of the institutions to meet national requirements for training. In addition, the MOH Policies and Strategies document notes

that “there has been stagnation in the medical assistants’ program . . . and there is a “clear indication that the current medical assistants’ program is not attractive to nurses.”

MOH projections of staff supply for the next five years, show the number of diploma midwives increasing from 140 to 763 per year; post basic midwives increasing from 60 to 181 per year; diploma medical assistants from 0 (new program) to 81 per year; and post basic medical assistants increasing from 41 to 123 per year.

In the facilities for which QHP has baseline and midterm data on staffing levels the actual number of medical assistants and midwives have decreased. In *all* facilities – the percentage of facilities with a medical assistant has also declined. However the percentage of facilities with a midwife has remained the same.

In unmatched results that directly compare the percentage of facilities that have at least one of each type of provider, the percentage of health centres that have a medical assistant in the target area has declined since baseline in 2004. Positively, the percentage of health centres with a midwife has increased, although it would appear that these women are increasingly working on their own in health centres as their numbers overall have declined (Table 4). At baseline the median observation for the number of midwives in a health centre was two. At midterm the median observation for midwives at health centres is one. Less than half (41.6%) of health centres had a medical assistant assigned, which indicates a serious problem with the quality of medical care at the lowest levels.

Table 4 Percentage of Facilities with Key Staff by Type of Facility

	Doctor		Medical Assistant		Nurse (SRN or Public Health Nurse)		Midwife or Nurse Midwife		Community Health Nurse/ Enrolled Nurse	
	Base-line	Mid-term	Base-line	Mid-term	Base-line	Mid-term	Base-line	Mid-term	Base-line	Mid-term
Regional Hospital	100.0	100.0	70.0	28.6	100.0	100.0	100.0	100.0	100.0	100.0
District/ Other Hospitals	89.7	100.0	82.1	70.0	92.3	96.7	94.9	96.7	84.6	100.0*
Health Centres /Other	2.5	3.3	50.0	41.6	9.0	14.9	82.0	83.1	85.2	93.7
Totals	28.1 (n=156)	22.1 (n=190)	58.5 (n=156)	45.5 (n=191)	33.3 (n=156)	30.5 (n=190)	86.0 (n=156)	85.9 (n=190)	86.0 (n=156)	93.2 (n=191)

*One district/mission hospital at midterm reported they did not have a CHN or EN.

Job descriptions. A key component of quality in evaluating provider performance is that each staff member in a health care facility should have a copy of their job description (that they hold). Through individual monitoring visits, COPE activities and training events, QHP has been encouraging managers to make job descriptions available to each person. This indicator was not measured at baseline, but was captured during the monitoring data collection exercise. Between December 2006 and September 2007 – there was a statistically significant increase in the percentage of facilities reporting that all staff had a copy of their job description – although the overall proportion remains less than 30% (Table 5).

Table 5 Providers having Job Descriptions (Monitoring data – December 2006 and Midterm Assessment – September 2007)

% of facilities where all staff have a JD (that they hold)		
Type of Facility		
	Monitoring	Midterm
Regional Hospitals	50.0	57.1
District Hospitals	23.3	34.5
Health Centres	8.3	26.8
Region		
Ashanti	23.8	30.4
BAR	10.0	18.2
Central	11.4	43.1
Eastern	33.3	80.0
GAR	0.0	33.3
Volta	8.1	4.9
Western	0.0	11.5
Totals	12.0 (n=167)	29.1 (n=189)
p value	.0064	

Performance appraisal. QHP has been working with GHS to improve provider accountability and performance in the workplace. One way this is being accomplished is by assisting the Human Resource Division (HRD) of the Ghana Health Service to revise and implement an improved performance evaluation system for all GHS employees. The numbers of staff who report having been appraised and quality of these appraisals are being monitored in more detail as the revised performance evaluation system is scaled up in selected districts.

Regional and District Management Teams interviewed reported that 80.6 % of their offices have budgeted for staff performance appraisal activities. During the midterm assessment 28.6% of supervisors said at least half the staff at their facility/unit had received an annual performance appraisal during the past year. Staff appraisal measured at midterm was based on the old appraisal system –which is most commonly used when a staff member is eligible for promotion rather than on a routine annual basis as prescribed. Quality performance appraisals are still an area that needs attention.

In-service training. Another measure of quality is the availability of continuing medical education for health care providers. The Ghana Health Service has committed to providing in-service training to its employees at least once every three years as part of its In-Service Training Policy⁷. QHP measured the percentage of providers by service delivery area who reported having in-service training during the past three year period (Table 6). Between 55.4 – 70.1% of providers interviewed reported having attended in-service training within the past three years. These low achievement figures may be related to issues with equitable selection of participants for in-service training, which is often a complaint of GHS staff, combined with insufficient focus on providing in-service training for all staff within a service delivery unit and possibly a lack of resources to carry out all desired in-service training.

Table 6 In-Service training of providers in the last three years (September 2007)

% of providers who report in-service training by topic					
	Child Health	Family Planning	Ante-Natal Care	Delivery	Neo-Natal Health
Type of Facility					
Regional Hospitals	66.7	50.0	85.7	66.7	71.4
District Hospitals	67.9	59.1	84.6	72.4	63.0
Health Centres	56.4	55.0	73.0	69.7	56.9
Region					
Ashanti	57.1	73.7	75.0	61.1	44.4
BAR	45.5	27.3	81.8	80.0	80.0
Central	70.6	69.6	82.1	86.4	61.7
Eastern	44.4	90.0	100.0	87.5	100.0
GAR	100.0	33.3	83.3	83.3	83.3
Volta	51.3	8.3	53.8	37.0	44.4
Western	40.7	73.1	69.2	54.5	47.6
Totals	58.3 (n=180)	55.4 (n=177)	75.5 (n=155)	70.1 (n=157)	58.7 (n=150)

The GHS standard for in-service training is once in three years. During the monitoring data collection exercise (Table A in the Appendix) service providers were asked about their training during the last 12 months, which shows an even better commitment to quality improvement than the every three year standard. In December 2006, between 25.8-62.5% of providers interviewed on the day of monitoring indicate they have attended in-service training in the last 12 months. This is indicative of fairly good coverage, but the numbers in Child Health (25.8%), Family Planning (31.0%) and Neo-Natal Health (34.5%) could be improved. Topics related to HIV had the highest levels of training in the last year.

Human Resources – Key Findings

- The number of medical assistants and midwives (key providers of community level care) is dropping in the target Districts.
- Through monitoring visits and encouragement at the facility level – the number of providers holding a copy of their own job description has increased significantly.
- More than 50% of all staff in key service delivery areas report in-service training in their field within the last three years – in line with GHS policy.

Quality Assurance

Quality Assurance Teams. In the first two years of the project, nine districts were trained in Quality Assurance techniques using a “whole district” approach, while in Volta region, a “whole region” approach was adopted. In 2007-2008 the remaining 16 districts will be trained using the whole district approach.

The total number of facilities that had a Quality Assurance (QA) Team at baseline was 54. By the time of the midterm analysis 99 facilities had a functioning QA team, a significant increase ($p=.0016$). Quality assurance teams continue to have strong representation in hospitals. In late 2006, quality assurance training for the sub-district (health centre level) was started, which should increase the percentage of facilities reporting a QA team in subsequent assessments.

The caliber of staff assigned to the facility appears to affect whether or not they have a QA team. Overall, 43.0% of health centers have a QA team, but where there is a Medical Assistant (MA) present at a health centre 68.8% have a QA team and where there is a medical assistant *and* a midwife 72.4% have a QA team. There are 20 health centres that have no MA or midwife. If these 20 facilities are excluded from the analysis, 58.2% of facilities overall have a QA team.

Action Plans. The percentage of facilities that had an action plan has not changed much since baseline with a total of 64.9% of the QA teams actually having a current Action Plan. However at baseline this meant that only 36 facilities had an action plan, while at midterm 63 facilities had an action plan. This is because of the larger number of facilities surveyed during the midterm assessment. Still the action orientation of teams needs to be addressed during follow up.

Regular management meetings. The percentage of facilities reporting that they have regular management meetings (at least once a month) has also increased, with marginal statistical significance (Table 7). What is positive in this result is that many more health centre level facilities are reporting regular meetings (which should result in improved coordination).

Table 7 Quality Assurance Attributes at Baseline and Midterm

	% of facilities with a QA Team		% of Quality Assurance Teams that have an Action Plan		% of facilities have regular mgt meetings at least once per month		% of facilities ever done COPE exercise
Type of Facility							
	Baseline	Midterm	Baseline	Midterm	Baseline	Midterm	Midterm
Regional Hospitals	71.4	100.0	60.0	100.0	100.0	85.7	100.0
District/ Mission/ Hospitals	85.7	89.7	79.2	83.3	78.6	63.3	83.3
Health Centres/ Other	21.0	42.9	56.0	54.5	34.4	52.6	24.7
Region							
Ashanti	26.3	21.7	60.0	60.0	42.1	69.6	60.9
BAR	25.0	75.0	100.0	22.2	75.0	69.2	41.7
Central	52.6	69.4	66.7	68.0	48.3	68.1	26.8
Eastern	63.6	80.0	85.7	100.0	63.6	90.0	70.0
GAR	0.0	50.0	-	33.3	60.0	83.3	66.7
Volta	15.6	34.2	40.0	91.6	31.3	17.5	42.5
Western	22.7	37.9	60.0	40.0	36.4	41.4	13.8
Totals	35.1	52.1	66.7	64.9	45.2	55.4	36.6 (n=191)
	(n=154)	(n=190)	(n=54)	(n=97)	(n=157)	(n=193)	
p values	.0016		.8601		.0676		

COPE. Since the inception of the project more than one-third (70) of the target facilities have conducted COPE sessions, which should lead to an institutionalized quality assurance process at these facilities (Table 7). COPE has been targeted at hospitals during the first half of the project to empower facility level providers to recognize and make changes that are within their control.

QA methods used. The range of quality assurance methods used in facilities has expanded greatly from baseline, even in facilities that do not have an established quality assurance team. There have been significant improvements in the use of a variety of methods to ensure quality (Table 8). Specifically there have been marked increases in the use of checklists to review services, surveys of medical records and clinical conferences and meetings. This may be attributed to the expanded availability of quality assurance training at all levels, including the health centre level. A key component of this training is practice with and implementation of analytical tools for improving quality at the facility level.

Table 8 Methods of Quality Assurance Used by Type of Facility

% of facilities reporting use of these quality assurance methods										
	Supervisory Checklist Service Components		Supervisory Checklist Service Provision		Mortality Meeting		Survey of Medical Records or Registers		Clinical Conferences or meetings	
Type of Facility										
	Base line	Mid term	Base line	Mid term	Base line	Mid term	Base line	Mid term	Base line	Mid term
Regional Hospitals	14.3	85.7	14.3	85.7	42.9	85.7	42.9	100.0	71.4	85.7
District/ Mission Hospitals	39.3	76.6	32.1	76.6	39.3	86.6	25.0	93.3	39.3	96.5
Health Centres/ Other	4.1	42.1	4.9	29.5	0.8	9.3	18.0	50.3	7.4	79.7
Total	10.8 (n=157)	49.2 (n=189)	10.2 (n=157)	39.8 (n=189)	9.6 (n=157)	24.4 (n=188)	20.4 (n=157)	59.0 (n=188)	15.9 (n=157)	82.6 (n=184)
p values	<.0001		<.0001		.0003		<.0001		<.0001	

Supportive Management

Supervision. There was a statistically significant increase in the percentage of facilities reporting external supervision in the last six months between baseline and midterm, from 75.8% to 94.3% (p<.0001). There were also some important gains in the quality of the activities the supervisors performed during supervision, including increases in reviews of medical records and registers, increases in staff meetings during supervision and increases in observation of service provision.

Table 9 Supportive Management by Type of Facility and Region

	% of facilities reporting external supervision visits in last 6 months		% of supervisors who checked medical records		% of supervisors who discussed problems with staff		% of supervisors who held a staff meeting		% of supervisors that observed service provision	
Type of Facility										
	Base line	Mid term	Base line	Mid term	Base line	Mid term	Base line	Mid term	Base line	Mid term
Regional Hospitals	42.9	85.7	75.0	100.0	75.0	80.0	50.0	100.0	25.0	100.0
District/ Mission/ Hospitals	78.6	96.7	86.4	86.2	95.5	82.7	59.1	82.7	77.3	78.6
Health Centres/ Other	77.0	94.2	83.7	91.9	90.4	76.9	72.1	81.2	50.5	78.6
Region										
Ashanti	73.7	100.0	86.7	95.7	93.3	65.2	60.0	65.2	40.0	95.2
BAR	87.5	100.0	100.0	81.8	100.0	80.0	100.0	90.9	100.0	80.0
Central	83.3	97.2	90.4	91.4	88.5	83.8	71.4	85.9	63.5	69.5
Eastern	72.7	100.0	88.9	90.0	88.9	90.0	77.8	100.0	22.2	100.0
GAR	80.0	100.0	100.0	100.0	100.0	60.0	75.0	100.0	75.0	100.0
Volta	53.1	100.0	79.2	97.5	91.7	90.0	58.3	100.0	50.0	100.0
Western	86.4	69.0	57.9	77.3	89.5	47.6	68.4	40.9	38.9	43.5
Totals	75.8 (n=157)	94.3 (n=192)	83.8 (n=157)	91.2 (n=182)	90.8 (n=130)	77.0 (n=177)	69.2 (n=130)	82.1 (n=179)	54.3 (n=129)	79.2 (n=178)
p value	<.001		.0654		.0013		.0096		<.001	

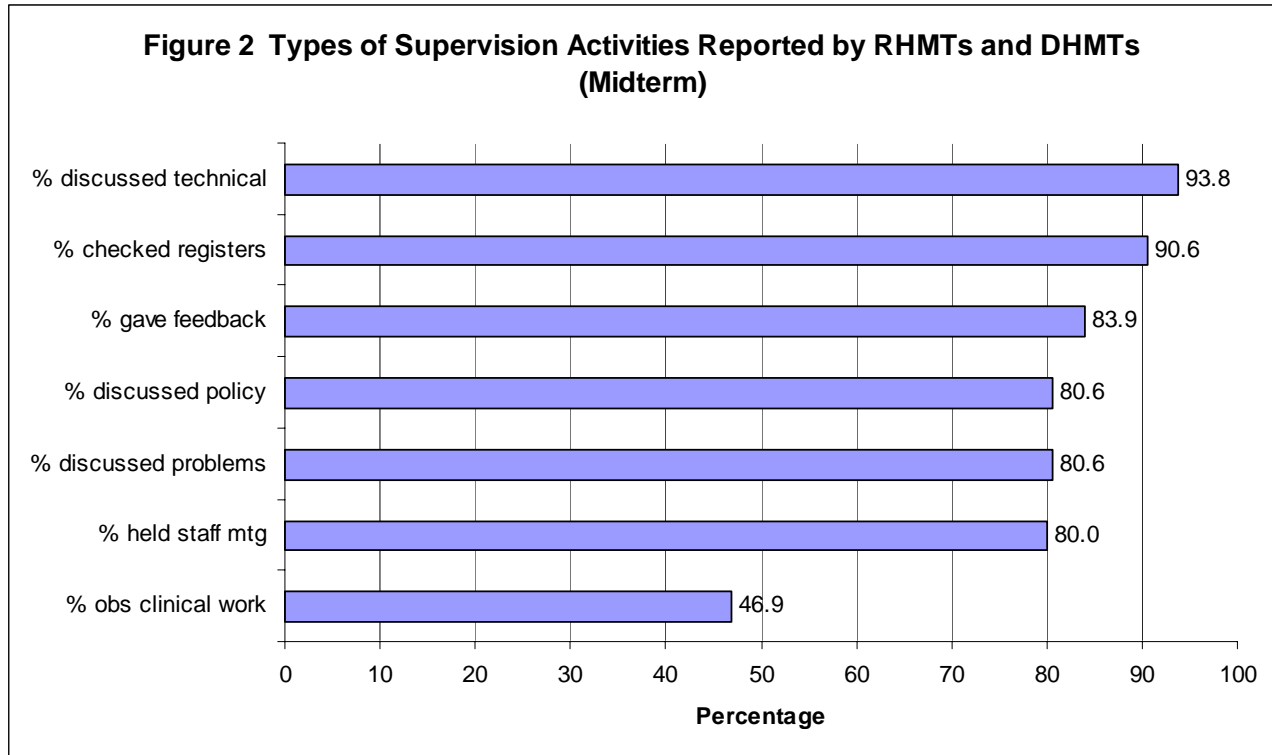
In order to investigate the quality of supervision and how in-depth it is, the midterm assessment also asked providers at each service delivery level whether they had external supervision in the past six months. This question investigates whether supervisors made it beyond the in-charges' desk and into the units. Between 53.9% and 71.7% of all key service delivery units had received supervision at their level in the past six months. Delivery units had the lowest levels of supervision and Child Health had the highest (see Table 10). QHP and GHS will continue to assess the quality of supervision in subsequent assessments and will place major emphasis on improving the quality of supervision in the last years of the project.

Table 10 Supervision in the past 6 months by service delivery area (September 2007)

% of providers who report supervision by service area				
	Child Health (IMCI training followed up)	Family Planning	Ante-Natal Care	Delivery
Type of Facility				
Regional Hospitals	66.7	57.1	100.0	57.1
District Hospitals	76.2	72.7	92.9	86.7
Health Centres	70.8	61.3	63.3	46.2
Region				
Ashanti	66.7	40.0	40.9	18.2
BAR	11.1	90.9	100.0	90.0
Central	84.6	63.8	74.3	52.2
Eastern	25.0	30.0	100.0	77.8
GAR	100.0	66.7	83.3	100.0
Volta	100.0	94.4	88.5	88.9
Western	0.0	33.3	37.9	19.2
Totals	71.7 (n=120)	62.6 (n=179)	69.5 (n=174)	53.9 (n=167)

In interviews conducted at the Regional and District Health Directorates during the midterm assessment, 77.4% of Regions and Districts reported they have written plans for supervisory visits (n=31). Almost all (93.8%) of Regions and Districts have supervisory checklists (n=32).

Using a “top of mind” methodology – District and Regional Health Officers were asked what they commonly do on monitoring visits (no prompts were offered). Regional and District Health Directorate team members reported that they used a range of supervisory techniques from discussing technical issues (93.8%) to observing clinical work (46.9%) (Figure 2).



This range of supervisory techniques may be attributable to facilitative supervision training. A total of 29 of 32 reporting districts and regions had staff trained in facilitative supervision. QHP has supported training of more than 370 providers and supervisors in facilitative supervision since the inception of the project. On average districts and Regions reported making 3.2 supervision trips per quarter (n=33).

Referral Systems

Referral System Results. Only 16.2% of facilities had copies of the National Referral Guidelines that were developed in 2006. This is not surprising given that they were only distributed in certain districts in Central Region and Greater Accra Region as part of a pilot project. Despite a lack of copies of the National Referral Guidelines in the facilities, 71.3% of delivery units and 70.8% of child health providers (generally in the OPD) use a standard referral note to send clients to the next level of care. It seems that the referral notes had a more rapid diffusion than the guidelines themselves.

Systems for Preventing Transmission of Infection

Overview. One key measure of quality is the presence and maintenance of systems to prevent the transmission of infection. Specifically there should be soap, water, single use towels, sharps boxes and gloves in every consultation room in every service delivery unit of a facility –without exception. In addition, in the delivery unit and in the family planning unit (where invasive procedures are performed) – disinfectant for decontaminating instruments should also be available. QHP invested significant resources in providing refresher training in infection prevention for more than 1200 providers in target facilities and there have been marked improvements in individual

service delivery areas (which will be illustrated in more detail below). However, at the macro – facility wide level – where a facility must have all items in all service delivery units – there has been no improvement in the percentage of facilities reporting all infection prevention items in place. However at baseline only 25 facilities had all of the infection prevention items in place, but by midterm 59 facilities had them all in place. While the percentage of facilities with all infection prevention items in place remains the same, the actual number has increased. There have been some successes – for example, in target facilities in Brong Ahafo there have been significant improvements and there has been some improvement at the hospital level in general.

Decontamination solution. The main factor contributing to the lack of an overall improvement is that family planning and delivery units often do not have decontamination solution – either prepared and ready for use or in a clearly marked container with the strength written on it – so it could be prepared by the provider as necessary. Family planning units that conducted invasive procedures such as implant or IUD insertion, overall only had decontamination solution 51.2% of the time. It is clear that this area requires more attention for follow-up and implementation of new skills acquired during training (Table 11).

Table 11 Infection Prevention and Disposal Systems

	% of facilities with all infection-prevention items ¹ in all service delivery areas	
	Baseline	Midterm
Type of Facility		
Regional Hospitals	33.3	40.0
District/Mission/Hospitals	38.9	46.4
Health Centres/Other	28.1	36.4
Region		
Ashanti	10.0	27.3
Brong Ahafo	0.0	60.0
Central	32.5	38.8
Eastern	75.0	50.0
Greater Accra	25.0	20.0
Volta	45.5	38.5
Western	30.9	27.3
Totals	30.8 (n=81*)	36.9 (n=160*)
p value	.3925	

¹ Soap & water, sharps box, disinfectant, gloves and single use towels.

* If data were missing from any of the service areas they were excluded from the analysis.

In the midterm analysis in order to deepen our definition of adherence to infection prevention protocols, we asked providers in each service delivery unit to tell us the correct solution strength for decontamination of instruments, the correct dilution ratio for the type of bleach they had in the room on the day of the evaluation. These questions were asked in the Family Planning Unit and Delivery Unit. Overall the providers in the delivery units understood the dilution process better than the family planning providers. This is likely because they use decontamination solution more often than family planning providers (Table 12).

Table 12 Provider knowledge of correct solution strength for decontamination – Family Planning and Delivery (Midterm)

	Provider in FP unit knew the correct solution strength	Provider in Delivery Unit knew the correct solution strength	Provider in the FP unit knew the correct dilution	Provider in the Delivery unit knew the correct dilution
Type of Facility				
Regional Hospitals	85.7	100.0	83.3	85.7
District/ Mission Hospitals	90.5	85.7	73.7	85.7
Health Centres/ Other	64.6	81.7	47.1	75.4
Region				
Ashanti	75.0	85.7	52.9	75.0
BAR	90.9	100.0	100.0	100.0
Central	60.0	79.1	40.6	80.0
Eastern	70.0	100.0	70.0	87.5
GAR	83.3	83.3	50.0	66.7
Volta	71.4	76.9	68.6	73.1
Western	68.0	87.0	31.8	68.2
Totals	68.6 (n=172)	83.2 (n=161)	52.7 (n=165)	75.2 (n=153)

Further questions about how to correctly process instruments after use were also asked. First the provider was asked the steps in processing instruments in an unprompted manner and if they did not mention a step – they were then prompted with that step. Overall – knowledge of correct processing of instruments was very high (Table 13).

Table 13 Provider knowledge of instrument processing

	Soak instruments for 10 minutes		Wash with soap and scrub		High Level Disinfection (HLD)		Store in a clean dry place		All of the steps.	
	FP	Delivery	FP	Delivery	FP	Delivery	FP	Delivery	FP	Delivery
Regional Hospitals	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
District/ Mission Hospitals	90.4	93.1	100.0	100.0	100.0	100.0	100.0	86.2	90.4	79.3
Health Centres/ Other	94.5	96.9	96.1	96.2	92.2	90.8	95.3	93.1	90.6	84.7
Totals	94.2 (n=156)	96.4 (n=167)	96.7 (n=156)	97.0 (n=167)	93.6 (n=156)	92.8 (n=167)	96.2 (n=157)	92.2 (n=167)	91.1 (n=157)	84.4 (n=193)

Quality Assurance Key Findings

- There has been a significant increase in the number of quality assurance teams, especially at the health centre level and a marked increase in the range of QA techniques being used.
- Most Districts and Regions have supervisors trained in facilitative supervision and there has been a statistically significant increase in supervision levels since baseline. However, better quality of supervision and more in-depth supervision are still needed at the service delivery level.
- There have been improvements in individual components of infection prevention systems, but improvement is still needed in the use of decontamination solution.
- Provider knowledge of how to correctly process instruments for decontamination and sterilization is very high.

Child Health Services

Capacity to Provide Quality Curative Care for Sick Children

Overview. A major component of QHP's work is to improve the quality of treatment for sick children under five, focusing on the treatment of malaria and diarrhea in these populations. The main methodology for accomplishing this task since the outset of the project has been to provide Integrated Management of Childhood Illness (IMCI) training and field follow up to providers in the target Districts. By September 2007 more than 200 providers had been trained in IMCI.

Equipment and supplies. There have been statistically significant increases in the availability of basic diagnostic equipment, in infection prevention practices and in the availability of the key IMCI reference guide – the Chart booklet (Table 14). Although QHP had not procured IMCI equipment for these facilities at the time of the midterm, sometimes the equipment was already there – but not being utilized properly. Through monitoring and mentoring many outpatient dispensaries have been re-arranged to ensure a better standard of care for children, including better utilization of equipment that was already there. However, the overall availability of all necessary equipment remains low at 26.4%¹.

Table 14 Selected Essential Components to Support Quality Child Health Care

	% of facilities with all essential equipment ¹		% of facilities with all infection prevention items ²		% of facilities have IMCI Chart booklet (treatment algorithm)		% of facilities that use a standard referral note (midterm only)
Type of Facility							
	Baseline	Midterm	Baseline	Midterm	Baseline	Midterm	Midterm
Regional Hospitals	28.6	28.6	57.1	40.0	57.1	80.0	100.0
District/Mission Hospitals	3.6	16.7	69.2	75.0	22.2	73.1	88.5
Health Centres/Other	7.4	28.2	56.2	78.3	29.5	82.3	66.9
Totals	7.6 (n=157)	26.4 (n=193)	56.2 (n=137)	76.8 (n=185)	29.5 (n=157)	80.9 (n=178)	70.8 (n=178)
p values	<.0001		<.0001		<.0001		

¹ Functioning infant and child weighing scale, minute timer and thermometer and at baseline a jar/pitcher for ORS, cup and spoon.

² This included soap, water, single use towels, sharps container, gloves in either the immunization room or where sick children were seen.

Infection prevention items. Infection prevention practices in the child health care areas have improved markedly, especially at the health center level. For Regional Hospitals the figure is still very low for a number of reasons. There were data for only 5 of the 7 hospitals for this section and then only two of the five had all three requisite infection prevention items. It appears that of the Regional hospitals surveyed, not all of the consulting rooms had hand washing facilities (four out of five had them) and only three out of five had sharps containers in the consulting rooms. Combined, this led to a low aggregate score for Regional hospitals for infection prevention in Child

¹ Note: A second round of QHP equipment procurement is underway in the second half of 2007. This will include some neonatal and IMCI equipment.

Health. More detail about the specific infection prevention results for Child Health is available in Table B in the Appendix.

IMCI chart booklet. The availability of the IMCI chart booklet, a key job-aid to help providers go systematically through counseling and treatment of a patients has increased substantially. QHP plans to support GHS to make these even more widely available to providers in the consulting rooms and ensure they are using them to provide a standardized level of care.

Referrals. Overall, providers also report using a standard referral note to refer to the next level of care on a regular basis (70.8%). QHP has worked with the GHS to develop a referral policy and guidelines and design a standard referral note. The new referral system is in the process of being introduced and has taken hold in hospitals. More work needs to be done to assist with standardization of referral at the health centre level, and to strengthen the referral, communications and transportation links between communities and health facilities, and between levels of health facilities.

Other practices. Facilities throughout the target area and especially health centres have improved the quality of their care. Routine growth monitoring prior to consultation increased from baseline from 75.0% of facilities to 89.2% of facilities (p=.0008). Nearly all facilities (96.2%) have adopted the best practice of sponging and providing paracetamol to febrile children (Table 15).

Table 15 Factors Affecting the Quality of Child Health Care

	% of facilities with routine system for growth monitoring before consultation		% of facilities with routine system for managing children with fever (sponging and paracetamol)		% of facilities with trained IMCI person providing services	% of facilities where IMCI resource person has followed-up training
Type of Facility						
	Baseline	Midterm	Midterm	Midterm	Midterm	Midterm
Regional Hospitals	71.4	80.0	80.0	57.1	66.7	
District/Mission Hospitals	74.1	89.3	92.9	60.0	76.2	
Health Centres/Other	75.4	89.2	97.4	59.6	70.8	
Totals	75.0 (n=152)	89.2 (n=185)	96.2 (n=185)	59.5 (n=193)	71.7 (n=120)	
p values	.0008					

Almost 60% of facilities now have an IMCI trained provider as the person who provides services and most providers have been followed up after their training. However there are some Regions (Ashanti and Western) where IMCI follow up needs immediate attention. This is clearly illustrated in Table C in the Appendix where all of the Child Health Results are summarized in a single table by Region. This summary shows that IMCI across the board in Ashanti and Western Region needs some technical assistance and support.

Adherence to Standards for Quality Service Provision – Child Health

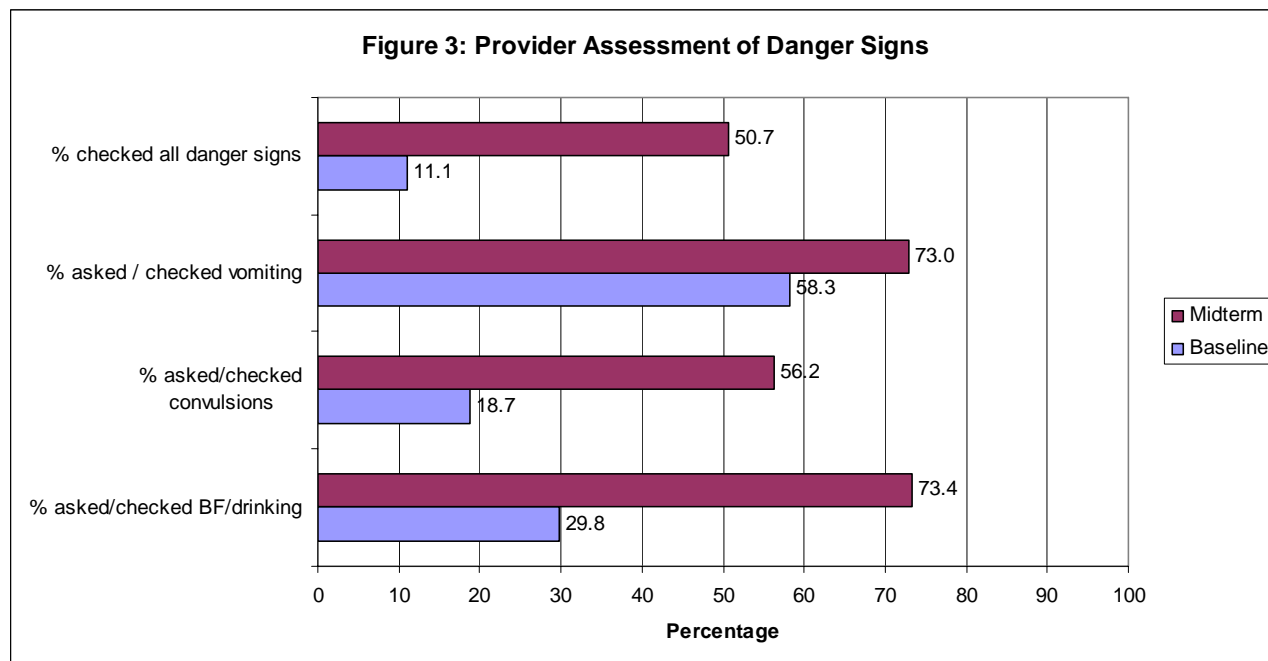
Observation of service providers. At baseline all providers treating sick children were observed and a minimum of 2 and a maximum of 5 observations at each facility were sought. For the midterm –

one observation per facility was planned, but due to length of time observations take and the need to have the appropriate caseload, there was no observation at some facilities. Overall the data are largely comparable with a few caveats. There are no statistically significant differences between the numbers of observations at different type of facilities. There is however a difference between the number of observations collected in Western Region (more at midterm), but this should not positively bias the results, because relatively fewer providers were trained in IMCI in the target facilities in Western Region. The main area for concern is in the types of providers observed. At baseline more doctors were observed and there was more missing data on the type of provider observed. At midterm more midwives were observed. These data may not be exactly comparable for this reason, but provide at a minimum a strong indication of the trends in managing child health (Table 16).

Table 16 Percentage of Sick Child Observations that were made by type of facility, Region and provider type

	Baseline (n / %)	Midterm (n / %)	p value
Type of Facility			
Regional Hospital	35 (8.3)	10(6.9)	.7223
District/Mission Hospital	109 (25.9)	31 (21.4)	.3717
Health Centre/ Other	277 (65.9)	104 (71.4)	.2181
Region			
Ashanti	44(10.4)	13 (9.0)	.7491
Brong Ahafo	35 (8.3)	5 (3.4)	.0590
Central	158 (37.5)	55 (37.9)	1.000
Eastern	21 (5.0)	9 (6.2)	.5278
Greater Accra	12 (2.8)	4 (2.8)	1.000
Volta	99 (23.5)	28 (19.3)	.3558
Western	52 (12.3)	31(21.3)	.0098
Type of Provider Observed			
Doctor	76 (18.1)	16 (11.0)	.0507
Medical Assistant	167 (39.7)	53 (36.6)	.5538
Nurse/CHN	88 (20.9)	37 (25.5)	.2480
Midwife	26 (6.2)	33 (22.8)	.0001
Other	12 (2.9)	3 (2.1)	.7702
Missing	52 (12.4)	3 (2.1)	.0001
Total Observations			
	n=421	n=145	

Assessment of danger signs. Assessing danger signs in a child seeking treatment for fever or diarrhea can make a difference in the quality of the diagnosis and ensure that a provider does not miss key signs that may signal a more serious problem. At baseline and midterm QHP measured whether providers asked about three key danger signs – namely whether the child can eat or drink, whether they had any convulsions and whether they’ve been vomiting. There have been statistically significant increases in the percentages of providers who ask about each of these danger signs (Figure 3). In addition there has been a marked increase in the percentage of providers who ask about all of the danger signs up from 11.1% at baseline to 50.7% at midterm (full details in Table D in the Appendix).

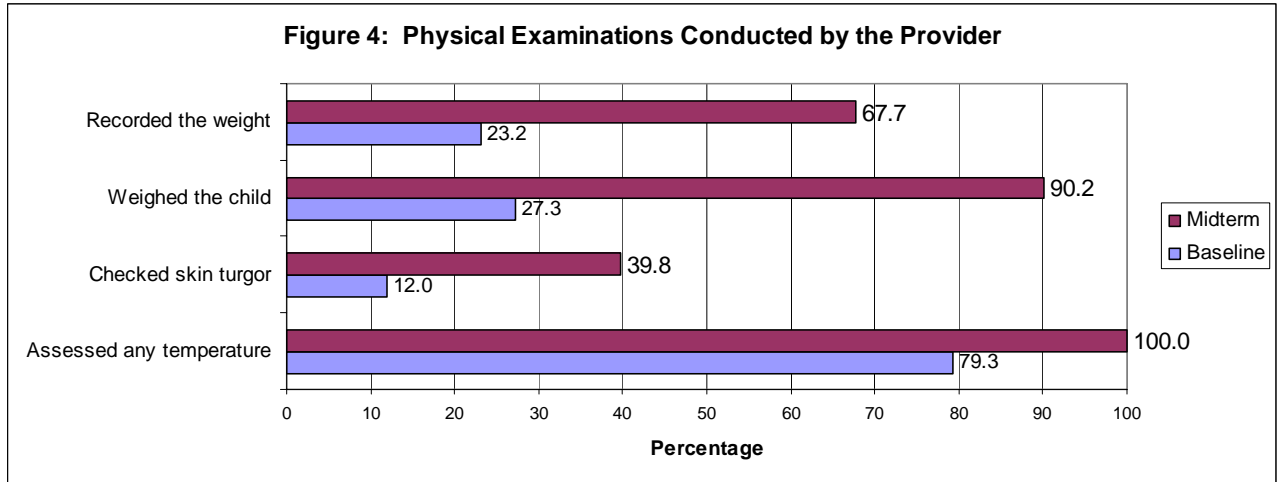


All categories of provider also showed increases in asking about all of the danger signs, showing good progress towards improving the quality of care for children (Table 17).

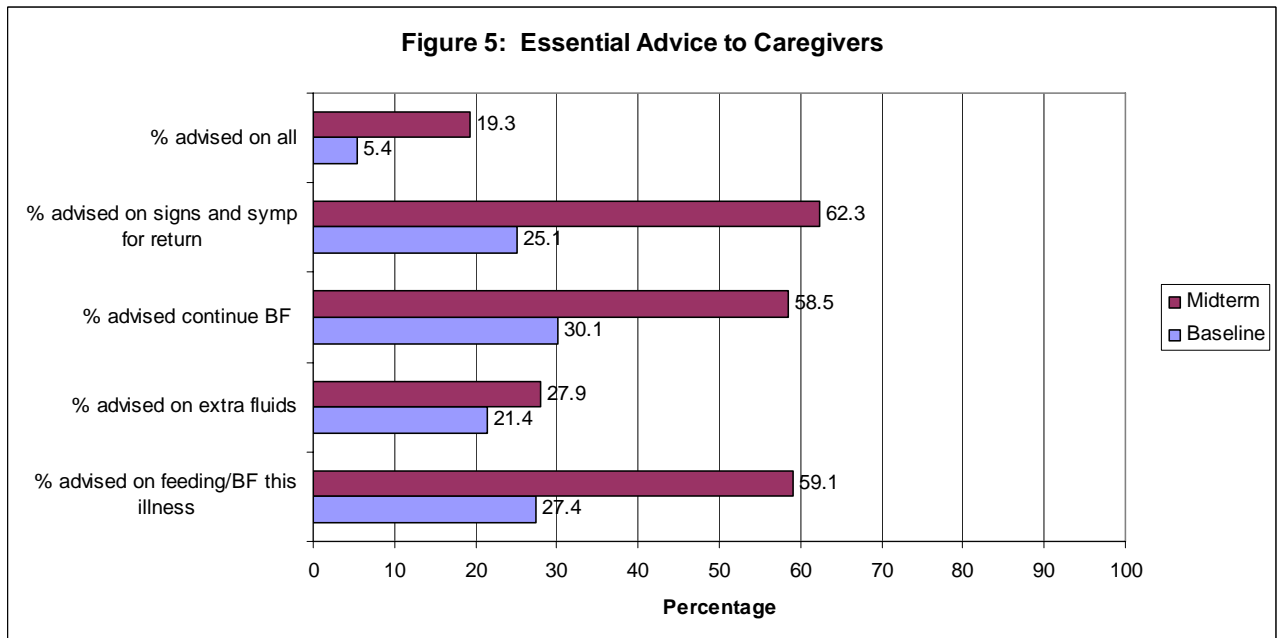
Table 17 Percentage of Providers who asked about all Danger Signs by Type of Provider

Provider Type	% of Providers that asked about all the danger signs	
	Baseline (n=368)	Midterm (n=142)
Doctor	4.2	13.3
Medical Assistant	11.7	53.8
Nurse	23.0	64.9
Midwife	0.0	50.0
Other	0.0	33.3

Providers also improved their performance of providing physical examinations. The percentage of providers who assessed temperature increased to 100% and a much higher proportion of children were weighed (which will have a positive impact on assessing the correct dosage of Artesunate and Amodiaquine needed for children diagnosed with malaria). Assessing children for dehydration – using the skin pinch or skin turgor test also improved but is still used in less than 40% of consultations (Figure 4).

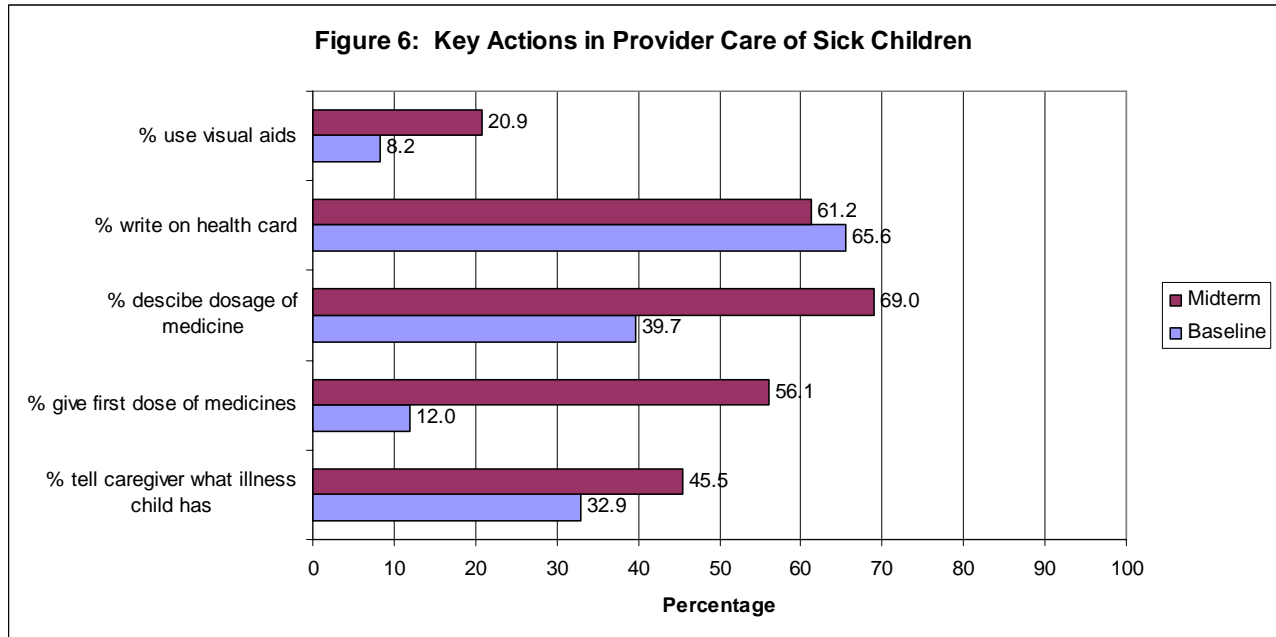


Advice to caregiver. A provider should also give the caregiver advice on how to manage the child's illness. QHP measured the percentage of providers who gave key advice at baseline and again at midterm during clinical observations. There were significant increases in provider performance in almost all areas. Providing information on how to feed the child and the need to continue feeding the child during this illness, as well as the signs and symptoms for return to the facility all improved significantly. The need to continue fluids improved but not significantly. The percentage of providers who provided all the advice also improved significantly, although the overall percentage of providers who were able to provide all of the advice is still low at 19.3% (Figure 5 – full details in Table E in the Appendix).

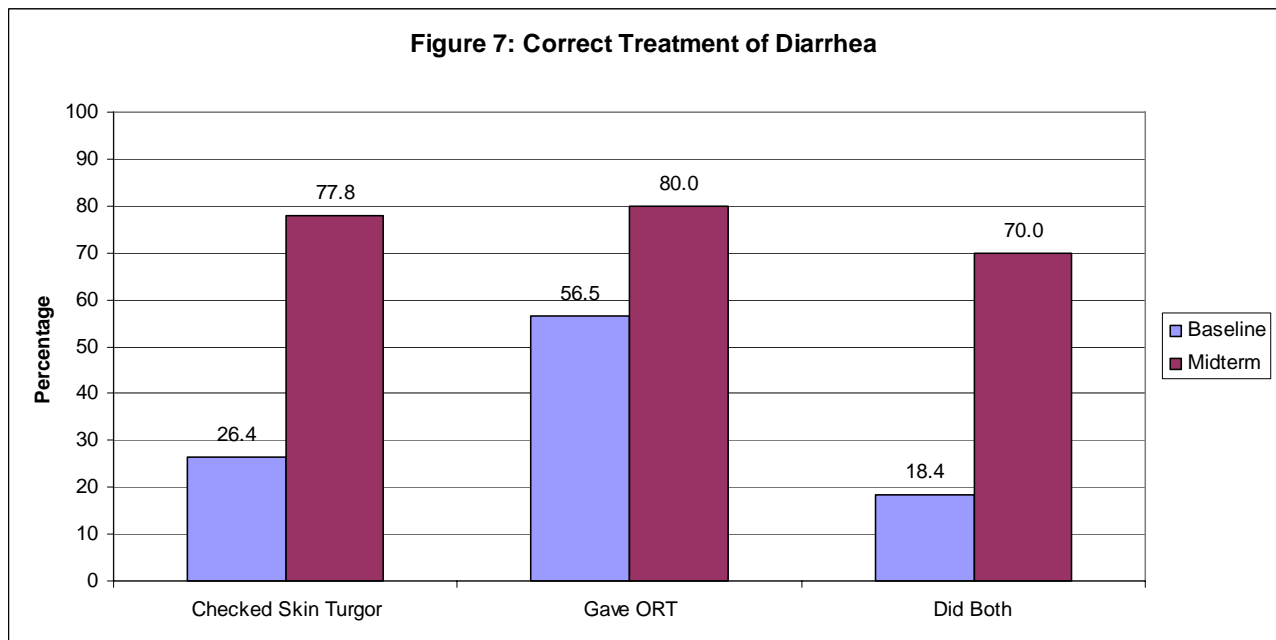


Providers also improved their communication with caregivers significantly – by telling the caregiver what illness the child has. They are also increasingly following the best practice of making sure to give the first dose of medicine at the facility and explaining the dosage to caregivers. The use of visual aids increased significantly it is still very low, mainly because there are few good visual aids

available in facilities for providers to use for counseling. Providers tend to write less now on the health card. The reasons why are not clear (Figure 6, detailed results in Table F in the Appendix).



Two key actions in the treatment of diarrhea are checking for dehydration (using the skin turgor test) and providing oral rehydration therapy to the patient. Provider’s practice of both of these key actions increased significantly at midterm – with 70.0% of providers treating diarrhea appropriately (Figure 7).



Child Health – Key Findings

- Providers have improved their treatment and management of illnesses in children under five – notably increasingly assessing all of the danger signs and providing all of the essential advice.
- IMCI trained providers are providing service in nearly 60% of target facilities.
- Providers have almost universally adopted the best practice of conducting routine growth monitoring .
- More physical assessments are now conducted during consultations including assessments for dehydration and fever.
- Providers are telling their patients more about the consultation and allowing them to be part of the process.

Malaria - Treatment of Fever

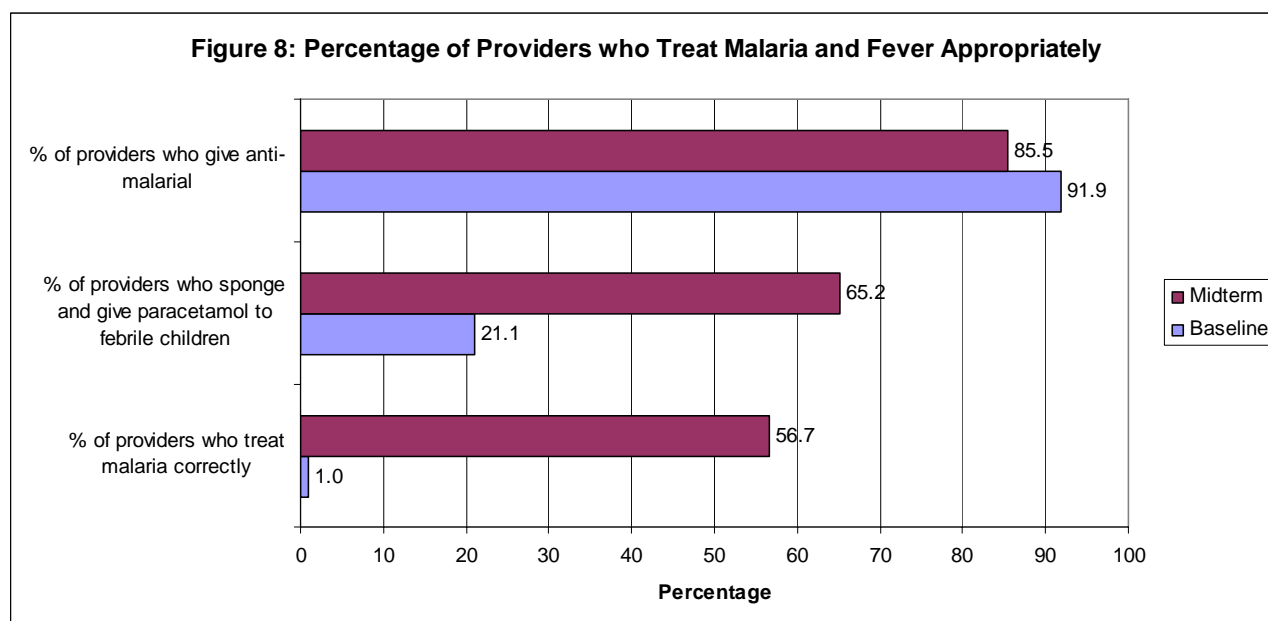
Management of Fever. At baseline, only 24.9% of providers sponged children with fever (or ordered them to be sponged) and 34.2% of providers gave children with a fever paracetamol to reduce the fever during the consultation and 21.1% of providers both sponged the child and provided them with paracetamol at baseline.

Table 18 Treatment of Fever

	Sponge child w/ fever	Gives child w/ fever paracetamol	Sponge and give paracetamol
Baseline (n=419)	24.9	34.2	21.1
Midterm (n=145)	68.3	71.0	65.2
p values	<.0001	<.0001	<.0001

At midterm, 68.3% of providers sponged children with fever (or ordered them to be sponged). Another dramatic improvement in management of fever was that 71.0% of providers gave the child paracetamol to reduce the fever. Overall 65.2% of providers both sponged children and gave paracetamol. All of these results (Table 18) were very significant improvements over baseline.

Treatment of Malaria. Correct treatment of malaria may be defined as providers who both sponge and provide paracetamol to febrile patients and prescribe the child diagnosed with malaria an anti-malarial. At baseline very few (less than 1.0%) could perform these three simple actions. At midterm 56.7% of providers were routinely performing these three actions (Figure 8).



Use of ACTs. In December 2004, the National Malaria Control Programme (NMCP) launched a new Artemisinin based Combined Therapy for the first-line treatment of malaria in Ghana. The training of providers, and supply of facilities by the NMCP has taken some time to implement, but by September 2007 96.7% of target facilities in the 30 Districts were using the new Artesunate / Amodiaquine therapy to treat malaria. This was an increase over even seven months before when monitoring data were collected on the new therapy's use – when only 84.7% of facilities were using the new combination. The use of the new therapy is now widespread and the previously used monotherapy (chloroquine) is slated to be taken out of the system in 2008 (Table 19).

**Table 19 Correct Treatment of Malaria According to the New Treatment Guidelines
(December 2006 Monitoring and September 2007 Midterm data)**

	% of facilities using Artesunate / Amodiaquine for treatment of malaria		% of providers that know the correct dosage (mg/kg) for this regimen	
	Monitoring	Midterm	Monitoring	Midterm
Type of Facility				
Regional Hospitals	75.0	100.0	33.3	100.0
District/Mission Hospitals	73.1	92.9	42.1	69.6
Health Centres	87.4	87.4	27.8	51.8
Region				
Ashanti	95.0	100.0	10.5	71.4
Brong Ahafo	100.0	100.0	50.0	60.0
Central	76.5	95.7	32.7	40.3
Eastern	75.0	100.0	42.9	66.7
Greater Accra	100.0	100.0	60.0	20.0
Volta	94.3	94.9	25.0	75.7
Western	76.9	96.3	28.6	50.0
Totals	84.7 (n=157)	96.7 (n=184)	30.0 (n=130)	55.4 (n=168)
p values	<.0001		<.0001	

While use of the new combination therapy is now wide-spread – provider knowledge of the correct dosage for the new therapy is less universal. The NMCP released a provider job aid that gave a suggested dosing chart for the new Artesunate / Amodiaquine treatment, shortly after the drug was launched. The chart is widely available in health facilities throughout the country. However, at lower weights the chart can easily overdose or under dose a patient – because it provided treatment advice on very broad weight categories. Providers routinely use the chart to provide prescriptions for patients – but were unaware of the milligram per kilogram dosing regimen. During QHP’s monitoring exercise which concluded in December 2006, only 30.0% of providers could state the correct dosage for a 20 kg child. Following intensive coaching by QHP and GHS staff during monitoring trips, by midterm 55.4% of providers now know the correct dosage of the ACT regimen. Ensuring that providers know and prescribe the correct dosage will be an area where QHP continues to monitor and provide technical assistance.

Malaria – Treatment of Fever – Key Findings

- In the past three years almost all facilities (96.7%) have adopted the use of Artesunate and Amodiaquine to treat malaria.
- Adoption of the correct dosage for malaria treatment has been slowed by the widespread use of a chart that prescribes treatment on a weight basis that is too wide. However more than 50% of providers currently know the correct dosage.
- The percentage of providers who treated malaria appropriately has increased exponentially from 1.0% at baseline to 56.7% at midterm, a statistically significant increase.
- Providers have almost universally adopted the best practice of managing febrile children by sponging and providing paracetamol.

Family Planning Services

Overview: Of the 193 facilities surveyed during the midterm assessment – 11 facilities do not offer family planning services. All of these facilities are supported by the Catholic church. All 182 Ghana Health Service sponsored facilities in the dataset (100.0%) provide family planning services. The midterm assessment collected service data for the first quarter of 2007. On average facilities in the 30 target Districts are servicing about 4,500 new acceptors and more than 15,000 continuing users a month.

Availability of Infrastructure and Resources for Family Planning

Family Planning protocols/handbook. The percentage of facilities reporting that they have a copy of the protocols is about the same as baseline. This is largely due to the delayed release of the new Family Planning Handbook. Now that the new handbook is available, the percentage of family planning units with a copy of the protocol should go up dramatically in subsequent monitoring sessions (Table 20).

Table 20 Infrastructure and Resources In Family Planning Delivery Areas

	% of facilities with protocols or guidelines for family planning ¹		% of facilities with all items for infection prevention ²		% of facilities with conditions for a quality pelvic examination ³	
	Baseline	Midterm	Baseline	Midterm	Baseline	Midterm
Type of Facility						
Regional Hospitals	85.7	85.7	57.1	100.0	57.1	57.1
District / Mission Hospitals	70.8	77.3	46.4	73.9	35.7	39.1
Health Centres/Other	49.5	53.5	26.2	52.0	10.7	13.8
Regions						
Ashanti	41.2	47.4	31.6	40.0	5.3	0.0
Brong Ahafo	75.0	54.5	0.0	100.0	0.0	36.4
Central	55.4	64.7	31.7	61.4	23.3	20.0
Eastern	62.5	50.0	45.5	60.0	36.4	20.0
Greater Accra	100.0	83.3	40.0	66.7	20.0	33.3
Volta	60.0	53.1	40.6	43.2	12.5	10.8
Western	36.8	51.9	18.2	53.6	13.6	28.6
Totals	54.9 (n=142)	57.8 (n=173)	31.2 (n=157)	56.6 (n=182)	17.2 (n=157)	18.7 (n=182)
p values	.6484		<.0001		.7776	

¹ Essentials of Contraceptive Technology book

² Water, soap, single-use towels, clean gloves, sharps container, decontamination solution for clinical equipment in facilities that perform invasive procedures.

³ Functioning spotlight, table and stool for gynaecological examination, visual and auditory privacy.

Infection prevention in FP. Family planning units in facilities improved their infection prevention practices significantly between baseline and midterm with more than half of all units having all of the necessary infection prevention items. For more detail about the specific infection prevention results for family planning units – see Table G in the appendix. The main constraint to all facilities having infection prevention materials is that many facilities that perform invasive procedures do not have decontamination solution or bleach that has the concentration clearly marked on the label.

Pelvic exam equipment and confidentiality. Conditions for a quality pelvic examination remained steady and very low due to a lack of equipment, specifically gynecological tables and examination lights. Where facilities showed a significant improvement was in terms of client privacy and recognizing the need for clients to have a private consultation. This is a key tenet of COPE exercises and the sexual and reproductive health curriculum that many providers participated in since the inception of the project. The idea of client confidentiality is making progress. The details of these results are presented in Table 21.

Table 21 Equipment for a quality pelvic examination

	% of facilities with a functioning spotlight		% of facilities with a table for gyn exam		% of visual and auditory privacy	
	Baseline	Mid term	Baseline	Mid term	Baseline	Midterm
Type of Facility						
Regional Hospitals	71.4	71.4	85.7	57.1	57.1	100.0
District/ Mission Hospitals	42.9	42.9	60.7	87.0	51.9	90.9
Health Centres/ Other	14.8	18.7	53.3	53.1	59.0	82.0
Region						
Ashanti	15.8	10.0	15.8	10.0	42.1	95.0
BAR	0.0	36.4	62.5	72.7	25.0	100.0
Central	26.7	22.1	76.7	73.9	71.7	95.7
Eastern	36.4	20.0	45.5	60.0	40.0	100.0
GAR	20.0	50.0	80.0	80.0	80.0	66.7
Volta	21.9	11.1	34.4	41.7	53.1	51.4
Western	18.2	44.4	63.6	61.5	54.5	78.6
Totals	22.3 (n=157)	23.6 (n=178)	56.1 (n=157)	57.6 (n=177)	57.7 (n=157)	83.8 (n=179)
P values	.7961		08250		<.0001	

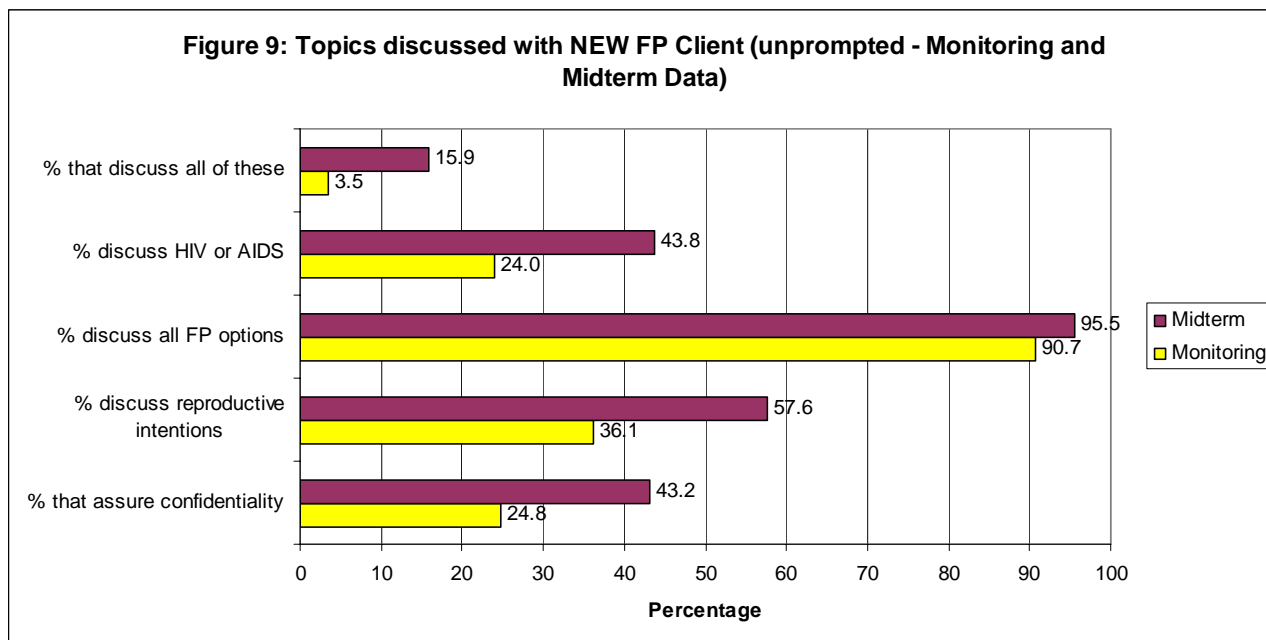
Procurement. QHP undertook procurement of basic equipment for facilities including stethoscopes, sphygmomanometers, weighing scales, IUD and Norplant insertion kits. The targeting was based on an equipment assessment conducted in September 2005 and monitoring data from December 2006. At the time of the midterm assessment most of the equipment had been delivered, except for the weighing scales, and items to some Regions. The weighing scales in the family planning units have decreased significantly since baseline largely due to a definitional change. Common bathroom scales were no longer considered adequate for these facilities, so any facility without a functional medical scale was counted as lacking (Table 22). The weighing scales ordered by QHP were affected by delays, and arrived in country in the second half of 2007 after the midterm data were collected. Once the scales have been distributed, an estimated 84% of facilities will have the correct weighing scales.

Table 22 Equipment Procured by QHP Available in FP Service delivery areas

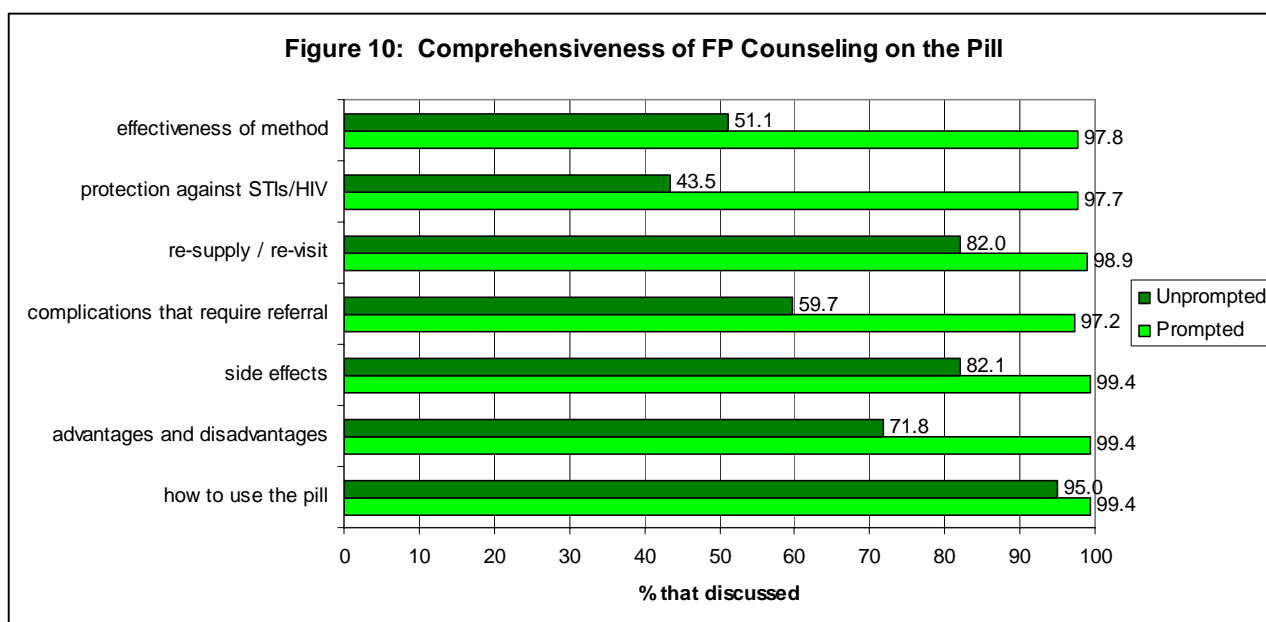
	% of facilities with functioning sphyg.		% of facilities with functioning stethoscope		% of facilities with a functioning weighing scale		% of facilities with trained provider and IUD kit	% of facilities with trained provider and Norplant kit
	Baseline	Midterm	Baseline	Midterm	Baseline	Midterm	Midterm	
Type of Facility								
Regional Hospitals	100.0	100.0	100.0	100.0	85.7	71.4	66.7	83.3
District/Mission Hospitals	67.9	81.8	71.4	82.6	67.9	56.5	89.5	94.1
Health Centres/Other	64.8	78.3	68.9	79.6	66.4	21.3	78.7	83.3
Region								
Ashanti	57.9	90.0	57.9	90.0	73.7	35.0	100.0	80.0
Brong Ahafo	87.5	90.9	87.5	90.9	75.0	63.6	87.5	90.0
Central	66.7	87.0	71.7	88.6	80.0	11.4	82.5	89.7
Eastern	63.6	70.0	63.6	80.0	54.5	30.0	100.0	100.0
Greater Accra	80.0	83.3	80.0	83.3	80.0	66.7	100.0	100.0
Volta	68.8	54.1	75.0	54.1	81.3	47.2	55.6	50.0
Western	63.6	85.7	68.2	85.7	9.1	14.8	58.3	80.0
Totals	66.9 (n=157)	79.6 (n=181)	70.7 (n=157)	80.8 (n=182)	67.5 (n=157)	27.8 (n=180)	80.2 (n=86)	86.2 (n=65)
p values	.0238		.0406		.0001			

Through QHP procurement more than 80% of facilities that have a trained Norplant or IUD provider now have insertion kits. Throughout 2008 additional training and insertion kit procurement will also be completed in order to keep this number as high as possible. During 2007 GHS has phased out use of Norplant and replaced it with Jadelle, so future procurement will be for Jadelle insertion kits.

SRH Training. QHP has supported training of more than 400 providers in the Sexual and Reproductive Health curriculum, more than 50% of them were trained since January 2007. One focus of this training is improved counseling skills for providers. In order to gauge the general understanding of family planning providers of the essential components of family planning counseling, as part of the monitoring system and the midterm assessment, providers were asked what topics they cover when counseling a new acceptor. All questions were asked in an unprompted manner. Since the monitoring data were collected in December 2006 – there have been significant increases in the number of providers reporting they discuss these key topics with their clients. Providers were already covering all the different FP options with their clients, but they are increasingly mentioning confidentiality, and HIV and AIDS. These are positive developments for FP clients (Figure 9 – details available in Table H in the Appendix).



During the midterm assessment, a question was also added about the comprehensiveness of family planning information on the pill (as a proxy for comprehensive information on all methods). Providers performed very well, although they could use some updating and reminding about the need to discuss possible side effects that require referral and STIs / HIV (Figure 10).



Supervision of FP providers. Providers who reported being supervised in the last six months were more likely to discuss reproductive intentions with a client ($p=.031$) and discuss all the FP options with their clients ($p=.045$). Having attended refresher training in the past 3 years had a significant impact on whether the provider discussed HIV and AIDS with their client ($p=.055$). In the family planning units, recent supervision (in the past six months) increased between December 2006

(45.3%) and September 2007 (62.6%). About half of the providers reported having had a refresher training on family planning topics in the past three years (55.4%) (Table 23).

Table 23 Supervision of FP services

	% of facilities where a supervisor has observed FP services in past 6 months		% of providers who report receiving in-service training on FP topics	
Type of Facility				
	Monitoring	Midterm	Monitoring (last 12 months)	Midterm (last 3 years)
Regional Hospitals	100.0	57.1	25.0	50.0
District/ Mission/ Hospitals	47.6	72.7	33.3	59.1
Health Centres/ Other	43.1	61.3	31.0	55.0
Region				
Ashanti	66.7	40.0	75.0	73.7
BAR	77.8	90.9	0.0	27.3
Central	40.3	63.8	34.4	69.6
Eastern	25.0	30.0	28.6	90.0
GAR	50.0	66.7	25.0	33.3
Volta	50.0	94.4	9.1	8.3
Western	31.3	33.3	50.0	73.1
Totals	45.3 (n=148)	62.6 (n=179)	31.2 (n=141)	55.4 (n=177)

Stock outs of Family Planning Commodities

A total of 23 facilities experienced a complete stock-out of one type of family planning commodity in the past six months (Table 24). This means that the facility was completely out of that type of commodity (all types of condoms or all types of pills or all types of injectables for instance). Most facilities were completely stocked out of spermicide in the past six months because there was a nationwide shortage, so spermicides were not included in the analysis.

Table 24 Number of Facilities Experiencing a Complete Stock-Out of Family Planning Commodities in the past six months by type of commodity

Stocked out of all pills (Lo-fem, Overette, Micro G and Micro-N)	Stocked out of all Condoms (Male and Female)	Stocked out of IUDs	Stocked out of all injectables (Depo-Provera and Norigynon)	Stocked out of Implants	Any Complete Stock out of a type of method
1	6	15	3	10	23

A total of 105 facilities (57.7%) experienced a stock out of at least one family planning commodity in the past six months. This includes all commodities and any reported stock out of any commodity during the period (Table 25). There were many facilities that were stocked out of Norigynon during this period, but it appears that they had Depo-Provera available at that facility because only three facilities reported being completely stocked out of injectables. Pills also had relatively high rate of being stocked out – although it appears rare that facilities are ever completely stocked out of pills.

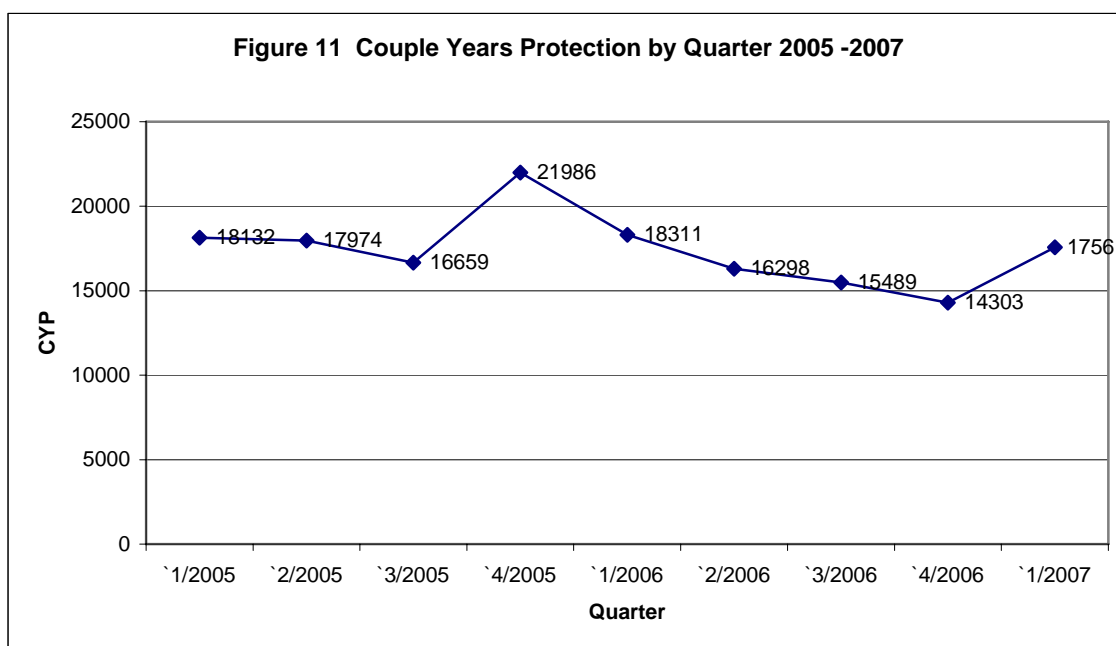
Table 25 Number of Facilities Experiencing a Stock-Out of Family Planning Commodities by Type

Lo-Fem	Overette	Male Cond	Female Cond	Copper T	Micro G	Micro N	Depo	Norigynon	Implants
6	59	16	31	12	32	50	6	66	9

The three Regions that most commonly had stock-out in most of their Districts in five or more commodities were Ashanti, Central and Western Regions.

Accepter Rates and Couple Years Protection

Quality Health Partners has been tracking Couple Years Protection (CYP) and the estimated contraceptive prevalence rate (CPR) in the 30 target Districts since the first quarter of 2005. In 2006, there was a steady decline in CYP performance throughout the year (Figure 11). And by the last quarter of that year, the quarterly CYP achievement had reached a low point for the quarters measured. In the first quarter of 2007 there has been an increase. The data represented in Figure 10 do not include results from the Regional Hospitals in each area, only District level facilities.



There are a number of factors that may be affecting the decline in CYP in the 30 target Districts.

- Loss of skilled LAPM trainers and providers, and low caseload combining to effectively eliminate LAPM from the mix of FP methods available at some facilities.
- Depletion of Norplant stocks and non-availability of Jadelle to replace it during late 2006 and the first half of 2007.
- Ineffectual recording of counseling on LAM and Natural FP methods provided to clients.
- Ineffectual promotion of condoms

- Intermittent stock-outs of certain methods (IUDs, condoms, spermicides and in rare cases injectables).

Family Planning – Key Findings

- Infection prevention measures have improved in facilities where procedures (such as IUD and Norplant insertions) are performed.
- Provider knowledge of essential counseling topics is good overall and providers almost universally discuss all FP options with clients.
- Facilities have benefitted from QHP equipment procurement to improve the basic overall service provided.
- Complete stock-outs of a type of contraceptive happened in 23 facilities and commodity security/inventory management practices need to be improved in a number of districts.

Maternal and Neonatal Health

Basic and Comprehensive Essential Obstetric Care Services

The World Health Organization's definition of Basic and Comprehensive Essential Obstetric Care services is outlined in the following table.

Table 26 World Health Organization Definitions of BEOC and CEOC

Basic Essential Obstetric Care	Comprehensive Essential Obstetric Care
Administration of parenteral antibiotics, Administration of parenteral oxytocics, Administration of parenteral anti-convulsants for pre-eclampsia and eclampsia, Perform manual removal of retained placenta, Perform removal of retained products of conception, Perform assisted vaginal delivery.	All Basic Essential Obstetric Care PLUS+ Surgery, Anesthesia and Blood Transfusion.

While the measurement of Basic Essential Obstetric Services (BEOC) was not calculated or tracked from baseline, many of the components of BEOC are reflected in the QHP program. Specifically, QHP has been working with GHS and its facilities to ensure that emergency and routinely used medicines are available in the delivery unit of facilities and that best practices such as the use of oxytocics in the third stage of labor and use of magnesium sulfate to control eclampsia are followed, even at the health centre level. As part of QHP supported Life Saving Skills (LSS) training, midwives were also taken through the process of a manual removal of a placenta. The only part of BEOC where QHP does not specifically focus is on vacuum extraction, although some of this need may have been addressed through donations made to some target facilities by UNFPA.

Since baseline – there have been significant increases in the availability of key drugs such as oxytocics and anti-convulsants in delivery units at health centres. There may have been an increase in the availability of parenteral antibiotics in the delivery unit, but because the assessment at baseline looked at availability in the facility (not specifically in the delivery unit) it is difficult to discern whether there has been a measurable increase (Table 27). Although QHP has supported LSS training for more than 300 midwives there has been no significant increase in the percentage of midwives reporting that they can perform a manual removal of a placenta. This finding needs more investigation. Although the overall percentage of health centres that have all the prerequisites for BEOC is still low (13.8%) it has improved significantly since baseline ($p < .0001$).

Table 27 Availability of BEOC in Health Centres (Baseline and Midterm)

	% of facilities had drugs available ²						% of Facilities can perform / use				% of facilities have all items for BEOC (all items in all columns)	
	Parenteral antibiotics		Parenteral oxytocics		Parenteral anti-convulsants		Manual removal of retained placenta		Vacuum extractor ³			
	BL	MT	BL	MT	BL	MT	BL	MT	BL	MT	BL	MT
Health centres	65.6	65.1	71.3	98.4	0.8	84.5	65.1	69.8	6.6	25.6	0.0	13.8
Regions												
Ashanti	85.7	43.8	92.9	100.0	0.0	82.4	57.1	52.9	0.0	5.9	0.0	5.9
BAR	100.0	42.9	83.3	100.0	0.0	66.7	83.3	71.4	16.7	42.9	0.0	14.3
Central	55.3	77.8	55.3	100.0	0.0	92.7	61.4	85.5	8.5	32.7	0.0	20.0
Eastern	87.5	100.0	87.5	100.0	12.5	100.0	100.0	100.0	12.5	0.0	0.0	0.0
GAR ¹	50.0	0.0	100.0	100.0	0.0	80.0	50.0	0.0	0.0	0.0	0.0	0.0
Volta	57.7	47.1	61.5	94.1	0.0	76.5	50.0	29.4	3.8	23.5	0.0	0.0
Western	70.6	71.4	94.1	95.5	0.0	72.7	81.3	81.0	5.9	33.3	0.0	22.7
Totals	65.6 n=122	65.1 n=126	71.3 n=122	98.4 n=129	0.8 n=122	84.5 n=129	65.1 n=109	69.8 n=129	6.6 n=122	25.6 n=129	0.0 n=122	13.8 n=130
p values	1.000		<.0001		<.0001		.4881		<.0001		<.0001	

¹ A high number of zeros here is due to the low number of facilities sampled (n=5).

² At baseline the availability of antibiotics and anti-convulsants was assessed at the pharmacy level. At midterm the availability of all three drugs was assessed in the delivery unit on the day of the assessment.

³ At baseline whether a facility had a functioning piece of equipment was assessed. At midterm whether the facility had a provider who could perform a vacuum extraction was assessed. So these measures are not directly comparable.

Comprehensive Emergency Obstetric Care (CEOOC) which is comprised of all of the components of BEOC with the addition of blood transfusion and ability to perform a cesarean section operation – has not changed appreciably in the target hospitals since the baseline assessment. A little over half (51.4%) of hospitals meet the criteria for CEOOC including most Regional hospitals and a little less than half (43.3%) of District hospitals (Table 28).

Table 28 Availability of CEOC in Hospitals

	% of facilities have all items for BEOC		% of facilities can perform c-sections		% of facilities can perform blood transfusion		% of facilities have all items for CEOC	
	Baseline	Midterm	Baseline	Midterm	Baseline	Midterm	Baseline	Midterm
Type of Facility								
Regional Hospitals	71.4	85.7	100.0	100.0	100.0	100.0	71.4	85.7
District / Mission Hospitals	44.4	48.3	92.3	89.7	88.5	93.3	44.4	43.3
Regions								
Ashanti	80.0	60.0	100.0	100.0	100.0	100.0	80.0	60.0
BAR	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Central	46.2	53.8	83.3	76.9	84.6	84.6	46.2	46.2
Eastern	50.0	0.0	100.0	100.0	100.0	100.0	50.0	0.0
GAR	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Volta	50.0	37.5	100.0	100.0	100.0	100.0	50.0	33.3
Western	0.0	75.0	100.0	100.0	80.0	100.0	0.0	75.0
Totals	50.0 (n=36)	55.6 (n=36)	93.8 (n=32)	91.7 (n=36)	90.9 (n=33)	94.6 (n=37)	50.0 (n=34)	51.4 (n=37)
p values	.8109		1.000		.6610		1.000	

The sole Regional hospital that did not meet CEOC criteria did not have parenteral antibiotics in the delivery unit. For District hospitals a combination of three factors influenced the low level of BEOC attainment, a lack of parenteral antibiotics in the delivery unit, not all facilities had a provider who could perform a manual removal of a placenta and not all facilities had a provider who could perform a vacuum extraction. The details of BEOC coverage in hospitals at midterm is provided in Table I in the Appendix.

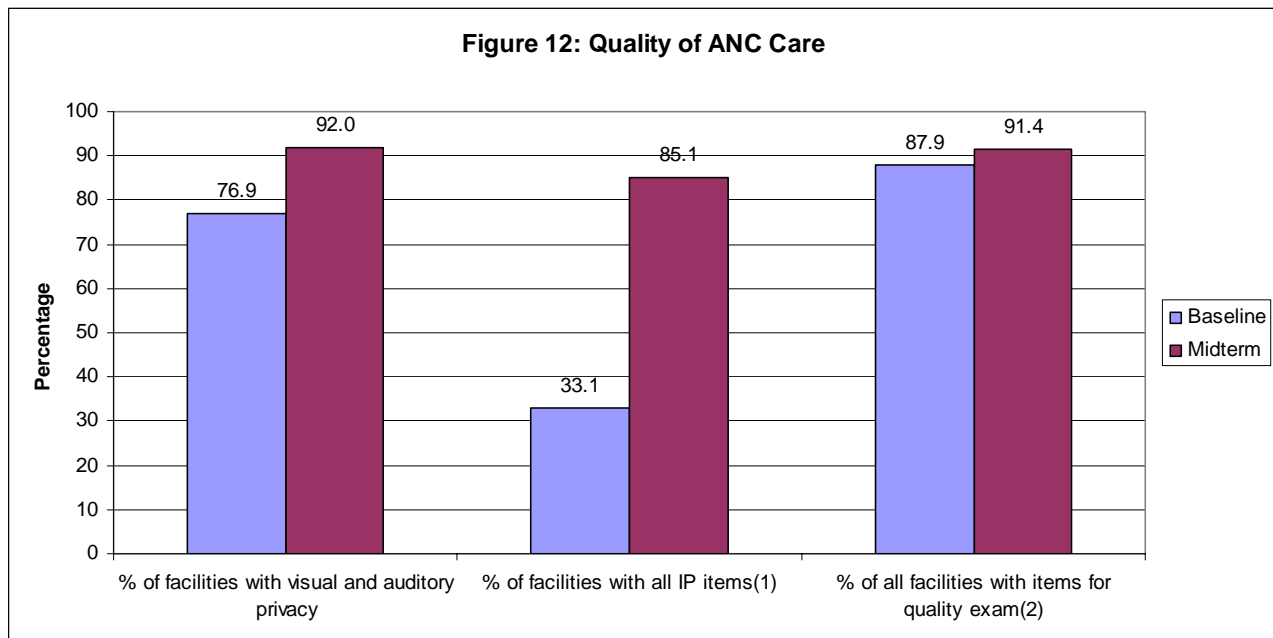
BEOC and CEOC – Key Findings

- Few health centres (13.4%) meet all the criteria for BEOC, however there have been remarkable strides towards improving the availability of key drugs in the delivery units.
- Over half (51.4%) of hospitals meet all of the criteria for CEOC. The main constraints for hospitals are having qualified staff to perform a manual removal of a placenta and/or a vacuum extraction.

Ante-Natal Care

Focused-ANC. The Ghana Health Service has now adopted the best practice of focused-ANC and has been providing in-service training for midwives so they can start implementing this client focused – comprehensive care program. QHP has supported training for more than 100 providers in focused ANC and has supported the GHS effort to implement the program at the facility level by providing technical assistance and supervisory support. At midterm 84.3% of facilities reported that they are implementing a focused-ANC approach and more than 90% of health centres are using this method.

Basic measures of ANC quality. Some basic measures of quality in ANC care are client access to privacy, the availability of all infection prevention measures and the availability of basic equipment in each consulting room. Privacy for ANC clients had increased significantly from baseline ($p=.0009$) with 92.0% of clients having access to a private room for their consultation. Infection prevention measures have also increased significantly ($p<.0001$) with more than 85% of facilities having all of the necessary items in place (Figure 12 – details available in Table J in the Appendix).



¹ Infection-prevention items assessed were clean gloves, soap and water and a sharps container.

² Functioning blood pressure apparatus, fetal stethoscope.

At midterm the percentage of facilities reporting a hard sided, pedal operated, lined waste receptacle was a little over half (55.6%). While having this type of receptacle is not a requirement in the current infection prevention definition, management of waste in medical facilities is an area that remains a concern. More details about the increases in infection prevention practices in the ANC area are available in Table K in the Appendix. In terms of basic equipment in the ANC area – the facilities are relatively well equipped with more than 90% having the two main pieces of equipment (sphygmomanometer and fetal stethoscope). QHP did not conduct any procurement for equipment for ANC facilities before the midterm analysis and it appears that there have been no significant increases in the availability of this equipment. Procurement of some ANC/MNH equipment was in process at the time of the midterm.

Another gauge of the quality of ANC services is to measure unprompted provider response on the routine services they provide. During the midterm assessment, midwives were asked what key topics are discussed or services offered at the ANC clinic. Using this top-of-the-mind methodology does not provide a definitive list of the services provided, but does give an indication which services are most often provided. Overall midwives mentioned most of the key topics more than 60% of the time. Family planning appears to be one area that is not foremost in the minds of ANC providers and this could be further emphasized (Table 29).

Table 29 Comprehensiveness of ANC Services (Midterm)

% of providers who mentioned these routine services are offered at the ANC clinic (unprompted)					
	TT vaccine	SP for IPT	FP	Birth prepared-ness	ITN info or sell ITN
Type of facility					
Regional Hospitals	57.1	71.4	57.1	85.7	71.4
District/Mission Hospitals	58.6	82.8	17.9	72.4	50.0
Health Centres/Other	63.3	85.6	46.8	77.7	66.9
Region					
Ashanti	90.9	95.5	77.3	95.5	81.8
Brong Ahafo	54.5	72.7	27.3	63.6	63.6
Central	60.6	81.7	46.5	76.1	63.6
Eastern	80.0	100.0	66.7	90.0	90.0
Greater Accra	83.3	100.0	0.0	66.7	16.7
Volta	61.5	88.5	19.2	76.9	72.0
Western	37.9	75.9	34.5	69.0	48.3
Totals	62.3 (n=175)	84.6 (n=175)	42.5 (n=174)	77.1 (n=175)	64.4 (n=174)

ANC drugs. Overall there were few shortages of iron and folic acid in the target facilities (6.9%) during the past three months. These drugs have largely been available. Of more concern were the shortages of sulfadoxine/pyrimethamine (SP) reported in the past three months at 18.3% of facilities. If nearly 1 in 5 facilities is experiencing a shortage of SP during a quarter, this will have a significant impact on the coverage of intermittent preventive treatment (IPT) for pregnant women. The reasons for these shortages (national level, Regional central stores or ordering error on the part of the facility) were not investigated during the midterm assessment (Table 30).

Table 30 Shortages of key ANC drugs in the past three months (Midterm 2007)

	% of facilities shortage iron or folic	% of facilities shortage of SP
Type of Facility		
Regional Hospitals	28.6	28.6
District/Mission Hospitals	6.9	20.7
Health Centres/Other	5.8	17.3
Region		
Ashanti	4.5	9.1
Brong Ahafo	9.1	9.1
Central	5.6	26.8
Eastern	10.0	20.0
Greater Accra	16.7	16.7
Volta	7.7	15.4
Western	6.9	10.3
Totals		
	6.9 (n=172)	18.3 (n=175)

IPT (Malaria in Pregnancy). In 2005, as part of the revised malaria drug policy, the GHS changed the practice for intermittent preventive treatment (IPT) of malaria in pregnancy. They revised the weekly prophylaxis with chloroquine to three treatments with sulfadoxine-pyrimethamine (SP) starting after 16 weeks. QHP supported the development of the training manual for providers on how to administer SP. The midterm analysis was the first time that an attempt to measure how widespread the routine distribution of SP has become. In the first quarter of 2007, compliance with IPT1 was fairly high – with 62.5% of clients estimated to have received a dose (Table 31). The results for IPT2 and IPT3 drop off dramatically after that with only an estimated 12.0% of ANC attendees receiving IPT3. Anecdotal comments from midwives are that women come for their first ANC visit late in the pregnancy, however at the same time they are reporting that in 2005 62% of women had four or more ANC visits and in 2006 57.8% of women had four or more ANC visits.⁸ Another commonly cited problem is the lack of laboratory facilities to test for G6PD deficiency or sensitivity to sulfa drugs. These may affect the successful implementation of the IPT policy.

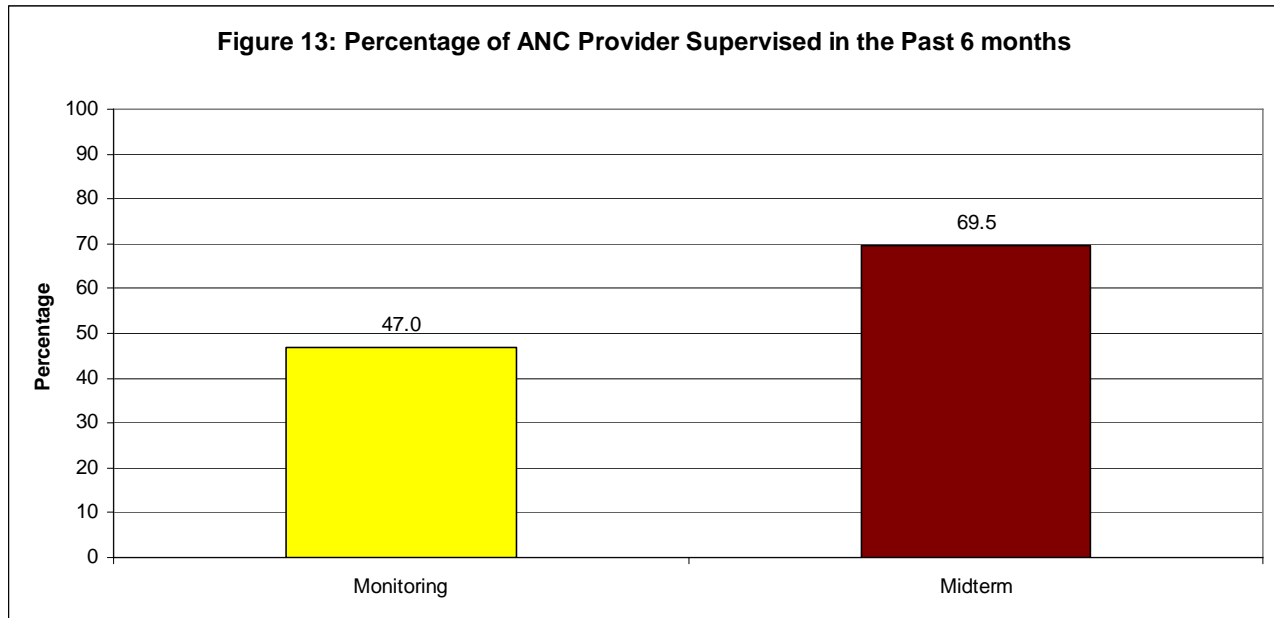
Table 31 Percentage of ANC attendees who received IPT January – March 2007

Month	ANC Registrants	ANC Attendance	IPT1	IPT2	IPT3
Jan 2007	15731	40337	8723	4437	2406
Feb 2007	11460	36633	7389	4503	2460
Mar 2007	10460	37766	7427	4929	2731
Totals	37651	114736	23539	13869	7597
Percentage Receiving IPT			62.5	19.9	12.0

One promising best practice was identified by the midterm analysis. This is the practice of providing the second and third doses of (SP) to pregnant women using community health nurses and case finding in the communities. A total of 50 (25.9%) facilities are currently using this method to improve IPT coverage for pregnant women. Currently there is no statistically significant difference in the coverage for IPT between facilities that use this best practice and those that do not, so an investigation of how these doses are being recorded may need to be conducted. Awutu Efutu Senya District in Central Region has pioneered community based case finding and provides

an example to be emulated, although for the first quarter of 2007 their results were only marginally better than the overall results.

Supervision and In-service training. The Quality Health Partners project began tracking the frequency of recent supervision by service unit in December 2006 during the first round of monitoring. In the ANC area a little less than half (47.0%) of providers reported they had been supervised in the past six months – which increased to 69.5% at midterm – a statistically significant increase ($p < .0001$). Providers in the ANC units had fairly good access to in-service training with more than three quarters (75.5%) meeting the GHS minimum criteria of receiving training once every three years (Figure 13 – details available in Table L in the Appendix).



Ante-Natal Care – Key Findings

- Improvements in privacy for clients and infection prevention measures in the ANC units have been statistically significant and contribute to the quality of patient care.
- Overall ANC providers mention most of the main ANC services and counseling topics more than 60% of the time without prompting showing good overall coverage of ANC topics.
- There are rarely shortages of iron and folic acid in the target facilities, but shortages of SP affected as many as 1 in 5 facilities in the most recent three month period.
- Supervision of ANC units has been strong and improved significantly since December 2006.
- Three-quarters of ANC providers had in-service training in the past 3 years, in line with GHS policy.
- The percentage of pregnant women who receive at least one dose of IPT is 62.5%, but the percentage who received all three doses is considerably less.

Delivery Care

Overview. In one year in the target facilities, there are approximately 45,000 births. Regional Hospitals manage most of the births, followed by District hospitals and then health centres (Table 32).

Table 32 Number of Births and Average Number By Type of Facility

	Deliveries in the Target Facilities				
	Jan 2007	Feb 2007	Mar 2007	Total	Average/Month per facility
Regional Hospitals	1237	1017	1533	3787	541
District / Mission Hospitals	1992	1778	2218	5793	193
Health Centres / Other	1760	1648	2052	5460	42
Totals	4989	4443	5803	15040	

Training. Since the baseline assessment, QHP has focused on supporting life saving skills (LSS) training for midwives in the target facilities and supplementing this training with cross-cutting quality improvement training in infection prevention, facilitative supervision, quality assurance and in some cases COPE. Monitoring the quality of delivery services and providing technical assistance to improve quality has been a main focus of the project.

Quality of delivery services. There have been significant improvements in the availability of all infection prevention items in delivery units increasing from 51.0% of facilities at baseline to 72.3% of facilities at midterm ($p < .0001$). The improvement has been most marked at the health centre level. Details about the findings related to infection prevention in the delivery unit are available in Table M in the Appendix. Also the percentage of facilities where delivery rooms have all of the key infrastructure and furnishings has increased significantly so that almost three-quarters (73.7%) of facilities have all basic equipment. This increase has been aided in large part by a concerted effort to provide women who are delivering with more privacy, which is part of the definition of quality. The percentage of facilities that have copies of the standards (and in the case of partographs – routinely use them) has remained the same since baseline.

Table 33 Quality of Delivery Services

	% of facilities with all infection-prevention items ¹		% of facilities with all delivery room infrastructure and furnishings ²		% of facilities with standards and protocols ³	
	Baseline	Midterm	Baseline	Midterm	Baseline	Midterm
Type of Facility						
Regional Hospitals	71.4	71.4	71.4	100.0	71.4	42.9
District/ Mission Hospitals	78.6	69.0	53.6	72.4	55.6	31.0
Health Centres/ Other	43.4	73.1	36.1	72.5	24.5	31.5
Regions						
Ashanti	73.7	68.2	52.6	90.9	21.1	4.8
Brong Ahafo	0.0	100.0	50.0	70.0	12.5	88.9
Central	63.3	70.6	45.0	76.5	39.7	42.0
Eastern	63.6	66.7	27.3	100.0	33.3	44.4
Greater Accra	80.0	50.0	60.0	83.3	100.0	44.4
Volta	31.3	73.1	34.4	46.2	41.7	16.7
Western	31.8	76.0	27.3	69.2	4.8	30.8
Totals	51.0 (n=157)	72.3 (n=166)	40.8 (n=157)	73.7 (n=167)	32.6 (n=144)	31.9 (n=163)
p values	<.0001		<.0001		.9032	

¹ Soap, water, single use towel, sharps container, gloves and decontamination solution.

² Visual and auditory privacy, BP cuff, delivery tray

³ Partographs and National Reproductive Health Protocol

At midterm 68.5% of facilities reported that they routinely use partographs (see Table 36 below) and 51.0% have a copy of the National Reproductive Health Protocols, but together these numbers remain low. The National Reproductive Health Protocols are in process of being revised at the current time and it is planned that new copies will be made available to all facilities when they are completed.

Medications for delivery. When a woman comes to a facility to deliver her baby – her care should not be delayed by a provider who has to search the pharmacy for the right drugs. In an effort to support the best practice of having key drugs on hand in each delivery unit, QHP examined the availability of these drugs on the day of the assessment during the midterm (Table 34). Overall, most facilities had key drugs available in the delivery unit, with an especially high percentage of facilities having an oxytocic drug – key in the management of the third stage of labor. More emphasis needs to be put on the availability and use of magnesium sulfate to manage eclampsia, especially at the health centre level, where there is capacity. Currently GHS policy is for the midwife to identify eclampsia, give first aid and refer to a hospital. The message about having an injectable antibiotic on hand (and perhaps more information on its uses) also needs further reinforcement. The results presented in Table 34 (69.8% of facilities had an injectable antibiotic) may be artificially low, because many antibiotics are available as infusions now and it is not clear whether data collectors included infusion antibiotics as injectables – although they serve the same function.

Table 34 Availability of key drugs in delivery service area on day of midterm assessment

	% of facilities that had a shortage of these drugs on the day of the midterm visit						
	Valium inj	Mag Sulf Inj	Vit K Inj	IV infusion	Ergomet Inj	Oxytocic Inj	Antibiotic Inj
Type of Facility							
Regional Hospitals	100.0	100.0	85.7	100.0	100.0	100.0	85.7
District/Mission Hospitals	89.7	89.7	86.2	100.0	100.0	100.0	86.2
Health Centres/Other	80.6	33.4	75.0	96.9	96.9	96.9	65.1
Region							
Ashanti	86.4	27.3	72.7	95.5	95.5	95.5	47.6
Brong Ahafo	77.8	44.4	77.8	100.0	100.0	100.0	60.0
Central	83.6	67.2	83.6	100.0	95.5	100.0	80.6
Eastern	100.0	77.8	88.9	100.0	100.0	100.0	88.9
Greater Accra	83.3	16.7	66.7	100.0	33.3	100.0	20.0
Volta	80.0	28.0	84.0	92.0	96.0	96.0	60.0
Western	76.9	24.0	57.7	96.2	96.2	92.3	76.0
Totals	82.9 (n=164)	46.6 (n=163)	77.4 (n=164)	97.6 (n=164)	93.9 (n=165)	97.5 (n=163)	69.8 (n=162)

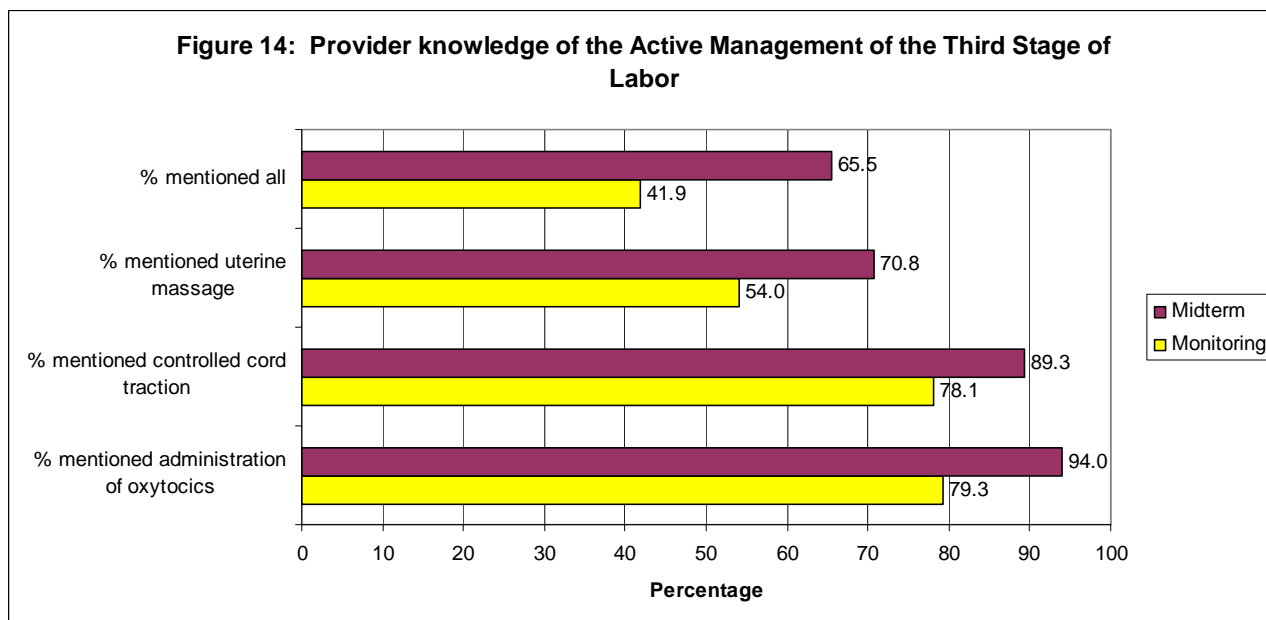
Emergency Packs. In a related best practice, pre-packaged emergency trays are now required in delivery units, so all of the drugs, supplies and equipment a provider needs to address an emergency are at their fingertips. QHP and GHS are monitoring the availability of these emergency packs and working with providers to develop them in facilities where they do not yet exist. By the midterm assessment 56.4% of facilities had an emergency pack for post-partum hemorrhage and 50.3% had an emergency pack for eclampsia. In hospitals nearly three-quarters (74.2%) had an emergency pack for cesarean sections (Table 35), with some strong regional variation.

Table 35 Availability of Emergency Packs in the Delivery Units (Midterm 2007)

	Emergency Pack for Post-partum Hemorrhage	Emergency Pack for Eclampsia	Emergency Pack for Cesarean Sections (Hospitals Only)
Type of Facility			
Regional Hospital	85.7	85.7	80.0
District / Mission Hospitals	69.0	67.9	73.1
Health Centres/ Other	52.0	44.4	
Region			
Ashanti	9.1	9.5	80.0
Brong Ahafo	33.3	22.2	100.0
Central	89.7	77.6	84.6
Eastern	100.0	100.0	100.0
Greater Accra	50.0	33.3	100.0
Volta	7.7	7.7	37.5
Western	52.2	52.2	100.0
Totals	56.4 (n=163)	50.3 (n=161)	74.2 (n=31)

If a provider has attended training in the past three years, this had a significant impact ($p < .001$) on whether they had emergency pack for post-partum hemorrhage and for eclampsia, suggesting that training may have been an effective dissemination technique to promote emergency packs.

Active Management of the Third Stage of Labor (AMTSL). All three steps in the active management of the third stage of labor are key to producing a good outcome for a delivery. While the gold standard to assess compliance with these steps is to observe a provider during a delivery, for the purposes of the midterm assessment and routine monitoring, provider knowledge is substituted as a proxy for observation. During the first round of monitoring in December 2006, 41.9% of providers mentioned all three steps in the active management of the third stage, unprompted. By the midterm assessment in September 2007 65.5% of providers mentioned all three steps unprompted. The use of uterotonic drugs received the highest number of mentions (94.0% of providers). There were significant increases in provider knowledge about the three key steps between December 2006 and September 2007 (Figure 14, details available in Table N in the Appendix).



Having attended training in the past three years had a significant impact on whether a provider could mention all of the key steps in the AMTSL. Supervision in the last six months, had a significant impact on whether providers mentioned the administration of oxytocics.

Partograph use. The consistent use of the partograph has been proven to be a best practice to prevent maternal mortality and despite their long history of use in Ghana, they are not always consistently used in the target facilities. In health centres, where their use is critical in terms of timing the need for referral to the next level of care, only 63.6% were found to use them consistently. There also appear to be large Regional differences with the target Districts in Ashanti and Western Regions clearly needing more in-depth follow up on the use of the partograph (Table 36). Table 36 only presents results from the midterm assessment because at baseline only the presence of partographs was assessed, not their consistent use.

Table 36 Provider Use of Partographs and Referral Notes (Mid-term 2007)

	Provider consistently uses partographs (evidence seen)	Provider uses a standard referral note for next level of care
Type of Facility		
Regional Hospitals	100.0	100.0
District/ Mission Hospitals	84.6	78.6
Health Centres/ Other	63.6	68.5
Region		
Ashanti	40.0	50.0
BAR	100.0	100.0
Central	70.8	83.1
Eastern	100.0	100.0
GAR	66.7	100.0
Volta	87.5	73.1
Western	42.9	26.1
Totals	68.5 (n=153)	71.3 (n=160)

Similarly, facilities in the target Districts in Ashanti and Western Regions do not seem to use the standard referral note for the next level of care as frequently as other facilities do, although nearly two-thirds of facilities (71.3%) are doing so.

Supportive Supervision. A little more than half of the delivery units reported external supervision at midterm, a significant increase over the results from the monitoring conducted in December 2006. There appears to be a low rate of supervision in the target Districts in Ashanti and Western Regions.

The percentage of providers trained in the last three years is relatively high at 70.1%. In the last year (as of December 2006) 46.4% of providers reported in-service training (Table 37).

Table 37 Supportive Supervision in the Delivery Unit

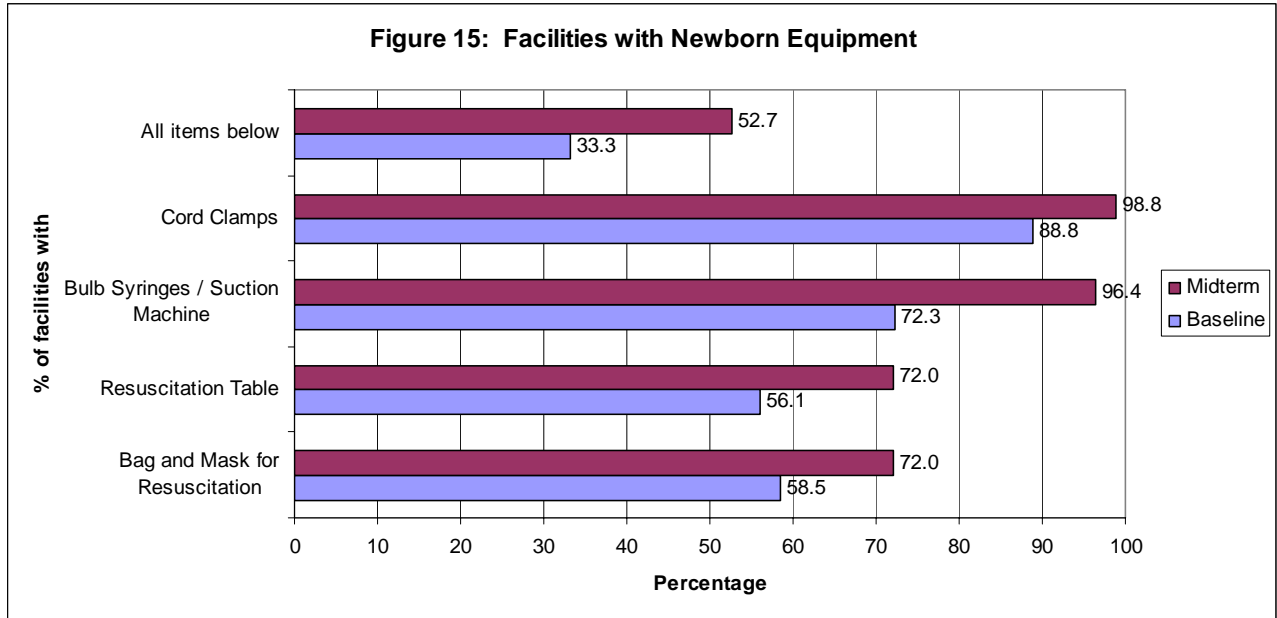
	% of facilities supervised in last 6 months		% of providers trained	
	Monitoring	Midterm	Monitoring (last 12 months)	Midterm (last three years)
Type of Facility				
Regional Hospitals	50.0	57.1	75.0	66.7
District/Mission Hospitals	41.4	86.7	46.7	72.4
Health Centres/Other	22.8	46.2	45.2	69.7
Region				
Ashanti	27.8	18.2	27.3	61.1
Brong Ahafo	57.1	90.0	14.3	80.0
Central	18.5	52.2	53.1	86.4
Eastern	0.0	77.8	42.9	87.5
Greater Accra	80.0	100.0	80.0	83.3
Volta	33.3	88.9	42.3	37.0
Western	33.3	19.2	44.4	54.5
Totals	27.2 (n=147)	53.9 (n=167)	46.4 (n=138)	70.1 (n=157)

Delivery Care – Key Findings

- Provider knowledge of the three key steps in the active management of the third stage of labor is high and has been continually improving.
- Infection prevention and patient privacy have seen significant gains since baseline.
- The availability of key drugs for managing labor – especially oxytocics is very high and is improving across the board.
- The introduction of emergency packs has been very successful, with more than 50% of facilities now having emergency packs for PPH and eclampsia.
- Use of partograph needs to be reinforced, particularly at health centres.
- Delivery units reported supervision 53.9% of the time in the last six months, with some strong Regional variation.

Availability of Quality Neonatal Care Practices

Basic equipment for newborn care. The availability of basic equipment to care for newborns including a pediatric bag and mask for resuscitation, resuscitation tables, suction machines/bulbs and cord clamps have all increased significantly since baseline. The improvement is especially noticeable at the health centre level, where large increases in the availability of equipment and supplies have taken place (Figure 15, Detailed results available in Table O in the Appendix).



Newborn care practices. In order to assess the quality of newborn health care during the midterm assessment a number of questions were asked to providers. Two of these questions were also assessed at baseline, namely the percentage of providers who routinely suction airways of a newborn and the percentage of providers who bath the newborn only after six hours (to maintain warmth). There was a significant increase in the percentage of providers at facilities who report routine suction, up from 50.7% at baseline to 99.4% at midterm. There was already a high percentage of providers who bath the newborn after six hours at baseline and this increased (although not significantly) at midterm to 92.0% (Table 38).

Table 38 Routine Newborn Care Practices by Facility Type and Region

	% of facilities that suction airways of newborn		% of facilities that provide immersion bath after 6 hours	
	Baseline	Midterm	Baseline	Midterm
Type of Facility				
Regional Hospitals	57.1	100.0	85.7	100.0
District/Mission/Hospitals	44.4	100.0	85.2	86.2
Health Centres/Other	51.9	99.2	83.5	92.9
Region				
Ashanti	68.4	95.4	100.0	95.0
Brong Ahafo	50.0	100.0	100.0	80.0
Central	31.0	100.0	66.7	98.5
Eastern	44.4	100.0	66.7	98.5
Greater Accra	40.0	100.0	100.0	83.3
Volta	95.7	100.0	95.7	100.0
Western	45.0	100.0	100.0	75.0
Total	50.7 (n=142)	99.4 (n=166)	83.9 (n=143)	92.0 (n=163)
p values	<.0001		.5519	

Newborn care in first six hours. Providers were asked to describe the key activities for care of the newborn in the first six hours. The responses reported here are unprompted (Table 39). The most commonly mentioned care activities were early breastfeeding (88.7%) and maintaining warmth (90.5%). The least commonly mentioned activities were eye care (66.3%) and vitamin K injections (65.3%). When prompted the responses were much higher. The responses in Table 39 were unprompted so they do not reflect actual practice, but rather, “top of the mind” knowledge of practice.

Table 39 Other newborn care practices (Monitoring Dec 2006 and Midterm Sep 2007)

	% of providers mentioning other newborn care practices : UNPROMPTED Multiple response possible													
	APGAR score		Maintain warmth		Cord Care		Eye Care		Resuscit. of babies		Early BF		Vitamin K injection	
Type of Facility														
	Mon	Mid	Mon	Mid	Mon	Mid	Mon	Mid	Mon	Mid	Mon	Mid	Mon	Mid
Regional Hospitals	50.0	85.7	75.0	100	75.0	100	25.0	85.7	66.7	100	100	100	75.0	71.4
District/Mission/Hospitals	64.5	80.0	93.5	90.0	76.7	79.3	43.3	69.0	50.0	71.4	83.9	86.7	50.0	76.7
Health Centres/Other	61.1	70.0	78.8	90.1	74.6	84.5	40.9	64.6	56.4	65.6	81.6	88.5	50.0	62.3
Totals Baseline (n=148) Midterm (n=168)	61.5	72.5	81.8	90.5	75.0	84.2	41.0	66.3	55.4	68.1	82.6	88.7	50.7	65.3

In-Service Training. No specific question about supervision was asked related to neo-natal care – assuming that supervision of the delivery unit would include neo-natal care. During the monitoring exercise provider were asked if they had received in-service training in newborn care in the last 12

months. A total of 34.5% of providers has received some training. During the midterm assessment, a total of 58.7% reported in-service training in newborn health in the past three years.

Neonatal Care – Key Findings

- The availability of essential newborn equipment is increasing across the board and the change is most noticeable at the health centre level.
- Provider knowledge of the need to immediately suction the airways of the newborn has increased significantly.
- General provider knowledge of the components of essential newborn care is improving.

Integrated Disease Surveillance and Response (IDSR) Services

Ghana still has endemic guinea worm, seasonal cholera outbreaks and meningitis, is surrounded by countries that have recently had outbreaks of polio and in Ghana itself in 2007, there was an outbreak of avian influenza in poultry. In this context, collecting, reporting and using surveillance data is a crucial set of activities to protect the health of communities.

IDSR training. The GHS adopted the Integrated Disease Surveillance and Response approach and QHP has helped to scale up capacity for IDSR in the 200 facilities in the target Districts. More than 900 providers were trained in IDSR and it appears that in Districts where whole teams from the District Health Directorate were trained together with providers, IDSR methods were most effectively introduced.

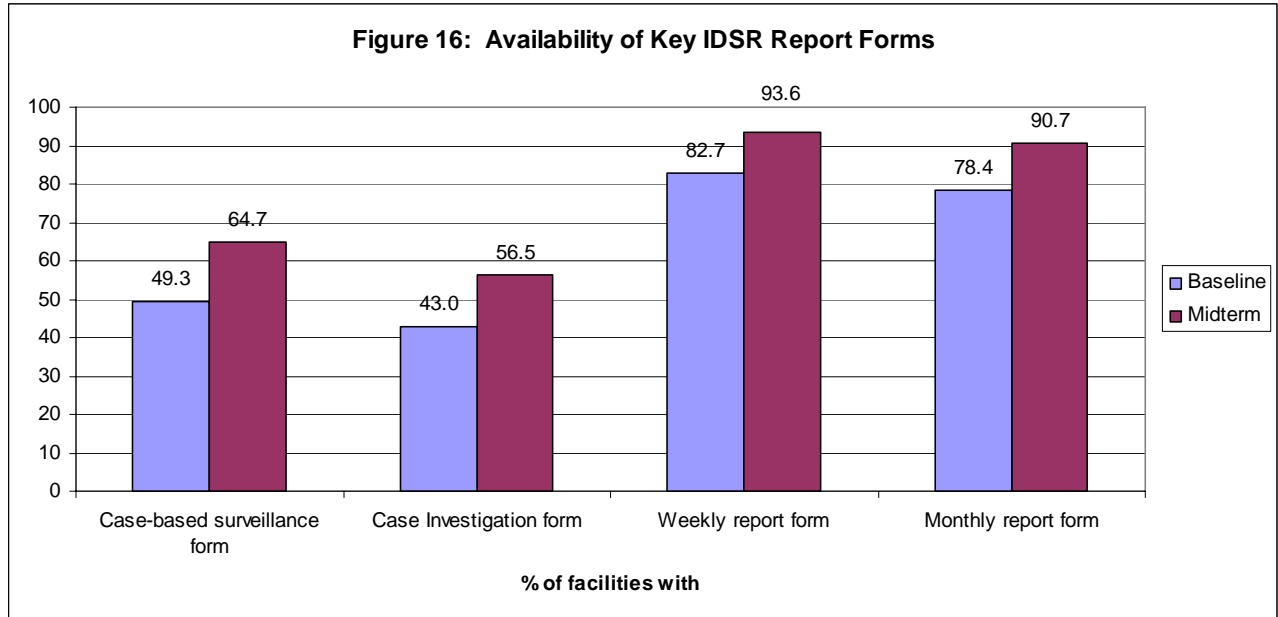
IDSR standards, guidelines and other materials. The availability of the key standards and guidelines for IDSR including the National Technical Guidelines (69.8%), Standard Case Definitions (82.0%) and the Standard Treatment guidelines (89.9%) is good. More than half of the facilities report that they have copies of the COMDAB – which is an analysis book that helps providers analyze their data and use it for decision making (Table 40). The Regions and Districts reported that the COMDAB analysis book was available 83.3% of the time.

Table 40 Availability of Standard Treatment Guidelines and IDSR Protocols

	% of facilities with National Technical Guidelines on IDSR		% of facilities with Standard Case Definitions		% of facilities with Standard Treatment Guidelines		% of facilities with COMDAB ¹ (Midterm only)
	Baseline	Midterm	Baseline	Midterm	Baseline	Midterm	
Type of Facility							
Regional Hospitals	75.0	100.0	75.0	100.0	75.0	100.0	50.0
District/Mission Hospitals	30.4	84.0	26.1	84.0	83.3	92.9	64.0
Health Centres/Other	7.5	60.0	12.8	80.9	92.8	88.7	58.7
Region							
Ashanti	5.3	95.7	0.0	100.0	89.5	78.3	87.0
Brong Ahafo	33.3	91.7	33.3	100.0	83.3	90.9	83.3
Central	11.5	74.2	26.4	80.0	92.3	82.9	91.9
Eastern	50.0	66.7	50.0	66.7	66.7	100.0	71.4
Greater Accra	0.0	83.3	0.0	83.3	100.0	100.0	50.0
Volta	7.1	35.0	3.4	76.9	96.7	100.0	7.7
Western	19.0	44.4	14.3	26.9	86.4	96.3	20.0
Totals	13.4 (n=134)	69.8 (n=176)	16.9 (n=136)	82.0 (n=172)	90.6 (n=139)	89.9 (n=186)	59.2 (n=174)
p values	<.0001		<.0001		.5889		

Communicable Disease Analysis Book

Report Forms. The availability of IDSR reporting forms in the facilities has also increased significantly for all forms. The highest availability of forms was for the weekly (93.6%) and monthly (90.7%) reports that every facility is expected to submit to the District level (Figure 16, Detailed results available in Appendix P).



The new revised IDSR tools were largely not available in the facilities at baseline, yet there was a high percentage of facilities that report having them. It may be that other weekly and monthly reporting forms were cited as available at baseline, thereby explaining high rates for these forms.

Quality of Disease Surveillance Reporting. At the Regional and District level 71.1% of health directorates have a check sheet that shows the timeliness of reporting. The health directorates also report that 51.6% of the weekly returns are timely and say that 61.3% of monthly returns are timely – which tallies closely with evidence from the field (Table 41). During the midterm assessment, monthly and weekly IDSR reports from each facility were reviewed to assess whether they were all available and filled in correctly. For weekly reports, 60.6% of facilities had all of their reports for the previous three month period. For monthly reports 77.4% of reports were available at the facility level. This represents a significant increase from baseline.

Table 41 Completeness of Reports in Health Facilities

	% of facilities with Weekly Reports Completely* Filled Out in the Past Three Months		% of facilities with Monthly Reports Completely Filled Out in the Past Three Months	
	Baseline	Midterm	Baseline	Midterm
Type of Facility				
Regional Hospitals	14.3	80.0	14.3	80.0
District/Mission Hospitals	32.1	75.0	35.7	78.3
Health Centres/Other	18.9	57.4	36.9	77.2
Region				
Ashanti	15.8	62.5	0.0	69.6
Brong Ahafo	37.5	83.3	50.0	75.0
Central	26.7	48.3	48.3	73.2
Eastern	27.3	66.7	45.5	100.0
Greater Accra	0.0	20.0	0.0	66.7
Volta	21.9	84.2	34.4	86.6
Western	4.5	43.5	31.8	77.3
Totals	21.0 (n=157)	60.6 (n=165)	35.7 (n=157)	77.4 (n=164)
p values	<.0001		<.0001	

*Completely means 80% of more of the reports were filled in correctly and were available for review.

Data for Decision Making. In addition to timeliness of IDSR reports, the use for data for decision making is also very important. At baseline and midterm an assessment was done of whether facilities had any analysis of their demographic data and malaria statistics. Although at midterm only 41.0% of facilities had any analysis of their demographic data and 30.9% had current (to the last quarter) malaria trends, these are significant increases over baseline and represent a trend towards better use of data (Table 42). At the RHMT and DHMT offices, 58.4% had a current malaria graph – showing the trend in caseload displayed.

Table 42 Trend Analysis of Key Priority Diseases in Health Facilities

	% of facilities where demographic data are displayed		% of facilities with a graph of malaria trends current to latest month	
	Baseline	Midterm	Baseline	Midterm
Type of Facility				
Regional Hospitals	20.0	50.0	20.0	16.7
District/Mission Hospitals	16.0	26.1	24.0	36.0
Health Centres/Other	26.8	43.1	15.2	30.6
Region				
Ashanti	10.5	9.1	0.0	43.5
Brong Ahafo	57.1	83.3	71.4	75.0
Central	34.0	57.6	26.4	21.7
Eastern	0.0	87.5	16.7	87.5
Greater Accra	0.0	83.3	0.0	16.7
Volta	33.3	28.2	13.3	23.1
Western	4.5	7.4	0.0	18.5
Totals	24.6 (n=142)	41.0 (n=173)	16.9 (n=142)	30.9 (n=175)
p values	.0027		.0057	

Even more promising, the Regions and Districts reported disease outbreaks in almost half of the areas in the last 12 months and 100% of these outbreaks were investigated and a report was written – illustrating a trend in good use of surveillance data taken to its logical conclusions (Table 43).

Table 43 Management of Disease Outbreaks at the Regional and District Level Midterm

	% of Regions or Districts experiencing a disease outbreak in last 12 months	% of Regions or Districts that wrote a report on the outbreak
Totals	48.4 (n=36)	100.0 (n=14)

This highly successful replication of the WHO disease surveillance and reporting model could usefully be scaled up further throughout Ghana to ensure timely reporting on key infectious diseases and protect the health of communities.

IDSR – Key Findings

- There is good availability of standards and guidelines and reporting forms related to IDSR at present.
- There is a strong trend towards better surveillance reporting and use of data for decision making.
- All disease outbreaks that were reported in the Regions and Districts were investigated and reports were written.
- The institutionalization of IDSR in the target facilities was highly successful.

Recommendations

Human Resources

1. The reduction in the numbers of medical assistants and midwives needs to be investigated to determine whether this is a trend that could have deleterious effects on the quality of health care.
2. The performance appraisal system is not currently functioning very well and standard measures of performance (most basically represented by a job description) are poor. Introduction of a more robust and equitable system (based on evaluation and refinement of an earlier pilot) that provides timely feedback needs to move forward expeditiously.
3. The Ghana Health Service should consider undertaking a survey or updating training records of providers to show who should be prioritized for in-service training (by name). Many staff still do not receive the needed training updates.

Quality Assurance

4. District, Regional and QHP technical teams need to follow up with QA teams in health care facilities to ensure that they are fully functional and have active action plans. To this end, QHP in coordination with the Regions and Districts could begin to measure the number of problems addressed by the QA team during the last quarter to better understand how functional QA teams really are and develop an annual award system to recognize QA teams that are performing well.
5. Facilities that do not have current QA or COPE action plan should be prioritized for any COPE activities that will be sponsored in 2008.

Referral Systems

6. Providers are often using a standard referral note to send a patient to the next level of care. But the availability of the referral policy in the facilities is low and true standardization of referral practice needs to take effect.

Infection Prevention

7. An overall push to improve and institutionalize infection prevention practices must be made in the facilities, especially targeting the correct use of and dilution ratio for decontamination solution in the family planning and delivery units.

Child Health Services

8. IMCI Training appears to be having the intended affect on improving the quality of care for children and more needs to be done to ensure that every facility has an IMCI trained provider giving care. There are some Regions (Ashanti, Eastern and Western) where IMCI follow up needs to be conducted immediately.
9. Provider's use of the child health card (which can also serve as an excellent visual aid for many health education topics) is low and needs to be improved.

Malaria – Treatment of Fever

10. A new malaria job aid that has a better breakdown of the dosing regimen by weight should be developed, field tested and widely distributed to providers.

Family Planning Services

11. There needs to be a concerted effort to promote and provide family planning services in GHS facilities if CYP will increase. New thinking and strategies need to be employed to jump-start this process. Among the ideas in process are making small grants to newly trained FP providers to help them promote their FP services in facilities and communities.
12. QHP will expand activities with GHS to train trainers and providers to improve availability of a full range of methods that are supposed to be provided at each level of facility. A special emphasis is being placed on the introduction of Jadelle to replace Norplant.
13. The three Regions that most commonly had stock-outs of FP commodities in most of their Districts were Ashanti, Central and Western Regions. These Regions need additional training or technical assistance to reduce the incidences of stock outs.

Maternal and Neonatal Health

14. Shortages of SP in one out of five facilities in the past three months need to be investigated further and measures put in place to reduce these shortages.
15. IPT is widely available – but there is little effort to ensure that expectant mothers get all three doses. A better system of tracking women needs to be put in place to ensure a larger percentage of the pregnant population receive all three recommended doses during their pregnancy.
16. More emphasis needs to be put on the availability and use of magnesium sulfate to manage eclampsia, especially at the health centre level where there is capacity. The message about having an injectable antibiotic on hand (and perhaps more information on its uses) also needs further reinforcement. It may be possible to improve the availability and use of these drugs by encouraging the universal use of emergency packs.
17. Supervision of the delivery units needs to be improved, especially in Ashanti and Western Regions. QHP should consider holding the training of trainers for the In-Depth Supervision and On-the-Job Training tool in these Regions to reinforce the need for better supervision of the delivery units there.
18. Consistent use of partographs, especially at the health centre level remains low and needs to be improved.
19. Refresher training in essential newborn care should be a priority as only a little over half of providers (58.7%) had an in-service training in the past three years.

Disease Surveillance

20. The introduction of IDSR was highly successful and it is suggested that in order to maintain that investment, the project continue to monitor disease surveillance in the facilities.

APPENDICES

Table A Percentage of providers who reported in-service training in the last 12 months (monitoring data December 2006)

% of providers who report in-service training by topic						
	Child Health	Family Planning	Ante-Natal Care	Delivery	Neo-Natal Health	HIV
Type of Facility						
Regional Hospitals	25.0	25.0	100.0	75.0	50.0	75.0
District Hospitals	29.6	33.3	60.0	46.7	31.0	63.2
Health Centres	25.0	30.8	52.2	44.8	34.9	55.6
Region						
Ashanti	15.0	75.0	50.0	27.3	5.3	80.0
BAR	25.0	0.0	37.5	14.3	0.0	100.0
Central	21.2	33.9	57.1	53.1	44.3	60.0
Eastern	12.5	28.6	100.0	42.9	57.1	100.0
GAR	40.0	25.0	60.0	80.0	60.0	100.0
Volta	19.4	9.1	60.0	40.7	25.9	40.0
Western	75.0	50.0	35.0	44.4	43.8	33.3
Totals	25.8 (n=159)	31.0 (n=142)	55.1(n=147)	46.0(n=139)	34.5 (n=142)	62.5(n=32)

Table B Availability of Infection Prevention Items in Child Health service delivery area

	% of facilities with hand washing facilities ¹		% of facilities with disposable gloves		% of facilities with sharps container	
	Baseline	Midterm	Baseline	Midterm	Baseline	Midterm
Type of Facility						
Regional Hospitals	71.4	80.0	NA	100.0	85.7	60.0
District/ Mission/ Hospitals	73.1	92.9	NA	96.3	96.2	81.5
Health Centres/ Other	58.7	87.8	NA	92.6	91.3	94.0
Region						
Ashanti	66.7	90.9	NA	71.4	100.0	85.7
BAR	87.5	100.0	NA	100.0	0.0	91.7
Central	64.9	91.4	NA	98.5	98.2	95.7
Eastern	100.0	100.0	NA	100.0	100.0	88.9
GAR	50.0	66.7	NA	100.0	100.0	100.0
Volta	53.8	87.5	NA	95.0	100.0	97.5
Western	33.3	74.1	NA	88.5	88.9	73.1
Totals	62.0 (n=157)	88.4 (n=137)	NA	93.4 (n=137)	92.0 (n=140)	91.3 (n=137)
p value	<.0001				1.000	

¹ Water, soap, single use towel.

Table C Regional Achievement in IMCI by benchmarks

	Ashanti		BAR		Central		Eastern		GAR		Volta		Western	
	2004	2007	2004	2007	2004	2007	2004	2007	2004	2007	2004	2007	2004	2007
Basic Amenities														
% facilities all essential eqt	0.0	17.4	25.0	75.0	6.7	23.6	18.2	80.0	0.0	50.0	9.4	14.6	4.5	13.8
% of facilities with all IP items	67.7	59.1	0.0	91.7	64.9	87.1	100.0	88.9	50.0	80.0	53.8	80.0	27.8	48.1
% of facilities with IMCI book	57.0	95.5	33.3	41.7	27.0	89.4	44.4	77.8	40.0	100.0	24.1	97.4	5.0	36.0
% facilities growth monit.	78.9	81.8	87.5	100.0	87.9	92.9	60.0	100.0	80.0	100.0	90.0	100.0	18.2	59.3
Assessing Danger Signs														
% asked about BF	80.0	100.0	17.1	100.0	23.0	71.7	13.3	77.8	30.0	100.0	27.2	82.1	31.7	44.4
% asked convulsions	51.4	76.9	17.1	80.0	12.1	57.7	13.3	44.4	40.0	100.0	19.6	78.6	7.5	14.8
% asked vomiting	62.9	84.6	71.4	100.0	47.4	73.1	0.0	66.7	40.0	100.0	72.3	67.9	73.2	66.7
% asked all	40.0	69.2	5.7	80.0	7.2	49.1	0.0	44.4	30.0	100.0	11.7	67.9	2.4	20.0
All Counseling Advice														
% BF during this illness	88.9	46.2	14.3	100.0	16.8	60.8	13.3	88.9	20.0	100.0	28.7	63.0	24.4	35.7
% give extra fluids	77.8	0.0	20.0	80.0	10.1	22.2	0.0	22.0	30.0	75.0	22.3	44.4	14.6	21.4
% continue feeding	88.9	38.5	17.1	80.0	10.9	53.1	0.0	100.0	30.0	75.0	42.6	74.1	36.6	39.3
% sign symptoms ret.	58.3	30.8	58.8	100.0	10.9	77.4	0.0	33.3	40.0	25.0	22.3	88.9	26.8	29.6
% all counseling	41.7	0.0	0.0	80.0	1.4	16.4	0.0	11.1	10.0	25.0	2.1	32.1	0.0	12.9
Key Actions Provider Care														
% tell illness child has	86.1	52.8	74.3	100.0	15.9	45.1	33.3	33.3	0.0	75.0	22.3	66.7	40.0	8.0
% give first dose	8.8	0.0	17.1	80.0	3.9	54.3	13.3	62.5	30.0	75.0	23.4	84.0	2.9	40.0
% explain dosage	82.4	50.0	42.9	100.0	21.1	56.5	13.3	100.0	30.0	100.0	57.4	96.0	29.4	46.7

% write on health card	94.4	75.0	85.7	100.0	65.9	78.8	0.0	33.3	10.0	25.0	47.9	57.7	100.0	35.5
% use visual aids	19.4	23.1	31.4	80.0	0.0	14.0	6.7	28.6	10.0	25.0	5.4	32.0	12.2	10.0

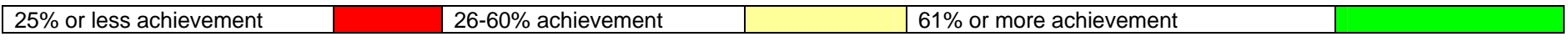


Table D Observations of Provider's Treatment of Sick Children

	Observation of the practice of asking caregiver about danger signs						% of observations where providers asked about all of the danger signs	
	% who asked about whether child can breastfeed/drink		% who asked if child has had convulsions		% who asked if the child vomits everything			
Type of Facility								
	Baseline	Midterm	Baseline	Midterm	Baseline	Midterm	Baseline	Midterm
Regional Hospitals	20.6	62.5	15.2	37.5	41.2	66.7	14.7	44.4
District/Mission Hospitals	35.2	77.4	21.4	64.5	58.5	80.0	10.4	58.1
Health Centres	28.6	73.0	17.9	55.1	60.8	71.6	11.0	49.0
Totals	29.8 (n=363)	73.4 (n=139)	18.7 (n=369)	56.2 (n=137)	58.3 (n=367)	73.0 (n=141)	11.1 (n=368)	50.7 (n=142)
p values	<.0001		<.0001		.0021		<.0001	

*Note: The "n" at baseline is the total number of observations made. It may reflect multiple observations of the same provider.

Table E Provider's Practice of Providing Essential Advice to Caregivers

	% of providers who gave advice to the caregiver on:								% of providers who gave all advice	
	Feeding/ Breastfeeding during this illness		Give extra fluids to the child during this illness		Continue feeding or breastfeeding during this illness		Signs or symptoms requiring return to facility			
Type of Facility										
	Baseline	Midterm	Baseline	Midterm	Base line	Midterm	Base line	Midterm	Base line	Mid term
Regional Hospitals	17.1	44.4	14.3	22.2	14.3	66.7	20.6	33.3	2.9	20.0
District/Mission Hospitals	27.6	40.7	17.0	25.9	23.6	51.9	20.8	60.7	3.8	19.4
Health Centres	28.9	65.3	24.6	29.0	35.3	59.6	27.8	65.3	6.6	19.2
Region										
Ashanti	88.9	46.2	77.8	0.0	88.9	38.5	58.3	30.8	41.7	0.0
Brong Ahafo	14.3	100.0	20.0	80.0	17.1	80.0	58.8	100.0	0.0	80.0
Central	16.8	60.8	10.1	22.2	10.9	53.1	10.9	77.4	1.4	16.4
Eastern	13.3	88.9	0.0	22.0	0.0	100.0	0.0	33.3	0.0	11.1
Greater Accra	20.0	100.0	30.0	75.0	30.0	75.0	40.0	25.0	10.0	25.0
Volta	28.7	63.0	22.3	44.4	42.6	74.1	22.3	88.9	2.1	32.1
Western	24.4	35.7	14.6	21.4	36.6	39.3	26.8	29.6	0.0	12.9
Totals*	27.4	59.1	21.4	27.9	30.1	58.5	25.1	62.3	5.4	19.3
Baseline (n=369) Midterm (n=145)										
p values	<.0001		.1242		<.0001		<.0001		<.0001	

*Note: The "n" at baseline is the total number of observations made. It may reflect multiple observations of the same provider.

Table F Provider care of sick children – key actions

	Tell caregiver what illness child has		If medicines prescribed, give first dose		If medicine prescribed, explain dosage		Write on health card		Use visual aids	
	Base Line	Mid term	Base line	Mid term	Base line	Mid term	Base Line	Mid term	Base line	Mid term
Facility Type										
Regional Hospitals	17.1	33.3	0.0	25.0	17.6	37.5	42.9	22.2	5.7	37.5
District/ Mission Hospitals	40.0	44.4	6.6	45.5	26.4	52.4	70.8	46.7	3.8	14.8
Health Centres / Other	32.0	46.9	16.0	61.9	48.4	76.2	66.7	69.0	10.6	21.2
Region										
Ashanti	86.1	52.8	8.8	0.0	82.4	50.0	94.4	75.0	19.4	23.1
Brong Ahafo	74.3	100.0	17.1	80.0	42.9	100.0	85.7	100.0	31.4	80.0
Central	15.9	45.1	3.9	54.3	21.1	56.5	65.9	78.8	0.0	14.0
Eastern	33.3	33.3	13.3	62.5	13.3	100.0	0.0	33.3	6.7	28.6
Greater Accra	0.0	75.0	30.0	75.0	30.0	100.0	10.0	25.0	10.0	25.0
Volta	22.3	66.7	23.4	84.0	57.4	96.0	47.9	57.7	5.4	32.0
Western	40.0	8.0	2.9	40.0	29.4	46.7	100.0	35.5	12.2	10.0
Totals	32.9 (n=368)	45.5 (n=134)	12.0 (n=350)	56.1 (n=114)	39.7 (n=350)	69.0 (n=113)	65.6 (n=369)	61.2 (n=139)	8.2 (n=365)	20.9 (n=134)
p values	.0086		<.0001		<.0001		.3521		.0002	

Table G Availability of Infection Prevention Items in FP service delivery area

	% of facilities with hand washing facilities ¹		% of facilities with disposable gloves		% of facilities with sharps container		% of facilities with decontamination solution ²		% of facilities with waste bin
Type of Facility									
	Base line	Mid term	Base line	Mid term	Base line	Mid term	Base line	Mid term	Midterm
Regional Hospitals	71.4	100.0	85.7	100.0	85.7	100.0	71.4	100.0	83.3
District/ Mission Hospitals	57.1	86.4	75.0	100.0	75.0	100.0	57.1	84.2	54.5
Health Centres/ Other	45.9	73.3	59.0	77.4	66.4	96.0	45.1	91.7	46.9
Region									
Ashanti	47.4	60.0	57.9	70.0	68.4	95.0	36.8	100.0	45.0
BAR	62.5	100.0	50.0	100.0	0.0	100.0	50.0	100.0	55.6
Central	56.7	90.0	71.7	81.4	86.7	98.6	48.3	79.5	53.7
Eastern	45.5	60.0	54.5	90.0	54.5	100.0	54.5	100.0	37.5
GAR	40.0	83.3	80.0	100.0	80.0	100.0	60.0	75.0	50.0
Volta	50.0	58.8	62.5	73.0	68.8	100.0	46.9	94.7	48.6
Western	27.3	67.9	50.0	85.2	50.0	84.6	54.5	100.0	41.7
Totals	49.0 (n=157)	76.0 (n=179)	63.1 (n=157)	81.2 (n=181)	68.8 (n=157)	96.7 (n=180)	48.5 (n=157)	90.8 (n=109)	49.1 (n=171)
p values	<.0001		.0110		<.0001		<.0001		

¹ Water, soap, single use towel.

² At midterm – the presence of decontamination solution was measured for facilities that do procedures such as IUD insertion or Norplant insertion. At baseline it was measured in all facilities regardless of the service offered.

Table H Essential Components of FP Counseling (Monitoring and Midterm Only)

% of providers who mentioned key topics discussed during FP counseling? (UNPROMPTED)										
	Assure Confidentiality		Discuss repro intentions		Discuss all FP options		Discuss HIV/AIDS		All of these	
	Monitoring	Mid term	Monitoring	Mid term	Monitoring	Mid term	Monitoring	Mid term	Monitoring	Mid term
Regional Hospitals	75.0	83.3	50.0	85.7	100.0	100.0	25.0	42.9	25.0	42.9
District/Mission/Hospitals	28.6	50.0	33.3	61.9	95.5	95.5	28.6	50.0	3.4	17.4
Health Centres/Other	22.5	40.5	36.1	55.7	89.5	95.3	23.1	42.9	2.9	14.5
Region										
Ashanti	40.0	75.0	60.0	65.0	100.0	90.0	50.0	50.0	9.5	25.0
BAR	25.0	40.0	14.3	63.6	100.0	90.9	0.0	36.4	0.0	0.0
Central	11.3	44.3	29.0	37.1	95.5	98.6	25.4	60.0	14.3	17.1
Eastern	14.3	50.0	28.6	80.0	28.6	100.0	42.9	30.0	0.0	30.0
GAR	25.0	40.0	75.0	40.0	75.0	100.0	0.0	20.0	0.0	16.7
Volta	54.5	41.7	42.4	97.2	93.9	100.0	18.2	38.9	8.1	18.9
Western	6.3	16.0	31.3	44.0	81.3	84.6	18.8	12.5	0.0	3.6
Totals	24.8 (n=145)	43.2 (n=176)	36.1 (n=144)	57.6 (n=177)	90.7 (n=150)	95.5 (n=178)	24.0 (n=146)	43.8 (n=176)	3.5 (n=171)	15.9 (n=182)
p value	.0006		<.0001		.1193		.0003		<.0001	

Table I Availability of BEOC at Hospitals at Midterm (September 2007)

	% of facilities had drugs available			% of Facilities can perform / use		% of facilities have all items for BEOC (all items in all columns)
	Parenteral antibiotics	Parenteral oxytocics	Parenteral anti-convulsants	Manual removal of retained placenta	Vacuum extractor	
Type of Facility						
Regional Hospitals	85.7	100.0	100.0	100.0	100.0	85.7
District/Mission Hospitals	86.2	100.0	96.6	79.3	62.1	48.3
Regions						
Ashanti	60.0	100.0	100.0	80.0	60.0	60.0
BAR	100.0	100.0	100.0	100.0	100.0	100.0
Central	92.3	100.0	100.0	100.0	61.5	53.8
Eastern	50.0	100.0	100.0	100.0	50.0	0.0
GAR	100.0	100.0	100.0	100.0	100.0	100.0
Volta	87.5	100.0	87.5	50.0	62.5	37.5
Western	100.0	100.0	100.0	75.0	100.0	75.0
Totals (n=36)	86.1	100.0	97.2	83.3	69.4	55.6

Table J Quality of ANC Care

	% of facilities with visual and auditory privacy in ANC area		% of facilities with all items for infection prevention in ANC service areas ¹		% of facilities with all items for a quality physical ANC exam ²	
	Baseline	Midterm	Baseline	Midterm	Baseline	Midterm
Type of Facility						
Regional Hospitals	85.7	85.7	57.1	85.7	100.0	100.0
District/ Mission Hospitals	70.8	92.9	35.7	79.3	96.4	86.2
Health Centres/ Other	78.1	92.1	31.1	86.2	85.2	92.0
Regions						
Ashanti	53.8	100.0	36.8	86.4	89.5	100.0
Brong Ahafo	75.0	90.9	12.5	72.7	100.0	100.0
Central	87.2	94.3	40.0	88.7	91.7	91.5
Eastern	75.0	90.0	54.5	100.0	90.9	88.9
Greater Accra	40.0	83.3	20.0	83.3	100.0	66.7
Volta	83.3	80.8	31.3	80.8	68.8	84.6
Western	72.7	93.1	13.6	78.6	95.0	93.1
Totals	76.9 (n=104)	92.0 (n=174)	33.1 (n=157)	85.1 (n=174)	87.9 (n=157)	91.4 (n=174)
p values	.0009		<.0001		.2713	

¹ Infection-prevention items assessed were clean gloves, soap and water, disinfecting solution and a sharps container.

² Functioning blood pressure apparatus, fetal stethoscope.

Table K Availability of Infection Prevention Items in ANC service delivery area

	% of facilities with hand washing facilities ¹		% of facilities with sharps container		% of facilities with waste bin
	Baseline	Midterm	Baseline	Midterm	Midterm
Type of Facility					
Regional Hospitals	100.0	100.0	71.4	100.0	85.7
District/ Mission Hospitals	71.4	89.3	60.7	82.8	53.6
Health Centres/ Other	51.6	92.0	54.9	93.4	54.4
Region					
Ashanti	57.9	86.4	63.2	95.5	36.4
BAR	100.0	90.9	12.5	81.8	90.9
Central	70.0	94.4	73.3	94.3	50.7
Eastern	72.7	100.0	63.6	100.0	55.6
GAR	80.0	100.0	80.0	100.0	60.0
Volta	34.4	92.0	43.8	84.6	69.2
Western	27.3	85.7	31.8	89.3	55.6
Totals	57.3 (n=157)	91.9 (n=173)	56.7 (n=157)	91.9 (n=172)	55.6 (n=173)
p values	<.0001		<.0001		

¹ Water, soap, single use towel.

Table L Supportive Supervision and Training in the ANC Service Area

	% of facilities supervised in last 6 months		% of providers trained	
	Monitoring	Midterm	Monitoring (last 12 months)	Midterm (last three years)
Type of Facility				
Regional Hospitals	75.0	100.0	100.0	85.7
District/Mission Hospitals	56.7	92.9	60.0	84.6
Health Centres/Other	43.6	63.6	57.8	73.0
Region				
Ashanti	35.3	40.9	50.0	75.0
Brong Ahafo	88.9	100.0	37.5	81.8
Central	47.0	74.3	57.1	82.1
Eastern	57.1	100.0	100.0	100.0
Greater Accra	60.0	83.3	60.0	83.3
Volta	39.3	88.5	94.4	53.8
Western	42.1	37.9	36.8	69.2
Totals	47.0 (n=151)	69.5 (n=174)	59.6 (n=136)	75.5 (n=155)

Table M Availability of Infection Prevention Items in Delivery service delivery area

	% of facilities with hand washing facilities ¹		% of facilities with disposable gloves		% of facilities with sharps container		% of facilities with decontamination solution		% of facilities with waste bin
Type of Facility									
	Base line	Mid term	Base line	Mid term	Base line	Mid term	Base line	Mid term	Midterm
Regional Hospitals	100.0	85.7	100.0	100.0	71.4	83.3	100.0	100.0	85.7
District/ Mission/ Hospitals	89.3	86.2	92.9	96.6	78.6	93.1	92.9	80.8	66.7
Health Centres/ Other	59.0	92.1	72.1	98.5	62.3	94.4	65.6	80.2	58.4
Region									
Ashanti	78.9	86.4	94.7	100.0	84.3	100.0	89.5	81.8	40.9
BAR	87.5	100.0	87.5	100.0	0.0	100.0	87.5	100.0	100.0
Central	78.3	91.2	86.7	98.5	81.7	97.0	76.7	77.8	58.5
Eastern	72.7	100.0	72.7	100.0	63.6	88.9	72.7	77.8	58.5
GAR	80.0	66.7	80.0	83.3	80.0	100.0	80.0	80.0	100.0
Volta	34.4	88.0	53.1	96.2	50.0	92.3	50.0	70.8	73.1
Western	54.5	95.7	68.2	100.0	50.0	77.3	68.2	95.2	39.1
Totals	66.2 (n=157)	90.8 (n=163)	77.1 (n=157)	98.2 (n=166)	65.6 (n=157)	93.8 (n=160)	72.0 (n=157)	81.2 (n=154)	61.0 (n=159)
p values	<.0001		<.0001		<.0001		.0617		

¹Water, soap, single use towel.

Table N Active Management of the Third Stage of Labor – Provider Knowledge (December 2006 Monitoring and September 2007 Midterm)

	What are the key steps in the active management of the third stage of labor? UNPROMPTED						% of providers that mentioned all	
	% mentioned Administration of oxytocics		% mentioned controlled cord traction		% mentioned uterine massage			
	Monitoring	Mid term	Monitoring	Mid term	Monitoring	Mid term	Monitoring	Mid term
Type of facility								
Regional Hospitals	100.0	100.0	75.0	100.0	100.0	100.0	50.0	100.0
District/Mission/Hospitals	90.3	100.0	80.6	93.3	64.5	70.0	58.1	70.0
Health Centres/Other	75.7	92.4	77.6	87.8	50.0	69.5	37.1	62.6
Region								
Ashanti	85.0	95.5	70.0	86.4	65.0	81.8	60.0	77.3
Brong Ahafo	83.3	100.0	71.4	100.0	42.9	80.0	14.3	80.0
Central	80.3	95.6	86.4	95.6	56.4	70.6	43.9	67.9
Eastern	85.7	100.0	100.0	100.0	71.4	100.0	71.4	100.0
Greater Accra	60.0	83.3	60.0	83.3	20.0	66.7	0.0	66.7
Volta	74.1	81.5	63.0	74.1	29.6	59.3	22.2	37.0
Western	78.9	100.0	78.9	84.6	73.7	61.5	52.6	61.5
Totals	79.3 (n=150)	94.0 (n=168)	78.1 (n=151)	89.3 (n=168)	54.0 (n=150)	70.8 (n=168)	41.9 (n=151)	65.5 (n=168)
p values	<.0001		.0089		.0025		<.0001	

Table O Availability of Essential Newborn Care Equipment

	Bag and Mask or tube for baby		Resuscitation Table		Suction Machine / Bulb Syringes		Cord Clamps		% of facilities have all items essential newborn items	
	BL	MT	BL	MT	BL	MT	BL	MT	BL	MT
Type of Facility										
Regional Hospitals	100.0	100.0	71.4	100.0	100.0	100.0	100.0	100.0	71.4	100.0
District /Mission Hospitals	88.5	96.7	76.0	73.3	92.3	100.0	92.3	100.0	60.0	70.0
Health centres	48.6	64.9	50.5	70.2	65.7	95.4	87.3	98.5	24.5	46.2
Region										
Ashanti	47.0	63.6	31.6	77.3	68.4	95.5	89.5	100.0	22.2	45.5
BAR	57.1	90.0	12.5	100.0	37.5	100.0	75.0	100.0	12.5	90.0
Central	63.8	70.0	69.6	82.4	82.5	95.6	93.1	100.0	43.6	58.0
Eastern	62.5	66.7	75.0	88.9	62.5	100.0	87.5	100.0	33.3	66.7
GAR	60.0	100.0	40.0	83.3	40.0	100.0	100.0	83.3	00.0	66.7
Volta	54.2	81.5	50.0	40.7	54.2	96.3	83.3	96.3	30.4	40.7
Western	57.1	61.5	63.2	53.8	95.0	96.2	85.7	100.0	35.0	34.6
Totals	58.5	72.0	56.1	72.0	72.3	96.4	88.8	98.8	33.3	52.7
p values	.0161		.0040		<.0001		<.0001		.0008	

Table P Availability of Reporting Forms in Health Facilities

	% of facilities with Case Based Surveillance Forms		% of facilities with Case Investigation Form		% of facilities with Weekly Report Form		% of facilities with Monthly Report Form	
	Base line	Mid term	Base line	Mid term	Base line	Mid term	Base line	Mid term
Type of Facility								
Regional Hospitals	80.0	83.3	80.0	66.7	80.0	100.0	100.0	100.0
District/Mission Hospitals	63.6	70.8	63.6	47.8	79.2	95.7	79.2	95.7
Health Centres/Other	45.0	62.9	37.0	57.6	83.6	93.0	77.3	89.5
Region								
Ashanti	52.6	60.9	44.4	56.5	89.5	95.7	52.6	91.3
Brong Ahafo	57.1	91.7	57.1	91.7	100.0	100.0	100.0	91.7
Central	57.1	77.6	39.2	61.0	86.8	93.2	94.3	91.4
Eastern	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Greater Accra	0.0	100.0	0.0	100.0	66.7	100.0	100.0	100.0
Volta	48.1	20.5	50.0	15.8	75.9	92.3	65.5	89.7
Western	18.2	76.0	27.3	69.6	68.2	88.0	63.6	84.6
Totals	49.3 (n=136)	64.7 (n=170)	43.0 (n=135)	56.5 (n=168)	82.7 (n=129)	93.6 (n=171)	78.4 (n=129)	90.7 (n=172)
p values	.0075		<.0001		.0048		.0030	

References and Notes

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3. QHP, GHS. Facility Baseline Assessment of Regional Hospitals and Facilities in 28 Target Districts in Seven Regions of Ghana. Accra, Ghana: ; 2005.
4. One hi-volume facility in Volta Region, but outside the 30 districts, where numerous program activities have been conducted is included in the midterm dataset
5. "Urban" here refers to a town with more than 5,000 residents. Most, but not all District hospitals would be in towns of this size.
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