

**FIGO SAVING MOTHERS AND NEWBORNS PROJECT IN
KENYA:**

**Improving Quality of Antenatal, Delivery and
Postnatal Care in Kenya through Clinical Audit**

FINAL EVALUATION

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ACRONYMS

ANC	Antenatal care
BP	Blood Pressure
CBCA	Criterion Based Clinical Audit
CDF	Constituency Development Fund
CSO	Civil Society Organisations
DFID	Department for International Development
DHS	Demographic and Health Survey
EmOC	Emergency Obstetric Care
FIGO	International Federation of Gynaecology and Obstetrics
IM	Intra Muscularly
IU	International Units
KNH	Kenyatta National Hospital
KOGS	Kenya Obstetrician and Gynaecology Society
MDG	Millennium Development Goals
MENGEN	Men for Gender Equality Now
MMR	Maternal Mortality Rate
MOH	Ministry of Health
MTRH	Moi Teaching and Referral Hospital
PNC	Post Natal Care
PPH	Post Partum Haemorrhage
RCM	Royal College of Midwives (UK)
RCOG	Royal College of Obstetricians and Gynaecologists (UK)
SBA	Skilled birth attendant
SIDA	Swedish International Development Co-operation Agency
SMI	Saving Mothers Initiative
SMN	Saving Mothers and Newborns Initiative
SOGC	Society of Obstetricians and Gynaecologists of Canada
TBA	Traditional Birth Attendant
UNDP	United Nations Development Programme
WHO	World Health Organization

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EXECUTIVE SUMMARY

Introduction

The evaluation assesses the achievements of the project, Improving the Quality of Antenatal, Delivery and Postnatal Care in Kenya Through Clinical Audit, which ran from January 2007 to July 2011. The overall objective was to improve the quality of maternal and neonatal health care services in Kenyan project facilities. The project worked in four facilities at different levels of the health service from health centre through to national hospital in Nairobi and in the Rift Valley Province. The underlying methodology of the project was to introduce the use of criterion based clinical audits (CBCA) to improve quality of care. The intended outputs of the project were:

- To improve the quality of antenatal care, delivery and post natal care at project facilities offering basic and comprehensive emergency obstetric care (EmOC)
- To improve the accessibility and acceptability of EmOC to women through enhanced community awareness and involvement
- To strengthen the capacity of professional societies in Kenya to support national efforts at improving maternal and neonatal health care.

Key Achievements

Clinical care standards and protocols have been developed for antenatal care and delivery. These have been successfully audited and within each of the 4 sites between 2 and 5 standards were developed and measured using the CBCA approach. Over the lifetime of the project 296 staff have been trained to carry out CBCA and frequent trainings have occurred from the beginning of the project and continued in each project year, not only in the project facilities but also with referral clinics and in other departments beyond the maternity wards. Overall there has been a positive response to the use of CBCA to improve quality of care at each of the project sites.

Across each of the four sites, improved relationships with referral centres have been a notable achievement of the project contributing to improved quality of care for mothers and their babies. Each of the 4 project sites has worked to develop relationships with the community. The Nairobi based hospitals have successfully worked with a civil society organisation to source an ambulance which is improving the access of pregnant women to health facilities.

The project has also strengthened of the capacity of the Kenyan Obstetrician and Gynaecology Society (KOGS) to support national efforts at improving maternal and neonatal healthcare. KOGS has also developed important skills in mechanisms for motivating and managing volunteers. The project contributed to KOGS' overall ability to implement projects by supporting the development of project and financial management skills.

Challenges

Implementation of the project was severely delayed, particularly in the first two years of the project period. This was due to post election violence, a longer than expected timeframe in receiving ethical approval and limited project and financial management experience which meant transfer of funds to facilities were delayed. This delay was never fully recovered and resulted in the expectations of the project being

significantly scaled back. The original proposal aimed at auditing of 8 standards per site and expanding the project to 10 - 15 more facilities in year 3. In the end only a maximum of 5 standards were audited and the project did not manage to scale up from the initial four facilities. With the exception of the Project Administrator, personnel working on the project were entirely volunteers, with funding provided only to cover costs of travel or living costs when attending trainings. The reliance on the goodwill, time and, in some cases, financial contribution of volunteers at each of the project sites proved a significant challenge in the overall delivery of the project. The project also struggled to engage with civil society organisations (CSOs). Of the 11 organisations detailed in the original project proposal, only one engaged in any meaningful way.

Key Lessons Learned

- Professional associations have a role to play in increasing the capacity of reproductive health (RH) services, and can bring positive contributions to such initiatives; professional associations fill a niche in introducing and implementing mechanisms for increasing accountability and improving quality of care.
- Swift and early action on project implementation and financial management issues early on in the project cycle could help prevent unnecessary delays.
- The project has been successful in increasing KOGS ability to manage and motivate volunteers. However, when trying to achieve measurable impact in improving maternal and newborn health relying solely on volunteering is an ambitious strategy. It is often difficult for individuals to give their time, and in some cases money, to support the project, when they are experiencing other external pressures.
- Multidisciplinary working, in particular between doctors and midwives, leads to improved collaboration and outcomes in health. Involving the midwifery cadre in issues relating to maternal and newborn health is essential in improving quality of care and reducing mortality and morbidity rates.
- Criterion Based Clinical Audit approaches are appropriate in this context to take a proactive approach to improving quality of care.

Key Recommendations

- Early on within a project FIGO could consider undertaking an assessment of associations' project and financial management capacity to enable support from the outset to address any identified challenges and potentially help mitigate some of the risks associated with weak financial management.
- If a log frame is going to be used as a management tool, the likely need for a relatively high level of technical support should be factored in to support individual country projects to develop feasible log frames and develop capacity to use them effectively as project management tools. Support should also be provided for the regular review and up-dating of these log frames with inputs from the project team. Consideration could be given to whether the log frame is the most appropriate management tool with societies who have little experience of using them and perhaps alternative, simpler tools developed.
- In a future project, KOGS/FIGO may want to consider a further review of causes of maternal death which proportionally remains high. This review should investigate both the clinical and non-clinical causes of maternal death

and support increased efforts to strengthen health-seeking behaviour and early referral.

- In a future project KOGS/FIGO may want to consider developing standards around neonatal care. At the moment there are still large numbers of neonatal deaths which might be preventable.
- The project found that Sabatia, a district level health facility, had the greatest autonomy developing standards and in making changes to working practices to ensure the standards were met. Whilst the larger hospitals have a significant role to play in projects such as this, the ability of district level facilities to have autonomy in decision making, the ability to flexibly respond to outside influences and therefore the opportunity to directly impact on maternal and neonatal health should not be underestimated.

1. INTRODUCTION

This evaluation assesses the achievements of the project, *Improving the Quality of Antenatal, Delivery and Postnatal Care in Kenya Through Clinical Audit*, which ran from January 2007 to June 2011.

Improving the Quality of Antenatal, Delivery and Postnatal Care in Kenya is one of ten International Federation of Gynaecology and Obstetrics (FIGO) projects that are part of its *Saving Mothers and Newborns* (SMN) Initiative. The project runs through to June 2011, and the other participating countries are Haiti, Kosovo, Moldova, Nigeria, Pakistan, Peru, Uganda, Ukraine and Uruguay.

The report is structured into the following sections (Box 1)

Box 1: Signpost for report sections

Section 2	Sets out the background to the Saving Mothers and Newborns Initiative and the country specific project. This is presented in detail for completeness.
Section 3	Outlines the evaluation methodology .
Section 4	Summarises the project achievements .
Section 5	Summarises the project challenges .
Section 6	Reviews project management , including relationships between FIGO and the Kenyan project team.
Section 7	Lists the lessons learnt .
Section 8	Provides the conclusion and recommendations .

2. BACKGROUND

2.1 FIGO

FIGO brings together professional societies of obstetricians and gynaecologists on a global basis in order to promote the well-being of women and their children and to raise standards of practice in obstetrics and gynaecology. The successor to FIGO's Save the Mothers Initiative, The Saving Mothers and Newborns (SMN) Initiative secured 4.6 million US dollars, of which a large part was contributed from the Swedish International Development Co-operation Agency (SIDA)¹.

2.2 Saving Mothers and Newborns Initiative

The SMN Initiative was launched in 2006 with the goal of reducing maternal and newborn morbidity and mortality, and to contribute to the achievement of Millennium Development Goals (MDG) 4 and 5 (Box 2). Its secondary objectives include:

1. Strengthening the capacity of national professional societies to engage in maternal-newborn health through the design and implementation of projects in the field;
2. Strengthening cooperation between FIGO and national societies, and also between societies in regions or of different economic levels;
3. Strengthening cooperation between national societies and national stakeholders involved in safe motherhood and newborn health;
4. Increasing the credibility of national societies locally to provide technical support to Ministries of Health and national professional councils.

Box 2: Millennium Development Goals

MDG 4: Between 1990 and 2015 reduce by two thirds the mortality rate among children under five.

MDG 5: Between 1990 and 2015 reduce by three quarters the maternal mortality ratio.

The Initiative aims to build and sustain the capacity of obstetrics, gynaecology and midwifery societies in participating developing countries to conduct essential projects relevant to the promotion of safe motherhood and the improvement of neonatal health.

Two key features of the initiative are: 1) north-south partnerships through the establishment of twinning mechanisms between obstetrics, gynaecology and midwifery societies in developed and in the implementing countries; and 2) increasing women's access to new, cost-effective and evidence-based technology for the reduction of maternal and newborn mortality.

2.3 The Kenyan Context

Kenya is a low income country situated in east Africa with a population of approximately 39 million, three quarters of whom live in rural areas. Kenya is defined as a country of low human development, ranking 128 out of 182 countries on UNDP's Human Development Index 2010.² Kenya's maternal and neonatal mortality and morbidity rates remain high and, worryingly, in the last 10 years, have been increasing. In 2008/9 there were 488 maternal deaths per 100,000 live births in 2008/9 (with some regions reporting MMRs of 1,000/100,000 live births), up from 414/100,000 in 2003.³

¹ From WHO website, FIGO Saving Mothers and Newborns Initiative (SMN), updated on 18 June 2010, available from URL: <http://www.figo.org/projects/newborns> [Accessed on 23 September 2011].

² From UNDP website, Human Development Reports, available from URL: <http://hdr.undp.org/en/reports/global/hdr2010/chapters/> [Accessed on 23 September 2011].

³ From UNDP website, Goal 5: Improve Maternal Death, available from URL: <http://www.ke.undp.org/index.php/mdgs/goal-5-improve-maternal-health> [Accessed on 23 September 2011]

This translates to an estimated 14,700 women dying annually from pregnancy and related complications, leading to maternal mortality being the main cause of death in women of reproductive age (*ibid*).

Most maternal deaths, in Kenya, are due to causes directly related to pregnancy and childbirth, unsafe abortion and obstetric complications such as severe bleeding, infection, hypertensive disorders, and obstructed labour. Others are due to causes such as malaria, diabetes, hepatitis, and anaemia, which are aggravated by pregnancy. Skilled attendance at birth has increased to 44% of births in 2008 from 42% in 2003. However, this remains below the 1998 level of 45% of women receiving skilled care (*ibid*).

Perinatal mortality rates consist of still birth rates and early neonatal mortality rates. Perinatal deaths reflect the quality and utilisation of prenatal, delivery and immediate post-delivery care available to women and their newborn infants⁴ (See box 3). In 2003 the Kenya Demographic and Health Survey (DHS) reported that perinatal mortality rate was 40.3 per 1000 pregnancies in total with a variation from 58 per 1000 pregnancies in coastal areas to 28 per 1000 pregnancies in western areas.⁵

Box 3: Perinatal risk factors

A number of variables have been identified that may influence perinatal deaths. Among these are variables that existed before conception (i.e. parent's socio-economic and cultural characteristics, mother's demographic characteristics and mother's habitat and environment); variables appearing during pregnancy (i.e., medical supervision in pregnancy, maternal health during pregnancy and maternal nutrition during pregnancy); delivery-related variables (i.e., medical supervision at delivery, delivery complication, child's characteristics at birth and a child's immunity) and finally, variables whose influence appears after delivery (i.e., care offered (paediatrics), use of care after delivery (these influence care given to the newborn), child's resistance to disease, exposure to disease carrier (these influence child's health in the first week) all these in turn influence a child's death or survival in the perinatal period. (Taken from Khasakhala and Ndavi (2007))

The project in Kenya was implemented by the Kenyan Obstetrician and Gynaecology Society (KOGS) and undertaken between January 2007 and July 2011. The project has the overall goal of addressing barriers to the delivery and utilisation of antenatal, delivery and postnatal care leading to a reduction in maternal and neonatal mortality and morbidity. Specifically, the project sought to use criterion based clinical audit (CBCA) as a systematic and measurable method to evaluate the quality of care, identify areas of substandard care that needed to be (and could be) improved and to implement the changes needed to meet agreed standards of care in facilities providing basic and comprehensive emergency obstetric care.

The project was a follow on from the DFID funded 'Know How' project, a collaboration between medical and nursing professional bodies in both Kenya and the UK and the Kenyan Ministry of Health (MOH). Through the 'Know How' Project, evidence-based standards for the five main causes of maternal mortality were developed and training provided to participating institutions to audit services against these standards. The intention of this current FIGO project was to extend the 'Know How' project ethos, and develop standards and conduct clinical audits for antenatal care (ANC) and post-natal care (PNC) that were not part of the 'Know How' project.

⁴ Khasakhala, A; Ndavi, P (2007) Factors Associated with Perinatal Deaths in Kenya; paper from Fifth African Population Conference 10-14 December 2007.

⁵ From WHO website, "Department of Making Pregnancy Safer; Kenya Country Profile" http://www.who.int/making_pregnancy_safer/countries/ken.pdf [accessed on 26 September 2011]

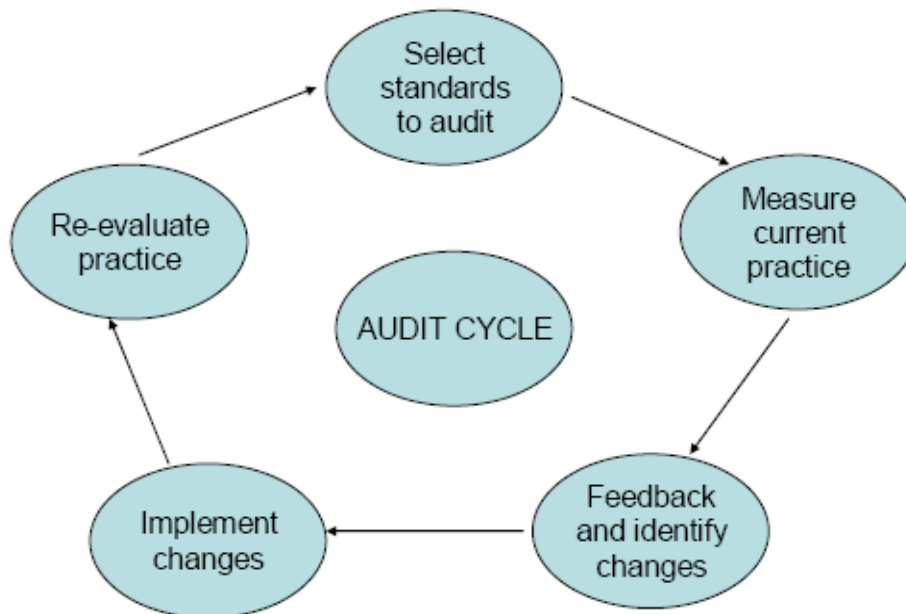
The underlying project methodology, as with the Know How project, was CBCA. CBCA has been shown to be an effective systematic way of evaluating the quality of care given and implementing change. It is slightly different to a maternal death audit, which focuses on causes contributing to death to identify and effect change that is needed to improve care in future (the full audit cycle). In contrast, CBCA can allow staff to consider positive aspects of care that contribute to a woman’s survival and health as well as identifying and analysing areas of poor (or sub-standard) care⁶.

The process of CBCA comprises, firstly, the development of standards of care (see box 4) which were based on international best practice but adapted for the local context. Secondly, the clinical audit, which comprises of measurement of current practice, feedback and identification of changes, implementation of changes and re-measurement (see figure 1).

Box 4: Development of Standards of Care

Standards for the provision of maternal health care are written in order to indicate the quality of services that midwives, nurses, clinical officers and doctors can and should provide for women. Ideally health care providers themselves should be able to decide what these standards should be, collaborating not only between professional groups, management and government but also with the clients or consumers of care. (Taken from the Safe Motherhood Know How Project, Clinical Audit Report (2003))

Figure 1: The process of clinical audit



The outputs laid out in the revised logical framework (May 2008) the “Improving quality of antenatal, delivery and postnatal care” project are:

Output 1: to improve the quality of antenatal care, delivery, and post natal care at project facilities offering basic and comprehensive emergency obstetric care (EmOC)

⁶ Project Proposal- Improving Quality of Antenatal, Delivery and Postnatal Care in Kenya through clinical audit. (2006)

Output 2: To improve the accessibility and acceptability of EmOC to women through enhanced community awareness and involvement.

Output 3: To strengthen the capacity of professional societies in Kenya to support national efforts at improving maternal and neonatal health care

The project was implemented across four sites, two in the west of Kenya: Moi Teaching and Referral Hospital (MTRH) and Sabatia Health Centre and two in Nairobi: Kenyatta National Hospital (KNH) and Pumwani Maternity Hospital (See figure 2). MTRH and KNH are the two national hospitals in Kenya, Pumwani is a specialised maternity unit and Sabatia is a health centre (in Kenya) these are medium sized units which cater for a population of about 80,000 people) KOGS was twinned with the Royal College of Obstetrics and Gynaecology (RCOG) in the UK and worked in collaboration with civil society organisations (CSOs).

Figure 2: Map of project sites



The principal activities that took place were:

	2007	2008	2009	2010	2011
Start up:					
Identification and activation of project in initial 4 project sites					
Training of facility teams on clinical audit and maternal death review.					
Baseline data collection on EmOC, ANC, PNC: service provision and women's opinions of care					
Output 1:					
Train staff at project sites in clinical audit					
Audit Cycle (2-3 standards)					
Choose standards					
Develop measurement tool					
Measurement 1					
Analysis					
Feedback to Staff					
Implement changes					
Measurement 2					
Analysis					
Feedback to Staff					
Audit team meeting					
Required Supplies to ensure implementation of standards					
Output 2					
Planning Meeting at local level with Civil Society Groups					
Events to sensitize communities about Safe Motherhood					
Seek/lobby funds with Civil Society Groups from Constituency Development Funds					
Workshop with staff from referring health centres to project sites to expose them to standards, protocols and referral mechanisms					
Practical one-on-one sessions of one day with staff from referring health centres to expose them to standards, protocols and referral mechanisms					
Output 3					
KOGS office maintenance					
Joint meeting of sites					
National Joint Steering Committee Meeting (with representation from Civil Society Groups)					
Reporting from sites					
Communication at sites (phone+internet)					
Baseline data analysis					
Final data collection					
Final data analysis					
Reporting to professional societies at conferences					
Dissemination of final results					
Annual audit of accounts					
Attendance at FIGO conference					

3. EVALUATION METHOD AND LIMITATIONS

This desk-based evaluation took place in September and October 2011, and a mix of qualitative and quantitative data informed the findings.

The consultant reviewed project documentation provided by FIGO and the project implementers between 14th to 16th September. FIGO provided a list of stakeholders to interview and telephone interviews were semi-structured and conducted between 20th to 12th October. Additional information was supplemented by key informants by follow-up telephone calls or email communication. The report was reviewed by all key informants for verification and comments prior to submission to the commissioning body, FIGO.

Triangulation of information was difficult to establish without a country visit to review records and beneficiary participation. This was mitigated in part through triangulation of key informant interviews and with data provided in reports. Baseline, Endline and clinic data, whilst a useful source of information, should also be treated with caution as they do not enable attribution of change to project activities or provide a control against which project impact could be judged.

4. PROJECT ACHIEVEMENTS

4.1 Achievements related to purpose

The overall purpose of the project is to improve the quality of maternal and neonatal health care services in Kenyan project facilities. Overall the project has taken good steps to achieve this as described below.

4.1.1 Indicator 1: % decrease in case fatality rate by specific maternal morbidities at centres offering basic and comprehensive EmOC in Kenya from year 2007 to year 2010

The data in table 1 have been drawn from routinely collected facility data obtained during the final evaluation (See Annex 1)⁷. Between 2007/08 and 2010 KNH and MTRH experienced an overall decrease in maternal deaths as a % of total births per site (data disaggregated by specific morbidities was not available). Sabatia maintained an overall zero maternal mortality rate with the exception of 2 cases in 2010 who died as a result of severe anaemia. No data was available for Pumwani.

Table 1: maternal deaths as a % of total births per site.

	2007	2008	2009	2010
KNH	not available	1.24%	0.83%	0.97%
MTRH	0.33%	0.37%	0.41%	0.25%
Pumwani	not available	not available	not available	not available
Sabatia	0%	0%	0%	0.38%

Despite a decline in the percentage of maternal deaths the proportion remains high and the number of women dying during childbirth needs further investigation. At KNH an average of 10 women have died every month from 2008 to 2011. Without further analysis, it is hard to hypothesise the causes of this, but factors might include: women coming too late to the facility; an increase in workload as the mean number of deliveries per calendar month has considerably increased from 2008 (see Annex 1 for the detailed data). At KNH from 2009 onwards, there is an average of 170 more deliveries per month (this is 6 deliveries each day more than in the baseline year); since still births and perinatal deaths are decreasing (dropping from 13% of all deliveries in 2008 to 11% in 2010) other factors might be driving maternal death, for example, the presence of underlying conditions, post partum haemorrhage (PPH) or pre-existing anaemia. Overall this would benefit further investigation identifying clinical and non-clinical causes and support increased efforts to strengthen health-seeking behaviour and early referral.

4.1.2 Indicator 2: % decrease in perinatal mortality at centres offering basic and comprehensive EmOC in Kenya from year 2007 to year 2010

The data in table 2 have been drawn from routine facility data obtained during the final evaluation (See Annex 1). Between 2007 and 2010 KNH and Pumwani saw an overall decrease in neonatal deaths as a proportion of total births per site. Sabatia did see a slight increase, however their case load is relatively low and in each year this only represents one neonatal death in each year. MTRH has seen an increase in neonatal deaths from 2007 to 2010. However they have also seen an increase in their case load of complicated births, increasing from 2.57% (140 in actual numbers) to 4.73% (377 actual cases) of total births. This could indicate an increase in referrals of complicated cases to MTRH.

⁷ Data collected for the baseline and endline survey did not address this indicator.

Table 2: neonatal deaths as a % of total births per site

	2007	2008	2009	2010
KNH	Not available	13.25%	14.57%	11.43%
MTRH	3.06%	2.34%	3.21%	4.41%
Pumwani	6.14%	6.23%	6.71%	5.37%
Sabatia	0.00%	0.00%	0.20%	0.19%

4.2 Achievements related to Outputs

The key achievements that have contributed to the attainment of the project outputs (stated in section 2.4) are listed below. Where possible, examples have been given, but the desk-based nature of this evaluation makes it difficult to illustrate all the successes with narratives.

4.2.1 Output 1: To improve the quality of antenatal care, delivery and post natal care at project facilities offering basic and comprehensive emergency obstetric care.

- Clinical care standards and protocols have been developed** for antenatal care and delivery. Within each of the 4 sites between 2 and 5 standards were developed and measured using the CBCA approach. It was originally anticipated that each site would work towards developing 8 standards that would be universal across the project sites. However, as project implementation progressed, it became apparent that the needs of the different health facilities varied and that it was more appropriate for each facility to define its own standards based on the local context. As a result not all the facilities developed standards across antenatal care and delivery and no sites developed standards for postnatal care. Table 3 below details the standards developed and audited in each site.

Table 3: Standards developed in each of the 4 project sites.

	Kenyatta	Moi	Pumwani	Sabatia
Antenatal care		1. Every woman attending ANC must have her blood pressure (BP) measured and recorded and urine tested for protein and results recorded.		1. Every woman attending ANC clinic has her BP measured correctly, urine tested for protein and results recorded
Delivery	1. All patients admitted to KNH labour ward will have their BP taken and urine analysis for protein done and appropriate management instituted as per protocol within 30 minutes of admission. 2. All patients delivered in labour ward should have active management of 3 rd stage of labour whereby oxytocin 10	2. Every woman admitted in labour ward has her urine tested for protein on admission and her BP measured and recorded 3. Every woman has her vital signs taken and recorded ½ hourly for the first 2 hours after delivery 4. In all deliveries there is active management of the	1. Every woman in established phase of labour should be monitored using a partograph 2. Every woman diagnosed with PPH should have it controlled within ½ an hour of diagnosis	2. Every midwife will be able to diagnose and manage or refer cases of PPH immediately to reduce maternal mortality and morbidity 3. Every woman in labour is monitored by use of a partograph 4. Every health care provider reduces the risk of

	International Units (IU) is given intramuscularly (IM) within 1 minute of delivery, placenta is delivered by controlled cord traction and the uterus massaged every 15 minutes for 1 hour. 3. Every woman admitted is monitored using a partograph	3rd stage and preparedness for the management of PPH		spreading infection by washing hands before and after every procedure 5. All staff implement infection prevention measures
Postnatal care	None	None	None	None

- Over the lifetime of the project **296 staff have been trained to carry out criterion-based clinical audits (CBCA)**. Frequent trainings have occurred from the beginning of the project and across all sites. High turnover of staff has meant that training has had to occur more frequently than originally anticipated. However, this does result in an increased cadre of multi-disciplinary staff with an understanding of CBCA. Further, it is not only staff at the project facility who have been trained in CBCA; staff at referral centres and from other departments within the health facilities have also had access to CBCA training. Table 4 below shows the numbers of staff trained across each of the 4 project sites in each project year.

Table 4: Numbers of staff trained in CBCA 2007 - 2011

	2007	2008	2009	2010	2011	Total
Moi	0	3	25	19	0	47
Pumwani	0	3	30	0	51	84
Kenyatta	0	5	33	0	85	123
Sabatia	0	3	19	20	0	42
Total	0	14	107	39	136	296

In 2010 KNH and Pumwani were unable to hold any audit trainings. For KNH this was because the focal person went on maternity leave and the alternative trainer, the co-opted KOGS member, was unable to make time for the project due to too many institutional responsibilities. At Pumwani, both the focal person and the co-opted KOGS member were transferred to different jobs and so unable to continue to engage. KNH rescheduled trainings for 2011 and Pumwani manage to identify and recruit a new focal person who started at the end of 2010.

- Each site has fully audited at least one standard.** In total, across all of the four project sites a total of 14 standards have been undertaken with 13 fully completed. Sabatia audited the greatest number of standards going through two full measurements for 5 standards. Pumwani completed one full audit on the use of partograph but undertook three measurement cycles to ensure it was fully met. The second standard to be measured by Pumwani, on PPH has, as yet, only undertaken its first measurement, however the team are continuing to work on the results of the measurement and hope to complete the standard in 2012. KNH has completed two standards undertaking three measurements on each to ensure attainment, it has

just completed the first measurement of a third standard on use of a partograph. MTRH has completed audits on four standards. Annex 2 details the standards audited by site, the results from measurement one, action taken and the results from subsequent measurements.

- Overall there has been a **positive response to the use of CBCA to improve quality of care** at each of the project sites. The multi-disciplinary framework has enabled a range of staff (e.g. medical records staff, clinical officers, physiotherapists, nutritionists, midwives, obstetricians and staff from the quality assurance departments) to engage in the setting of standards and the development of tools:

“The quality of teaching on CBCA and standard setting was extremely good, the content was strong and the makeup of the people in the room - midwives, CSOs, doctors etc. gelled very well” Tony Falconer (project mentor)⁸.

The use of CBCA has led to a reported increase in quality of care, for example:

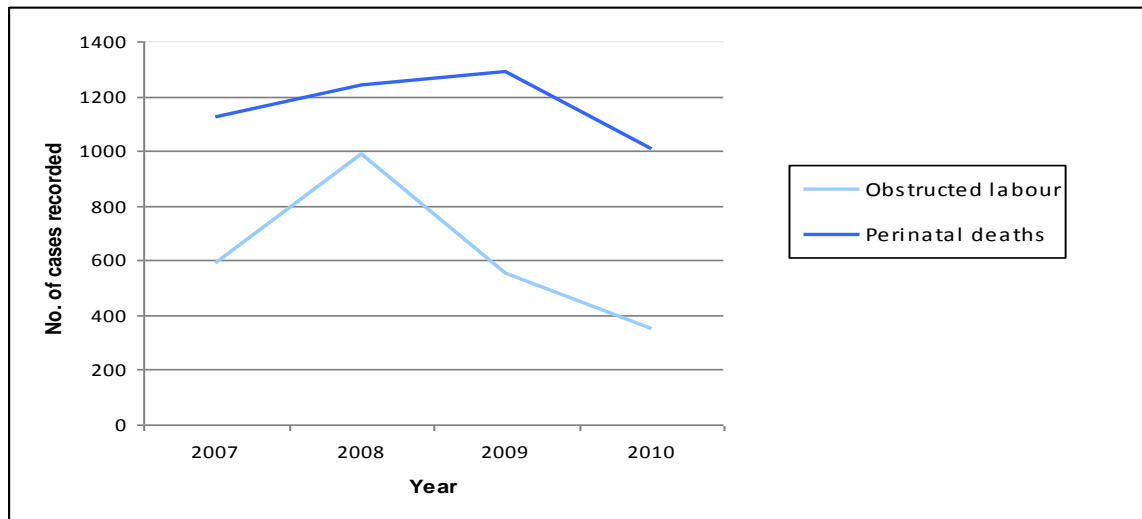
- An increase in the availability of basic equipment such as BP machines, foetal scopes, thermometers, urine sticks funded through the project.
- Improved active management of 3rd stage of labour is not only improving outcomes of PPH but also preventing PPH in the first place.
- Complaints procedures have been put in place to enable the patient / referring centre to express any concerns about treatment.
- In Pumwani it was reported that the use of the partograph is now becoming routine. This is improving the management of obstructed labour and reportedly reducing the number of babies suffering asphyxia (although no figures have been provided to supported this assertion, the baseline and endline studies show a drop in the number of babies born with a an Apgar score ≤ 6 dropping from 30.4% to 16.1% of complicated births⁹) (See Annex 3 for baseline and endline data). The improvement in the level of information available on the progress of the labour has also improved communications between the mother and the clinical staff. It was reported that if there are any complications the mothers are informed immediately and prepared quickly.
- Increasingly, early detection of complications at health facility and early referral to the district hospital.
- Correct diagnosis and management of complications at health facility and referral where necessary, for example, PPH.
- In Pumwani, the team, together with Men for Gender Equality Now (MENGEN), a CSO, successfully approached their local member of parliament seeking to access the Constituency Development Fund (CDF). Previously doctors refused to stay on site at the hospital as security was very poor. This resulted in long journeys from their homes if there was an emergency, causing delays in the provision of appropriate treatment. The resources provided by the CDF enabled Pumwani to build a perimeter fence for the doctor’s accommodation and provide sufficient security to four doctors flats. All of which are now fully occupied. The resultant affect on quality of care has been that women with complicated births can be treated more quickly and, if needed, caesarean sections can be performed more quickly leading to a reduction in obstructed labour (see figure 3). The presence of doctors 24 hours a day also enabled the team to lobby the hospital administration to

⁸ Interviewed 21st September 2011

⁹ Baseline study Sept 6th 2009; Endline study August 2011

open a second operating theatre which has also improved the provision of appropriate treatment to patients. As mentioned above, data from Pumwani shows a decrease in obstructed labour and also in perinatal deaths between 2007 and 2010 (see figure 3). Whilst other external factors beyond the project will also have impacted on quality of care, anecdotal evidence reports that the presence of doctors and two functioning operating theatres have had a significant impact. The facility data from Pumwani also indicates an increase in referrals to KNH so more complicated cases may also have been referred on (see Annex 1).

Figure 3: Showing a decreased in the number of cases of obstructed labour and perinatal deaths at Pumwani hospital from 2007 to 2010 (source: clinic records provided by Project Administrator)



- Across each of the four sites, **improved relationships with referral centres** have been a notable achievement of the project contributing to improved quality of care for mothers and their babies. Prior to the implementation of the project, referral centres reportedly were largely suspicious of central health facilities. They often referred patients late, when they were critically ill, with no case history or information on the progress of labour. Through relationship building and training, facilitated by civil society organisations, for example, Men for Gender Equality Now (MENGEN), mutual understanding has been developed and referral centres have started to refer patients earlier and with improved case information.

Box 5: Example of improved working relationships with referral centres (direct quote from Project Administrator)

“On 17/6/2011 Grace Wang’ombe (focal midwife) and Joan Buluku of Kenyatta site and myself travelled from Nairobi to Eldoret to attend a meeting for the site representatives at Sirikwa hotel. Thirty minutes after we took off by bus, Grace received a call from a referring nurse of Kayole (one of the areas we visited and organized a work shop on referring systems of Kenyatta Hospital). The nurse informed Grace that she had received a primigravida in her clinic and on examination she found that this mother had Cephalo Pelvic Disproportion. She narrated her client’s physical condition to Grace, the status of the baby and her overall findings and her intention to transfer her client. Grace advised her to transfer the mother to labour ward as soon as she could. Grace called the labour ward and ordered the shift team leader to prepare to receive a mother in labour from Kayole (she quoted the name of the clinic). She gave all the details of the coming client on phone and she also informed the referring nurse who to look for on arrival at Kenyatta Hospital’s labour ward. She stressed that she needed a feed back of the outcome of this mother. She kept monitoring the progress of the client through her mobile phone. I was seated next to her and I could hear all the conversation. Upon arrival at Sirikwa hotel a live baby had been extracted through caesarean section. We were very excited about the outcome. This interpersonal relationship had never happened before the SMN project came on board”.

The below are anecdotal reports taken from interviews with the project team:

KNH: At the project outset relationships were so poor, the Project Administrator had to intervene to ensure that staff from the referral centres attended initial meetings with the maternity unit team. The maternity unit team visited 3 referring centres who had a particularly bad impression of KNH. This was the first time KNH had been to see the referring centres in the slums, which helped the KNH staff appreciate some of the challenges of the referring centres. Over the life of the project relationships improved to such an extent that the maternity unit were able to set up a functioning hotline for the referring clinics to call if they needed either advice or were referring a mother. This also enabled the referring clinic to give a history to the Kenyatta labour ward so they could more adequately prepare for the mother. The referring clinics also started sending partographs with the patients so the progress of the labour was more adequately tracked.

MTRH: MTRH held regular meetings with referral centres allowing them to identify issues at the health facility level and, for example, train them in preventing the first delay¹⁰ and transferring mothers if they see danger signs. They were also able to train service providers on management of labour, how to diagnose normal and abnormal labour, use of a partograph, diagnosis of pre-eclampsia and eclampsia and administration of magnesium sulphate.

Sabatia: Peripheral health centres have been educated through workshops about standard setting and the need for EmOC. This has led to evaluation of care through CBCA at the health centres. They also encouraged traditional birth attendants (TBAs) to escort ANC mothers to hospital during labour and offering psychological support and/or referring mothers to deliver at health facilities.

Pumwani: The Pumwani team visited referring centres and discovered they had definite knowledge gaps. The team undertook training with the referring centres. Today they bring partographs with them when they've transferred patients. They are able to manage PPH using misoprostal and pre-eclampsia / eclampsia using magnesium sulphate. They also understand that it's very important that they manage the patient care before they put them in the ambulance.

Facility data (see table 5), provided by each of the sites, also supports the anecdotal evidence of an increase in referrals. Complicated births as a percentage of total deliveries has been increasing at KNH and MTRH, the two national and decreasing at Pumwani and Sabatia which are smaller facilities.

Table 5: Complicated births as a percentage of total deliveries (see Annex 1 for source data)

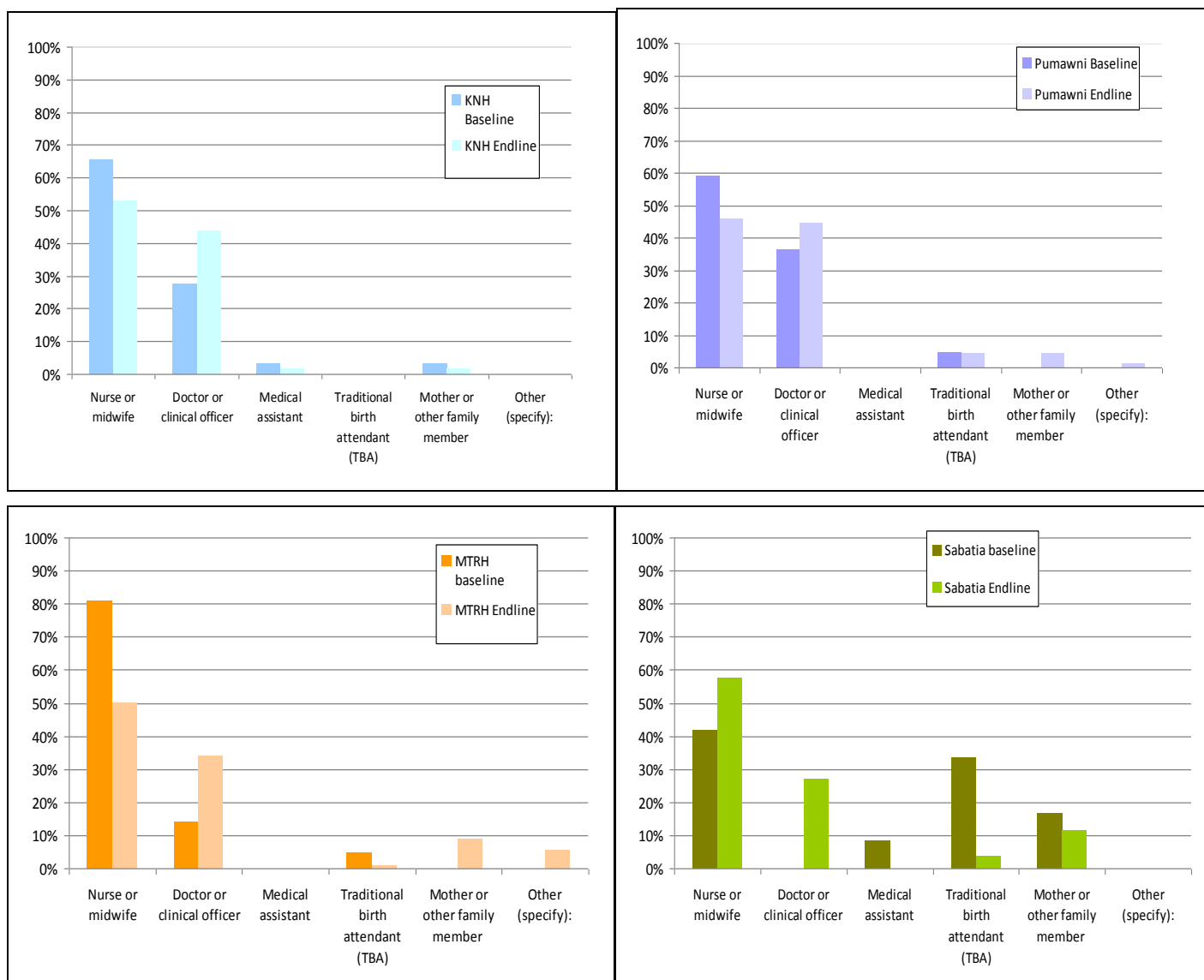
	2007	2008	2009	2010
National Centres				
KNH		41.9%	41.4%	44.0%
MTRH	2.6%	4.4%	4.5%	4.7%
Referral Facilities				
Pumwani	3.3%	5.1%	2.9%	1.9%
Sabatia	3.7%	3.7%	2.0%	1.7%

¹⁰ The three 3-delay model illustrates the barriers to utilisation of care: The three delays are: (1) delay in deciding to seek care; (2) delay in reaching the facility (3) delay in receiving timely and appropriate care in the health facility.

4.2.2 Output 2: To improve the accessibility and acceptability of EmOC to women through enhanced community awareness and involvement

- Each of the 4 project sites have worked to **develop relationships with the community**. Sabatia and Pumwani developed community outreach services. In Sabatia, 51 integrated outreach services were held within the catchment population to sensitize the community on activities of safe motherhood. These services included health education, immunization, ANC/prevention of mother to child transmission, voluntary counselling and testing, treatment of minor ailments, net distribution and deworming. In addition a working dialogue has been established between the health care facilities and community by embracing the component of safe motherhood at the health facility and in the community through advocacy. KNH formed a 13 member committee to act as a task force on referral systems, build relationships with TBAs and encourage them to accompany mothers to the hospital and to establish and sustain dialogue with the community. For MTRH, although there were not many CSOs available to work with the team in their region, they looked for other channels and developed relationships with churches, women's groups and media houses to help them reach the community and to engage with referral centres. The above activities reportedly proved a useful vehicle for understanding the issues of the community, learning why they didn't utilise the health facilities and promoting the use of skilled birth attendants during labour. This is supported by the baseline and endline studies which, whilst shows a drop in the use of nurse / midwives in all sites except Sabatia, also show an increase in the use of a doctor or clinical officer at last labour in each of the four sites and a drop in the use of TBAs in MTRH and Sabatia (see figure 4).

Figure 4: Helper at last pregnancy at the moment the baby was born (source: baseline/endline - see Annex 3)



- KNH, Pumwani and Sabatia also worked on **improving access to the health facilities**. KNH and Pumwani worked with MENGEN to successfully source funding for an ambulance through the CDF. Prior to the project, even patients experiencing complications would have to travel in *matatus*.¹¹ These are often overcrowded and unsafe modes of transport. The availability of an ambulance has not only improved the ability of mothers in labour to get to a health facility, but also improved security for women travelling at night to hospitals and reduced the risks posed by travelling in public transport. In Sabatia an application has been made to the CDF for the purchase of an ambulance, this is still pending. However the facility has liaised with Vihiga District Hospital and Kaimosi Mission Hospital for provision of an ambulance in cases of emergency.

¹¹ Privately owned minibuses used as public transportation in Kenya

4.2.3 Output 3: To strengthen the capacity of professional societies in Kenya to support national efforts at improving maternal and neonatal healthcare.

- As a result of the project KOGS has **developed important skills in the management of volunteers**. This is an unusual methodology in Kenya where the popular practice is to pay a stipend or small salary for time spent working on projects. The project has benefited from the presence of an extremely enthusiastic, motivated and passionate team who have developed imaginative ways to motivate and encourage volunteers, for example, sponsoring attendance at conferences (midwifery and KOGS); presenting certificates when volunteers attended training; linking personal satisfaction with positive changes made in the health facilities; providing equipment, for example, blood pressure machines and computers to facilities which enabled people to feel that there was some additional gain to involvement in the project; supporting the development of interpersonal relationships between referring clinics and sites which gave volunteers a sense of progress and achievement - especially when the referring clinics changed their behaviour towards facility staff; provided opportunity to interact with staff from other facilities during the audit trainings, to hear about their successes and challenges and to exchange ideas; professional development through the CBCA trainings. The project team also tried to identify suitably motivated staff through complete transparency over the lack of budget and ensuring clarity on the 20% time inputs required.
- The project has also helped KOGS membership and the project team to develop project management skills **contributing to KOGS ability overall to implement projects and to understand the mechanisms for managing and motivating volunteers**. Several interviewees reported an increase in their leadership skills and their ability to organise activities in their departments, to track implementation through a workplan, manage resources and to report on progress. The central Project Administrator particularly benefited from the guidance of FIGO in the development of project management tools and support to financial management.
- As a result of the project **KOGS has built its reputation as a champion of CBCA**. The project was clearly identified with KOGS and good links have been built with the Ministry of Health's Reproductive Health Department who now invite KOGS members whenever there are discussions about CBCA.

4.2.4 Additional achievements

- The project has contributed to an **increase in networking opportunities, relationship building and the building of communities of practice** between the participating health facilities, RCOG, the National Association of Midwives of Kenya and MENGEN. For example, meetings between Pumwani and KNH never used to take place but now have become a more regular occurrence, it has enabled informal benchmarking between facilities and provided opportunities for staff to learn from each other. In addition, good working relationships have developed between doctors and midwives and more collegial relationships are reported developing as nurses, midwives and indeed non physician staff have started to feel more empowered.
- There has been **buy-in to and uptake of the concept of CBCA as an approach to improving quality of care**. This is not only apparent in the maternity units of the health facilities, but also, in some sites, an expansion of the concept to other departments and institutionalising of the approach through inclusion in performance contracts. Box 6 highlights some of the examples of uptake of CBCA.

Box 6: Examples of uptake of the CBCA approach.

<p>KNH</p> <ul style="list-style-type: none"> • Staff from other departments have been trained so now all departments have at least 1-2 people who can set standards and audit them. • Clinical audits being used in other departments - e.g. paediatrics, surgical units, orthopaedics, and medicine. • Clinical Audit has been included in the hospital's performance contracts 	<p>MTRH</p> <ul style="list-style-type: none"> • CBCA have been included in performance contracts for the Department of Reproductive Health - every four months each department reports to the hospital managers on performance using audit results. • Training on clinical audit with service providers and staff. All staff in the unit are trained on CBCA
<p>Pumwani</p> <ul style="list-style-type: none"> • The team is continuing to undertake audits and is working to complete the PPH standard. • The facility management are aware that standards are beneficial to the hospital and the team have undertaken training in clinical audit with the rest of the hospital. The hospital management are looking to achieve other standards. 	<p>Sabatia</p> <ul style="list-style-type: none"> • Clinical audit is now part of the practice in all departments of the health facility. Continuing Medical Education sessions are undertaken monthly to update staff, identify gaps and evaluate care. District Health Management Team members give support to ensure quality of care in all health facilities. • Health workers in all health facilities have included safe motherhood activities in their performance contracts.

- Several of the interviewees reported that through engagement in the project they had **acquired advocacy and communication skills**. They were able to engage in activities that were normally beyond the scope of their clinical work, such as road shows, organising information education and communication materials, and developing community dramas and skits to advocate for hospital delivery. They were also able to develop links with the community and traditional birth attendants, building understanding within the community of, for example, the importance of using skilled birth attendants and how to correctly identifying danger signs of pregnancy, labour and puerperium (six week post natal period).
- Interviewees reported that the adoption of the CBCA approach has also led to a **positive change in attitude of amongst clinical staff**. The introduction of CBCA has catalysed the introduction of notions of accountability, responsibility and ability to change the status quo.

“Now every nurse is responsible for a patient and able to be accountable for anything that happens to them” (Monica Kipsang, Pumwani focal midwife).

Interviewees also felt a greater empowerment to identify issues and recommend changes to the hospital administration. In the past there was a greater acceptance that change was impossible, due to lack of resources, but through the introduction of CBCA they have come to recognise that low cost solutions can have a substantial impact.

5. PROJECT CHALLENGES & LIMITATIONS

While the project has made good progress in the areas outlined above, a number of challenges have also been faced which have had a negative impact on progress. In some instances the project team were able to respond to these difficulties, however, some challenges were not able to be resolved and these have limited opportunities for the project to have greater impact.

5.1 Slow start up and delayed implementation

The project experienced severely delayed implementation, particularly in the first two years of the project period. In 2007 the requirements for the project to undergo local ethical scrutiny by one of the National Review Boards delayed programme commencement. When approval was finally granted in October 2007 this coincided with the start of national election campaigning and the subsequent political and civil unrest. During this time staff were severely restricted in travelling and already poor communication was further compounded.¹² This limited progress and caused a delay in project delivery that was never recovered. Review of the project narrative reports indicated a continued optimism that the number of standards audited and measurement cycles completed could be brought in line with the workplan, however by the project close none of the sites had achieved the anticipated 8 standards audited. Slow implementation resulted in a review of the project by Andre Lalonde, chair of the FIGO Committee for Safe Motherhood and Newborn Health in 2009 to determine if funding to the project should continue. The review resulted in ongoing support but with a reduced budget and a change in scope to focus on the four core sites rather than scaling up the number of sites the project would operate in.¹³

5.2 Staff time and availability

With the exception of the Project Administrator, personnel working on the project were entirely volunteers, with funding provided only to cover costs of travel or living costs when attending trainings. The reliance on the goodwill, time and, in some cases, financial contribution of volunteers at each of the project sites proved a significant challenge in the overall delivery of the project. As the volunteers received no financial incentive the project team had to devise alternative incentives, with which they did achieve with some degree of success. However, this did impact on recruitment and retention of volunteers with some interviewees noting that they had to fund some activities out of their own pockets.

Whilst efforts were made by the project team centrally to secure 20% protected time for the volunteers from their facility administrations, this was ultimately unsuccessful. As a result, interviewees reported that any time spent on the project was over and above normal clinic duties, with several commenting that they had to commit weekends and evenings to undertake visits to the community or to participate in audits. Volunteer availability was also restricted as a result of high patient loads (in some cases the ratio of nurse to patient was 1:20 with case loads of 80-100 deliveries a day) and general staffing shortages which increased individual's workloads. Since each standard goes through a lengthy cycle (developing, measuring, solving, implementing and re-evaluation) that required a significant time commitment from staff which was sometimes difficult to achieve. The lack of staff time and availability also proved

¹² Carter, P (2008) Improving quality of antenatal, delivery and postnatal care in Kenya through clinical audit: Baseline Review.

¹³ The project proposal anticipated that the number of project sites would increase from 5 sites to 10-15 in year 3 of the project.

challenging for the central team when they were trying to bring people together for trainings as they had to arrange these around a variety of schedules.

High levels of staff turnover within the health facilities, at FIGO and within RCOG, have also proved a challenge. Within the health facilities, several key staff have been transferred during the life of the project, either to different departments, to different facilities or through promotion. None of the sites have completed the project with the same focal person they started with. As a result significant amounts of time were absorbed training and retraining staff. A positive aspect of this, however, is that almost 300 multidisciplinary staff have been trained in CBCA. The turnover of Project Managers at FIGO and project mentors has also impacted on continuity with varying levels of support provided. Fortunately, increased inputs by both the SMN Project Manager and Mentors from 2009 onwards helped increase momentum in the last half of the project.

5.3 Setting and achieving the standards

Not all project sites were familiar with the standard setting process and took several attempts to be able to successfully complete a full cycle. The quality of the measurement tools varied between the sites with Sabatia, in particular, struggling to produce a sufficiently robust tool to adequately measure their initial standards (see Annex 4 for examples of audit tools). However, additional support was provided to Sabatia, for example, in January 2010 KOGS took the initiative to find a local consultant and KOGS member to provide constructive input and support to the Sabatia team. As a result, it was reported that the project team's ability to develop tools improved. In addition, KOGS also found members to support KNH and MTRH in the implementation of the project. No sites managed to meet the number or variety of standards anticipated, that is, eight standards ranging across ANC, Delivery and PNC. Sabatia and Moi undertook the highest number of audit cycles auditing 5 and 4 standards respectively, although, as noted above, the Sabatia measurement tools were initially weak. KNH measured just two standards and Pumwani only managed to complete a full measurement on one standard. The sites didn't manage to develop universal standards for ANC and PNC as indicated in the original proposal. Indeed, no PNC standards were developed or audited in any of the four project sites.

5.4 Engagement with Civil Society Organisations

The original project proposal anticipated that 11 organisations would engage in delivery of the project, a substantial proportion of these were civil society organisations. In reality, only MENGEN engaged in any meaningful way. There was reportedly a lack of clarity about the volunteering nature of the project and many of the CSOs expected large budgets to be devolved to them. When this was not forthcoming they withdrew from the project. This situation was compounded for the sites outside Nairobi (MNTH and Sabatia) as a lack of funding meant that MENGEN was unable to travel to support work with the community in these locations and the capacity of local CSOs was too weak to engage effectively. However, in Nairobi, MENGEN has been a great support to KNH and Pumwani hospitals and has provided excellent access to and facilitation with the community resulting in some significant achievements such as improved relationships with the referral centres and sourcing a functioning ambulance (as outlined in 4.2.1 above).

5.5 Engagement with facility administrations

There have been varying levels of leadership on the project provided by facility administrations. Where there was strong leadership, for example at MTRH and Sabatia, where there has been substantial support for the programme, regular engagement in audit meetings and support for staff to work with the community, engage in training

and see several audits through to completion. Where medical leadership was less engaged, at Pumwani and KNH, it was harder to enable staff time away from clinical duties to undertake project activities, to access focussed investment wherever gaps were noted and ultimately to translate the standards into action,

5.6 Staff attitude

Whilst there has been positive change in staff attitude, achieving this proved a significant challenge, especially in the earlier phases of the project. The prevailing approach to projects within Kenya is to provide remuneration to people for their involvement so some staff wanted to be compensated for additional time spent on the project. In addition, attending a workshop or training is a good incentive to engage in a project, but the responsibility for implementing learning into action back in the workplace is not always upheld. It was noted that Sabatia was the exception to this. As a small health facility at district level the midwives and staff had much greater autonomy in decision making and were able to be more flexible in responding to training and indeed to addressing issues raised during the clinical audits.

6. PROJECT MANAGEMENT

6.1 Project and financial management skills

Gaining project and financial management skills has been a steep learning curve for the project team and has required significant inputs from FIGO with the SMN Project Manager visiting twice, the Chair of FIGO's SMNH Committee visiting once and the FIGO Finance Manager visiting once. Despite recommendations in the baseline report, a functioning workplan was not in place and being followed until 2009, following the visit of the SMN Project Manager. Narrative reports in the first few years of the project contained little information. It is noted, however, that the quality of the information in narrative reports did improve throughout the lifetime of the project.

Until additional resources were sourced to support regular monthly inputs from a finance administrator, the financial management of the project was weak. For the first few years of the project there was little or no transfer of funds between KOGS and the project sites. This inhibited the ability of the sites to deliver against their workplans. A lack of financial management understanding might have also led to the project being unable to take financial decisions until prompted by FIGO, for example, purchasing of medical supplies or in taking a pragmatic approach to providing honorariums for volunteer support. The situation was significantly improved when the SMN Project Manager visited in 2009 and helped set up a work plan, training was provided on financial management and funds were found to support the retention of a finance administrator.

6.2 The logical framework

The Project Administrator had not had previous experience of working with the log frame. As such it was not really used as a project management tool. A revised version of the log frame was produced in 2008 (against which the above analysis of achievements is based). However, the original version of the log frame developed in the project proposal continued to be used for narrative reporting. Had the revised log frame been fully adopted this might have made it a more useful tool for project management. The revised version included a clearer logic between outputs and a single purpose and had clearer, more measurable indicators. A more iterative process around development of the revised log frame and regular reviews may have addressed this apparent misunderstanding and helped the project team to use it as an active management tool.

6.3 Data collection and reporting

Overall availability of data for the purposes of the final evaluation has been good. Both baseline and endline studies were undertaken and largely based on the same survey tools so comparative analysis was possible. The project Administrator has been able to provide routine data, for example, on the numbers of staff trained, and access to facility data showing overall numbers of deliveries, complicated births, maternal death etc. (see Annex 1). It is a commendable achievement that the project undertook both baseline and endline studies. The data from these have been presented to the team at the final project meeting in August 2011 and there are some interesting results from the baseline and endline studies. Annex 3 highlights some of the key points arising from these.

However, there are gaps in the reporting of activities and outcomes which has made it difficult to assess the achievements fully, and to report the activities according to the agreed log frame and indicators. In the initial stages of the project the team found it difficult to collect any information on a regular basis from the sites, partly as a result of

communication challenges, but also due to lack of understanding of what data were needed. Whilst a recommendation of the baseline review (in July 2008) was to develop monthly reporting from the sites to the Project Administrator, this did not come into place in any substantive way until the visit of the SMN Project Manager who redesigned the narrative report to improve clarity over what information was required and provided guidance on monthly reporting from the sites. The baseline study experienced several delays as the team had to source a statistician to undertake the analysis, since the organisation that created the questionnaire was too expensive. Further, when it did become available, the data could have been used more effectively. Whilst it was provided to the focal people at each of the sites this only occurred when the project had been underway for several years and reportedly was not viewed as useful in informing practice. In addition, the tools for the baseline and endline surveys were not aligned to the log frame so are only of partial use in providing supporting data for the indicators.

6.4 Relationship between the project team and FIGO

FIGO have provided a substantial level of support and input to the project in Kenya. The SMN Project Manager has visited twice, the FIGO Finance Manager has visited once and the Chair of the FIGO Committee for Safe Motherhood and Newborn Health visited once. There has been frequent email communication between the Project Administrator and the SMN Project Manager and ongoing support to project and financial management of the programme. This support has been highly appreciated by the in country team, and without the intensive input FIGO have put towards the project it is unlikely that the increase in momentum achieved in the final stages of the project would have been achieved.

6.5 Twinning Mentor & Societies

RCOG as an organisation was involved from inception and had participated in the previous “Know How” project. The original mentors of the project were Professor Matt Carty and Dr Nynke Van Brooke. In 2008 these mentors dropped out of the programme reportedly due to the initial slow progress and were replaced by Professor Tony Falconer and Dr William Stone. Professor Falconer visited the project twice and met with the team at the FIGO conference in Cape Town and maintained contact over email. Dr Stone is based in Nairobi and was able to have ongoing inputs to the project.

Overall the inputs of the mentors were highly appreciated by the project team. All the project sites were visited by either Professor Falconer or Dr Stone at least twice during the project period and support, advice and technical inputs provided. The presence of the mentors also raised the profile of the project within the facilities and encouraged greater attention by the hospital administration. Both mentors were keen to support the programme through encouragement and prompting rather than taking a directive and active role in the delivery of the project.

The project team would have benefited from greater clarity on the nature of mentoring as they occasionally felt that there was a lack of direction from the mentors and that they should play a more active role in directing the project or in resource mobilisation. The development of a clear Terms of Reference for the mentor role that was shared widely across the project might have helped eliminate some misunderstanding on the role.

The twinning relationship with the Royal College of Midwives (RCM) was never successfully instituted, despite several attempts on the part of KOGS to bring them into the project. As a result the project was limited in its attempts to work with the Kenya midwifery societies at an institutional level and the building of institutional linkages between RCM and the Kenyan midwifery societies did not occur.

6.6 Sustainability

Whilst the sustainability of the project *per se* is not assured due to lack of continued funding, there have been some notable achievements which should continue beyond the period of project funding. There is now a cadre of professionals trained in CBCA who are a resource for KOGS and the Ministry of Health's Reproductive Health Department. The central team are communicating about the project at conferences and are developing briefing papers to disseminate the project findings more widely. There has also been an influence on improving professional culture through the language of audit which is non-personalised and an effective way of creating self awareness around quality. This cultural change may have longer term impacts in the projects sites. Finally, there is sustainability around the ongoing use of CBCA as a mechanism for improving quality of care within the facility sites in Kenya:

MTRH: clinical audits have been built into the performance contracts of the departments. They are continuing to undertake audits and the hospital administration has agreed for them to develop a standard around PNC.

KNH: The process of audit has encouraged the administration to try to become ISO certified and they have successfully approached JHPIEGO to provide funding for this.

Sabatia: Clinical audits have been built into the performance contracts of the departments.

Pumwani: Audits are continuing and staff are working to complete the PPH standard. Hospital management are aware that standards are beneficial to the hospital and the team have trained other departments of the hospital in clinical audit. The hospital management are looking to achieve other standards.

7. LESSONS LEARNT

7.1 Lessons learnt for FIGO

- Professional associations have a role to play in increasing the capacity of RH services, and can bring positive contributions to such initiatives. Professional associations can also fill a niche in introducing and implementing mechanisms for increasing accountability and improving quality of care.
- Swift and early action on project implementation and financial management issues early on in the project cycle could help prevent unnecessary delays.
- The project has been successful in increasing KOGS ability to manage and motivate volunteers. However, when trying to achieve measurable impact in improving maternal and newborn health relying solely on volunteering is an ambitious strategy. It is often difficult for individuals to give their time, and in some cases money, to support the project, when they are experiencing other external pressures.
- Elaborating an exit strategy or plan for sustainability might help project implementers to secure funding for continuity of activities to extend the reach and scope of the project. This could include supporting the in-country team in identifying potential collaborators and donors for a subsequent phase of activity.
- A logframe is of little value if it is not developed appropriately and updated versions utilised accordingly; as such, it was possibly little use as a project management tool.

7.2 Lessons learnt for the Project

- Multidisciplinary working, in particular between doctors and midwives, leads to improved collaboration and outcomes in health. Involving the midwifery cadre in issues relating to maternal and newborn health is essential in improving quality of care and reducing mortality and morbidity rates.
- Criterion Based Clinical Audit approaches are appropriate in this context to take a proactive approach to improving quality of care.
- Setting and meeting simple but effective standards is very achievable at low cost.
- Ensuring sufficient financial management skills within the project management team will support decision making and reduce unnecessary delays, such as transferring funds to project sites, or understanding how funds can be flexibly utilised (within good financial management practice parameters)
- Building good relationships with hospital administrations is an effective mechanism for creating a supportive environment for the volunteers to function, allow time to engage in off-site trainings or work on the project, and to provide support when larger, infrastructural issues are identified as gaps during the audit process.
- Building flexibility into the budget to provide small remuneration to volunteers will support recruitment and retention of the project team.
- Focus on quality assurance of audit tools to ensure that the teams are gaining maximum benefit from undertaking the audit of standards.
- Multidisciplinary trainings are a useful methodology in terms of team building between colleagues - especially midwives and doctors, developing communities of practice with a common and clearly understood goal.
- It was perhaps ambitious to include so many standards to measure, when there were significant weaknesses in capacity at the facilities. Focus could potentially have been more on quality measurement of the standards and going through several cycles to achieve good measurements rather than focusing on meeting work plan objectives on time.

8. CONCLUSION AND RECOMMENDATIONS

In the sites where the project functioned, it has achieved some considerable successes, particularly in the areas of improving referral mechanisms and the introduction of CBCA; however progress towards achieving a significant reduction in maternal deaths has not been as significant as hoped. Where successes were apparent, this was largely achieved in the final two years of the project when implementation significantly picked up. Whilst the project did not reach as far as it had originally anticipated in the project proposal in terms of numbers of standards developed or sites reached, in the sites where it was delivered there has been notable benefit and definite impact: Clinical care standards and protocols have been developed, a large number of staff have been trained to carry out criterion-based clinical audits, there are improved relationships with referral centres and developing relationships with the community. For KOGS they have developed their ability to deliver projects and to manage them effectively, developing important skills in the management of volunteers and building their reputation as a champion of CBCA. Overall, within the project sites there has been excellent buy-in to and uptake of the concept of CBCA as an approach to improving quality of care.

The project experienced challenges in terms of delays in start up and slow delivery in the early years which led to a reduction in budget and a scaling down of expectations in terms of numbers of sites to be trained in CBCA. Staff time and availability, lack of engagement with Civil Society Organisations and, in some sites, lack of interest on the part of the facility administrations and initially poor staff attitudes provided a very challenging environment in which to function.

In the early stages of the project it is evident that greater support was needed by the project in terms of project and financial management. When this was provided in the latter stages, this significantly increased the ability of the project team to make decisions, understand the mechanisms and tools needed to drive a project forward and thereby improved the rate of implementation.

Overall, there is good evidence of sustainability of the inputs provided by the SMN project. The development of a cadre of professionals trained in CBCA are now a resource for KOGS and changing professional culture in the project sites is allowing an increasing focus on quality. Finally, there is sustainability around the ongoing use of CBCA as a mechanism for improving quality of care within the facility sites in Kenya

8.1 Recommendations for FIGO

- Terms of reference for the mentors should be widely shared and an understanding built on the scope of the mentorship role.
- Early on within a project FIGO could consider undertaking an assessment of associations' project and financial management capacity to enable support from the outset to address any identified challenges and potentially help mitigate some of the risks associated with weak financial management.
- If a log frame is going to be used as a management tool, the likely need for a relatively high level of technical support should be factored in to support individual country projects to develop feasible log frames and develop capacity to use them effectively as project management tools. Support should also be provided for the regular review and up-dating of these log frames with inputs from the project team. Consideration could be given to whether the log frame is the most appropriate management tool with societies who have little experience of using them and perhaps alternative, simpler tools developed.

- When the project is coming to an end support the development of an exit plan to support project implementers to secure funding for continuity of activities to extend the reach and scope of the project. This could include supporting the in-country team in identifying potential collaborators and donors for a subsequent phase of activity.
- Projects that want to engage with civil society organisations should have some budget provision to allow time to be spent on the programme. It is not always feasible in low resource settings for organisations with competing priorities to engage when there is no financial support for doing so.

8.2 Recommendations for the project team

- A Memorandum of Understanding should be entered into at the start of the project with participating facilities / organisations to commit them to dedicating staff time to the project. This is difficult to achieve part way through, and *post hoc*.
- Ensure that project and financial management skills are sufficient to facilitate decision making and that momentum is maintained in implementation.
- Turnover in staff is a common issue in health facilities. Projects should have inbuilt strategies to mitigate against this, and to try to promote some resilience to change.
- In a future project KOGS/FIGO may want to consider developing standards around neonatal care. At the moment there are still large numbers of neonatal deaths which might be preventable.
- The project found that Sabatia, a district level health facility, had the greatest autonomy developing standards as it was easier to gain the buy in of the administration and did not have the same bureaucratic structures as, for example, KNH or MTRH. It was therefore easier for them to make changes to the working practices to ensure the standards were met. Whilst the larger hospitals have a significant role to play in projects such as this, the ability of district level facilities to have autonomy in decision making, the ability to flexibly respond to outside influences and therefore the opportunity to directly impact on maternal and neonatal health should not be underestimated.
- Further review of causes of maternal death which proportionally remains high. This review should investigate both the clinical and non-clinical causes of maternal death and support increased efforts to strengthen health-seeking behaviour and early referral.

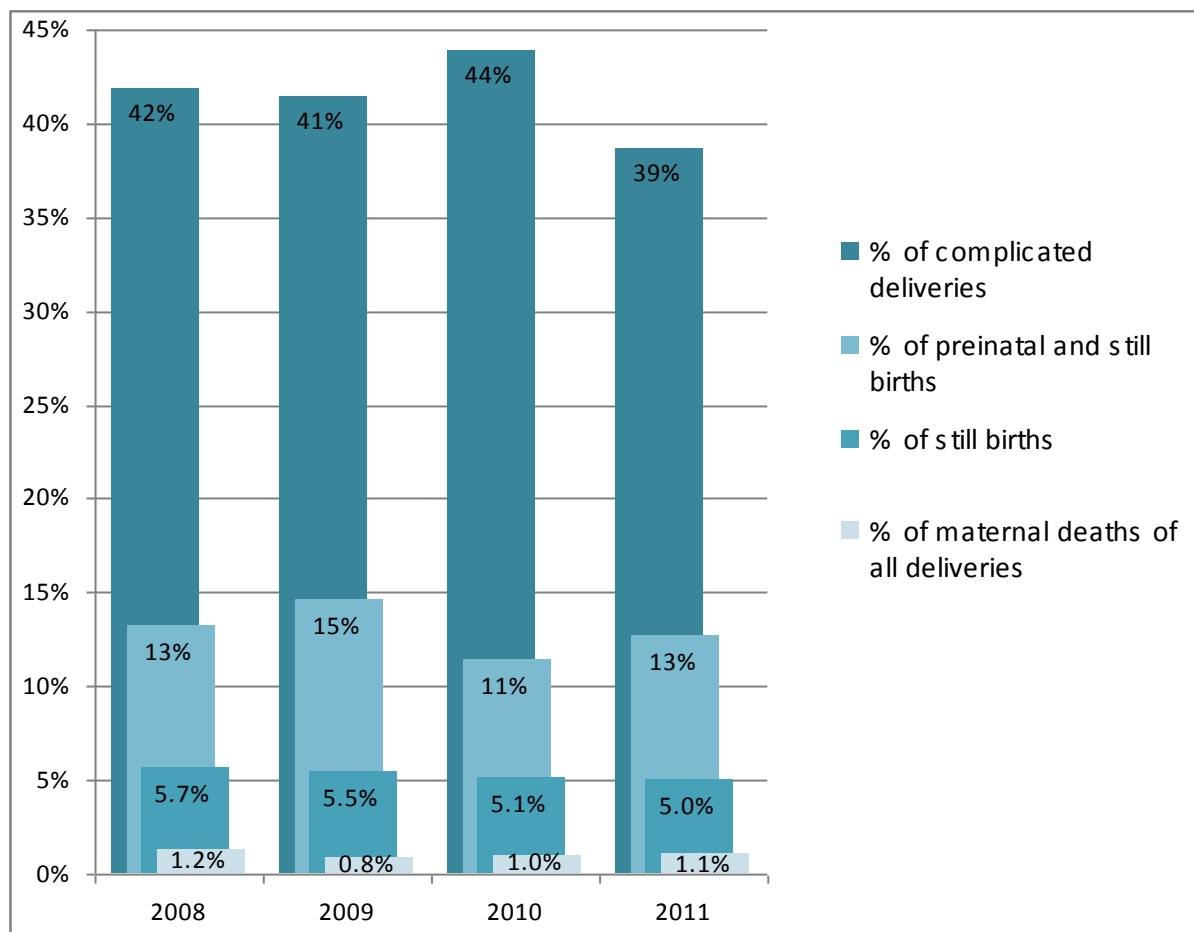
Annex 1: Routine Facility Data

Kenyatta National Hospital

Year	Month	Spontaneous Vaginal Delivery, SVD	C/S	Breech	Vacuum	No. complicated deliveries	No. all deliveries	% of complicated deliveries	Still births	Still births as % of all deliveries	Perinatal deaths + still births as % all deliveries	% of maternal deaths of all deliveries
2008	JANUARY	424	251	7	0	258	682	38%	36	5.3%	13%	1.8%
	FEBRUARY	405	274	9	0	283	688	41%	28	4.1%	13%	1.7%
	MARCH	468	308	3	2	313	781	40%	38	4.9%	14%	1.7%
	APRIL	447	273	6	0	279	726	38%	32	4.4%	14%	1.1%
	MAY	462	368	9	8	385	847	45%	47	5.5%	15%	0.8%
	JUNE	395	306	3	3	312	707	44%	40	5.7%	13%	0.8%
	JULY	484	338	6	4	348	832	42%	48	5.8%	16%	1.3%
	AUGUST	448	339	4	1	344	792	43%	47	5.9%	19%	1.3%
	SEPTEMBER	454	345	4	0	349	803	43%	52	6.5%	15%	1.2%
	OCTOBER	502	327	7	3	337	839	40%	60	7.2%	9%	1.4%
	NOVEMBER	453	340	7	1	348	801	43%	42	5.2%	10%	1.0%
	DECEMBER	479	344	8	1	353	832	42%	58	7.0%	10%	0.8%
2008		5421	3813	73	23	3909	9330	42%	528	5.7%	13%	1.2%
2009	JANUARY	522	345	5	0	350	872	40%	65	7.5%	16%	1.1%
	FEBRUARY	429	342	7	1	350	779	45%	38	4.9%	15%	0.6%
	MARCH	469	352	8	0	360	829	43%	42	5.1%	16%	1.4%
	APRIL	567	356	4	0	360	927	39%	40	4.3%	16%	1.0%
	MAY	545	367	9	2	378	923	41%	54	5.9%	15%	0.7%
	JUNE	561	346	7	1	354	915	39%	63	6.9%	15%	0.8%
	JULY	581	353	2	0	355	936	38%	50	5.3%	16%	1.4%

2010	AUGUST	580	371	7	0	378	958	39%	55	5.7%	15%	0.5%
	SEPTEMBER	573	577	8	0	585	1158	51%	58	5.0%	11%	0.7%
	OCTOBER	590	414	4	2	420	1010	42%	49	4.9%	15%	0.7%
	NOVEMBER	506	366	6	3	375	881	43%	39	4.4%	14%	0.7%
	DECEMBER	605	350	3	1	354	959	37%	55	5.7%	13%	0.4%
	2009	6528	4539	70	10	4619	11147	41%	608	5.5%	15%	0.8%
	JANUARY	580	399	4	1	404	984	41%	51	5.2%	10%	1.3%
	FEBRUARY	509	354	4	3	361	870	41%	57	6.6%	16%	0.6%
	MARCH	346	440	4	2	446	792	56%	52	6.6%	16%	1.0%
	APRIL	523	410	10	2	422	945	45%	73	7.7%	14%	1.0%
	MAY	604	417	8	3	428	1032	41%	60	5.8%	10%	0.9%
	JUNE	601	419	6	3	428	1029	42%	47	4.6%	11%	1.2%
	JULY	651	435	10	1	446	1097	41%	40	3.6%	10%	1.3%
	AUGUST	621	414	8	1	423	1044	41%	44	4.2%	10%	0.9%
SEPTEMBER	536	576	7	1	584	1120	52%	37	3.3%	9%	1.3%	
OCTOBER	642	412	4	3	419	1061	39%	53	5.0%	11%	0.8%	
NOVEMBER	513	423	5	0	428	941	45%	50	5.3%	13%	1.0%	
DECEMBER	549	438	7	1	446	995	45%	46	4.6%	9%	0.4%	
2010	6675	5137	77	21	5235	11910	44%	610	5.1%	11%	1.0%	
2011	JANUARY	491	101	4	0	105	596	18%	52	8.7%	21%	2.0%
	FEBRUARY	518	369	4	0	373	891	42%	38	4.3%	10%	0.6%
	MARCH	626	415	7	0	422	1048	40%	39	3.7%	12%	1.1%
	APRIL	562	362	1	0	363	925	39%	43	4.6%	11%	1.3%
	MAY	565	462	5	3	470	1035	45%	49	4.7%	12%	0.8%
	JUNE	618	393	10	1	404	1022	40%	53	5.2%	12%	0.9%
	2011	3380	2102	31	4	2137	5517	39%	274	5.0%	13%	1.1%

Figure showing proportion of complicated deliveries, perinatal deaths, stillbirths and maternal deaths as proportion of all deliveries at KNH hospital from January 2008 - July 2011. (mean number of deliveries pcm in 2008 = 778, in 2009 = 929, in 2010 = 993, in 2011 = 902)



Moi Teaching and Referral Hospital

Year	POST PARTUM HAEMORRHAGE	OBSTRUCTED LABOUR	MATERNAL DEATHS	NEONATAL DEATHS	DELIVERIES	Mean no. of deliveries per month	% complicated births	% of Maternal deaths	% of neonatal deaths
2007	83	57	18	167	5456	455	2.57%	0.33%	3.06%
2008	125	125	21	134	5735	478	4.58%	0.37%	2.34%
2009	134	163	27	213	6626	552	5.44%	0.41%	3.21%
2010	133	244	20	351	7963	664	6.91%	0.25%	4.41%
JAN-SEPT 2011	115	157	36	318	6211	518	4.99%	0.58%	5.12%

Pumwani Maternity Hospital

Year	POST PARTUM HAEMORRHAGE	OBSTRUCTED LABOUR	MATERNAL DEATHS	PERINATAL DEATHS	DELIVERIES	Referrals from Pumwani to KNH	Referrals from Health centres to Pumwani	Mean no. of deliveries per month	% complicated deliveries	% maternal deaths	% perinatal deaths
2007	15	590	Not available	1,124	18,302	64	1,716	1,525	3.31%	no data	6.14%
2008	16	990		1,240	19,894	88	1,515	1,658	5.06%		6.23%
2009	10	550		1,288	19,192	78	1,503	1,599	2.92%		6.71%
2010	10	348		1,004	18,684	119	1,346	1,557	1.92%		5.37%

Sabatia Health Centre

Year	POST PARTUM HAEMORRHAGE	MATERNAL DEATHS	PERINATAL DEATHS	DELIVERIES	Referrals to District hospital	Mean no. of deliveries per month	% complicated deliveries	% maternal deaths	% perinatal deaths
2007	Not indicated	0	0	425	72	35	no data	no data	no data
2008	16(referred)	0	0	435	66	36	3.68%	0.0%	0.0%
2009	10 managed at facility)	0	1	496	73	41	2.02%	0.0%	0.2%
2010	9(managed at facility)	2 due to severe anaemia	1	524	66	44	1.72%	0.4%	0.2%
2011	7 managed at facility	0	0	472	22	52	1.48%	0.0%	0.0%

Annex 2: Standards audited and results of measurements by site.

Site	Standard	Measurement 1 Results	Actions taken	Measurement 2	Further action
KNH	All patients admitted to KNH labour ward will have their BP taken and urine analysis for protein done and appropriate management instituted as per protocol within 30 minutes of admission.	Discovered there were not enough BP machines - in fact only 1 on the labour ward.	Asked the project to acquire BP machines	Identified that there were further gaps - e.g. greater workload, a lot of patients and very few staff to attend them. Midwife to patient ration was 1:10 -1:16	Lobbied for these increased staff numbers and got 7 midwives redeployed to the labour ward. Went for 3 rd measurement
	All patients delivered in labour ward should have active management of 3 rd stage of labour whereby oxytocin 10 IU is given IM within 1 minute of delivery, placenta is delivered by controlled cord traction and the uterus massaged every 15 minutes for 1 hour.	Increased workload due to national health insurance scheme. No of patients in unit increased but no. midwives stayed the same	Used measurements to provide evidence to hospital management on caseload per midwife. Worked with referral units to improve their case management.	Did not achieve 100% of patients having active management.	Continued to work with midwives to improve case management; Further work with the referral units. Went for 3 rd measurement
	Every woman admitted is monitored using a partograph	Knowledge gaps regarding use of partograph	Held refresher training on partograph on the 20 th and 28 th September and 18 th October 2011. A total of 48 midwives from labour ward, 5 midwives from postnatal wards and 15 student nurses attended	Measurement 2 scheduled for November/December 2011	
Pumwani	Every woman in established phase of labour should be monitored using a partograph	Staff didn't have knowledge of and couldn't use a partograph; very few patients had a partograph in their files; Most partographs didn't even have the patients name on it; many mothers would end up in obstructed labour with a poor outcome; many ruptured uterus and many babies not surviving.	Trained staff on use of partographs and entry of correct data (incorrect data can lead to misdiagnosis); met with records staff to encourage them to ensure all midwives / doctors completed partographs; trained doctors to use partographs as part of their rounds; Introduced a limit of who many patients per nurse; worked with the admissions desk to reduce no.s of patients being unnecessarily admitted to the labour ward; ensured that any students that were triaging patients were	Did not reach 100%	Continued to work with staff and admissions desk; went for measurement 3. After measurement 3 feel they have met the standard;

			signed off by a qualified nurse to prevent unnecessary cases going through to the labour ward.		
	Every woman diagnosed with PPH should have it controlled within ½ an hour of diagnosis	Mothers not encouraged to keep their bladder empty; Tears not sutured as much as needed (this isn't causing severe PPH, but resulting in some blood loss); massage the uterus at regular intervals after placental delivery not occurring; mothers not encouraged to breastfeed; poor monitoring and follow up in high risk cases e.g. where there has been prolonged labour or low haemoglobin levels; in cases where women are referred late there is often confusion and proper examination after the 3 rd stage isn't happening; no protocol on control of PPH	Development of protocol covering - introduction of administration of oxytocin; massage of uterus after delivery of placenta; emptying bladder, start breastfeeding; protocol chart in every cubicle so staff know steps; ensuring additional drug (ciprotech) is available on labour ward to treat severe PPH.	Not yet undertaken 2 nd measurement	
MTRH	Every woman attending ANC must have her BP measured and recorded and urine tested for protein and results recorded.	Measurement of BP was consistent, however urine was only consistently tested during the first ANC visit not on subsequent follow up visits (a concurrent PMTCT project covers the cost of urine testing during the first ANC visit, but not on subsequent ones)	Discussed how to address ensuring urine analysed during every ANC visit with the RH department in the hospital. FIGO enabled them to buy urine sticks and developed cost sharing model with the mother	Good improvement - urine analysis was up to 80%. However, realised there was also an issue of recording procedures - i.e. urine might be tested but not recorded in the notes.	Whilst 100% was not achieved they decided to move on to the next standard rather than seeking 100% coverage.
	Every woman admitted in labour ward has her urine tested for protein on admission and her BP measured and recorded			Almost 90% of mothers had their urine tested and BP measured.	There remain some issues over improving documentation and record keeping. The hospital administration is following up with this.
	Every woman has her vital signs taken and recorded ½ hourly for the first 2 hours after delivery	The first measurement showed that whilst vital signs were taken in the first half hour this was rarely followed up for the full 2 hours after delivery. Gap in knowledge of staff on why it was important to check BP for 2 hours after birth	Held discussions with staff to improve their knowledge on post birth practices.		
	In all deliveries there is active management of the 3 rd stage and preparedness for the management of PPH	Good results with active management occurring in almost 100% of cases. The challenge was documentation of processes.	Training in the hospital on emergency preparedness. Development of protocols on management of PPH Active management protocols placed on walls in the ward	Good results maintained in 2 nd measurement.	

Sabatia	Every midwife will be able to diagnose and manage or refer cases of PPH immediately to reduce maternal mortality and morbidity	<p>The facility has inadequate resources which limit delivery of quality services i.e.:</p> <ul style="list-style-type: none"> ◦ Drugs i.e. syntocinon, ergometrine, syntometrine, which makes it difficult to manage PPH. Iron and folate supplements to boost Hb antenatally ◦ Inadequate manpower which creates burnout leading to inappropriate management. ◦ Inadequate funds to facilitate transportation to the hospital in case of a referral. ◦ Lack of ambulance leading to delayed referrals. <p>All the respondents received their training in PPH during basic and on job (continuous medical education), while 40% have attended workshops for updates. All the respondents are able to apply the skills learnt.</p> <p>There is no regular facilitative supervision by the DHMT to assess progress, identify gaps and give appropriate support as was raised by all respondents.</p>	<ol style="list-style-type: none"> 1. Introduced a system of cost sharing so as to purchase syntocinon and other supplies. 2. Wrote a proposal to the Constituency Development fund for purchase of an ambulance 3. Organized for outreach services to sensitize the community on safe motherhood 4. Organized for a meeting with civil society for linkage with the community 5. Requested District Health Management Team to deploy more staff when available and conduct regular support supervision. 6. Trained staff in clinical audit and other updates 7. Referral system put in place for fueling an ambulance when there is need for referral 8. Displayed protocol /job aid in labour ward on management of PPH 	The standard was evaluated and based on the findings the standard was met. Currently plans are underway to employ nurses by CDF to curb staff shortage.	<ul style="list-style-type: none"> • Established maternal audit committee in the facility • Planned for monthly audit team meetings • Held a meeting with staff from peripheral health centres (referring facilities)on clinical audit and discussed on measures to put in place so as to avoid delays in referrals. • Continuous outreaches
	Every woman attending ANC clinic has her BP measured correctly, urine tested for protein and results recorded	Basic equipment not available. Not all staff measuring BP or testing Urine.	<ul style="list-style-type: none"> • Purchased BP machine and uristix • Mentorship provided by KOGS. • Sensitized staff on the importance of measuring BP correctly and testing urine for protein and recording the results. • Health education to clients on identification of danger signs during pregnancy • Protocol /job aids pre-Eclampsia displayed in ANC and labour ward. 	The basic equipment necessary to accomplish the standard were available i.e BP machine, stethoscope, uristix, latrine and the job aid on PET displayed on walls in labour ward and ANC room.	<ul style="list-style-type: none"> • Purchased 2 digital BP machines, 3 mercury sphygmomanometer and 3 stethoscopes by KOGS /FIGO office . • Availed uristix by purchasing using funds from FIGO • Continuous medical education by staff for updates. • Monthly audit meetings to assess progress. • Appraised each midwife in the yearly performance contract based on the set standards ,this motivated

	<p>Every woman in labour is monitored by use of a partograph</p>	<ul style="list-style-type: none"> ◦ The partograph used for 19.5% of patients. ◦ Providers using the partograph 'always' was 0 while 'sometimes' was 8 (of 8 interviewees). 	<ul style="list-style-type: none"> • Staff trained on how to correctly fill & interpret a partograph. • Aailed partograph & admission forms for every client by purchasing. • Mentorship by Gynaecologist /obstetrician. • Aailed supplies in labour ward i.e. uristix, BP machine, gloves & other infection prevention commodities by purchasing. • Continuous medical education to staff on use of partograph • Continuous mentorship • Purchasing of supplies • Photocopying of partographs • Aailed clock in the labour ward courtesy of FIGO 	<ul style="list-style-type: none"> • The partograph used for 41% of patients • Providers using the partograph 'always' was 3 while 'sometimes' was 6 (of 9 interviewees). • There were inadequate infection prevention supplies, clock and thermometers reported. • Improvement was noted in the supply of partograph and blood pressure machines. The supply of urinalysis kits and fetoscopes was recorded as reduced. • The providers report deficiencies in competence in filling the partographs especially in the key areas of urine monitoring, moulding, descent, contractions, amniotic fluid assessment and cervical dilatation. • Review of the completed partographs showed most omissions were made in recording the time of rupture of membranes, amniotic fluid status, degree of moulding, maternal pulse, maternal temperature and urine assessment. • Competency deficiencies may be associated with incomplete partographs 	<p>the staff</p> <ul style="list-style-type: none"> • Avail adequate supplies of partographs • Avail a clock in maternity unit • Conduct update training on partograph stressing on key areas of deficiencies. • Concurrently implement standard on infection prevention in labour ward. • Continuously motivate staff to use partograph through support supervision.
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				recording for personal data, fetal data and progress of labour and checking of urine data. However other factors may account for the variance during recording of maternal vital signs.	
	Every health care provider reduces the risk of spreading infection by washing hands before and after every procedure	Although all staff know the procedure for hand washing, 70% reported actually washing their hands before and after every procedure and 60% were observed to actually wash their hands before and after every procedure. We need to have a change of attitude through CME on importance of hand washing and continuous supportive supervision. There is need to avail Infection prevention protocols & guidelines and environmental hygiene policy within the institution.	<ul style="list-style-type: none"> • Trained staff on the importance of hand washing before & after every procedure. • Purchased buckets with taps, filled with water in every room, soap availed for washing . • Continuous audit team meeting monthly to monitor & evaluate staff. • Displayed protocol /job and on the walls for hand washing 	<ul style="list-style-type: none"> • Infection prevention protocols are displayed in all areas, infection control team meets regularly and that infection surveillance is practiced regularly. • Mattresses are cleaned between clients in all areas as is the case in maternity ward. • Disposal of sanitary pads is correctly done in Antenatal clinic, Outpatient department and in the laboratory. • Purchased supplies and equipment for infection prevention e.g. gloves, disinfectant mackintosh, strengthened the system of sterilization of instruments by autoclaving. 	
	All staff implement infection prevention measures	No data			

Annex 3: Baseline and Endline Data

	KNH	PUMWANI	SABATIA H/C	MTRH
	%	%	%	%
Discussed birth place	95%	90%	86%	86%
Advised on what to do if complication	99%	89%	69%	99%
Given malaria medicine	20%	19%	93%	14%
Discussed child spacing	83%	51%	51%	57%
Talked about STI/HIV/AIDS	100%	96%	98%	97%
Information/advised on care of baby	99%	76%	44%	75%
Discussed transport to health facility	88%	80%	31%	73%
Met healthcare provider in private	94%	94%	83%	96%
Discussed progress of pregnancy	99%	96%	100%	98%
Opportunity to ask questions	81%	78%	42%	52%
Understood answers	98%	88%	100%	98%
Asked to return to facility	100%	96%	100%	99%

Figure showing proportion of positive responses to exit interview questions at endline survey in June 2011 in four facilities.

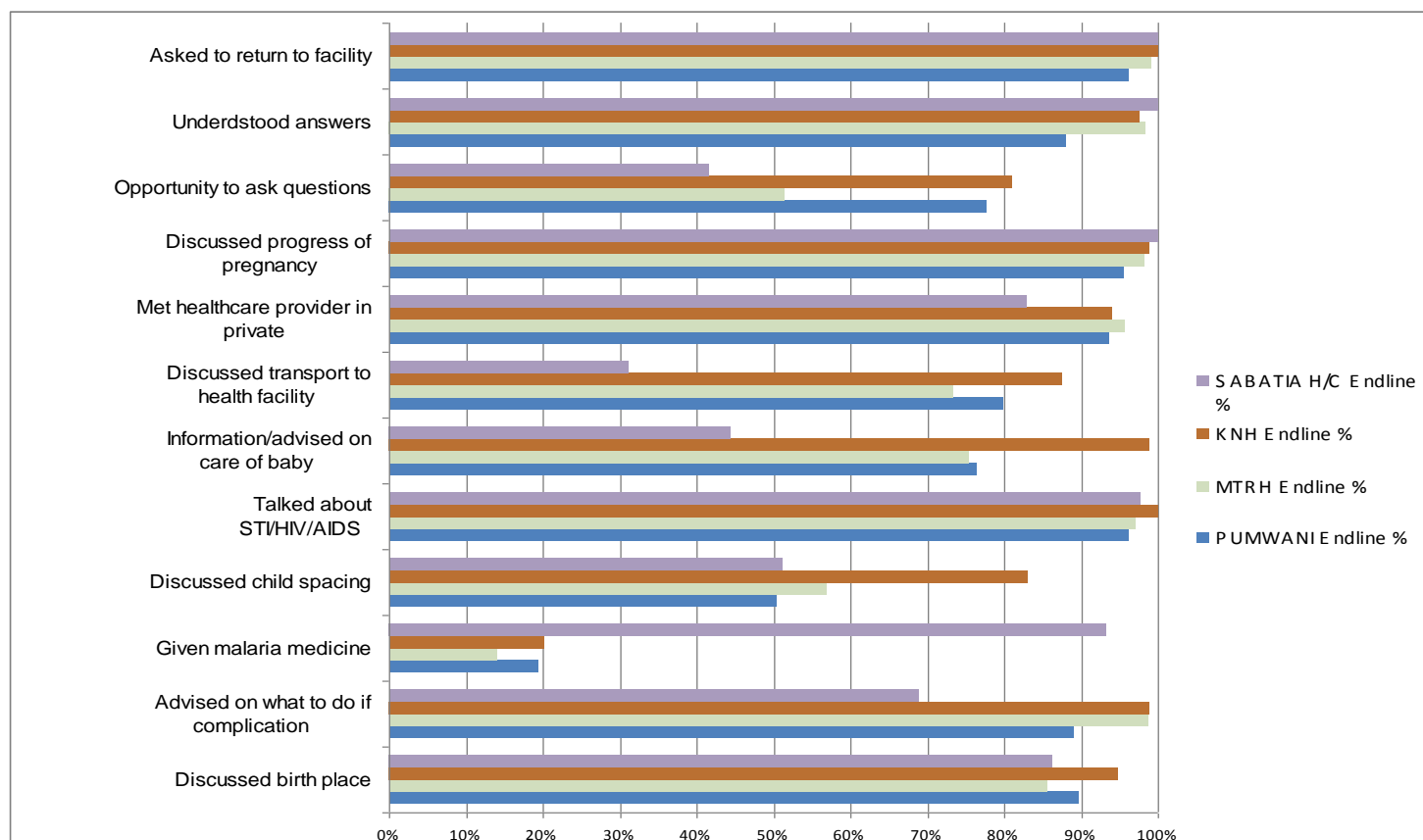


Table 2: ANC CLIENT EXIT INTERVIEW Services received during visit to the clinic

	KNH		PUMWANI		SABATIA H/C		MTRH	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Had blood-pressure measured today	100%	99%	67%	99%	71%	100%	100%	100%
Listen to baby's heart today	100%	99%	67%	97%	100%	96%	100%	99%
Given iron supplements during pregnancy	92%	66%	11%	77%	100%	47%	28%	42%
Given info. on diet & nutrition during pregnancy	100%	93%	60%	84%	100%	80%	93%	90%

Figure showing difference between key indicators for baseline (2009) and endline (2011) exit interview responses for project sites

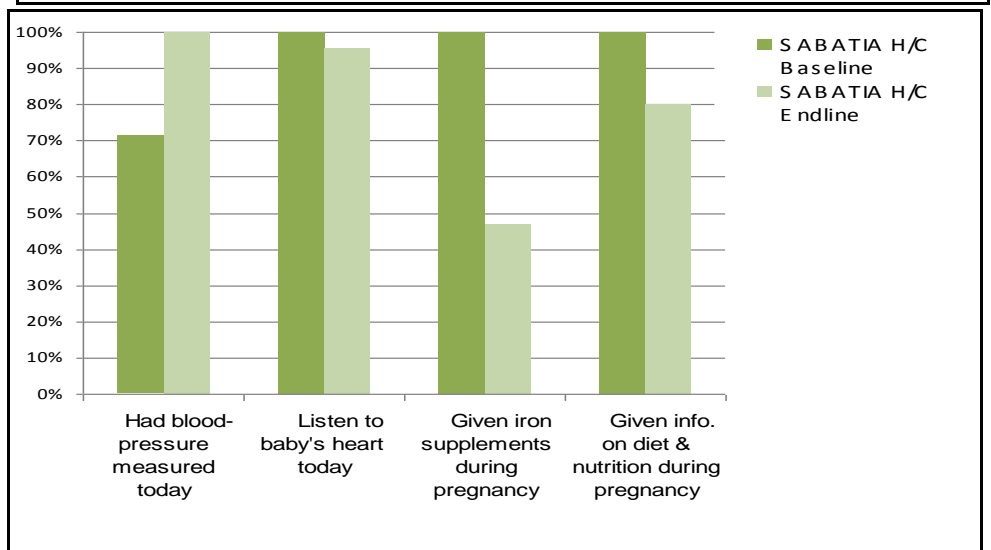
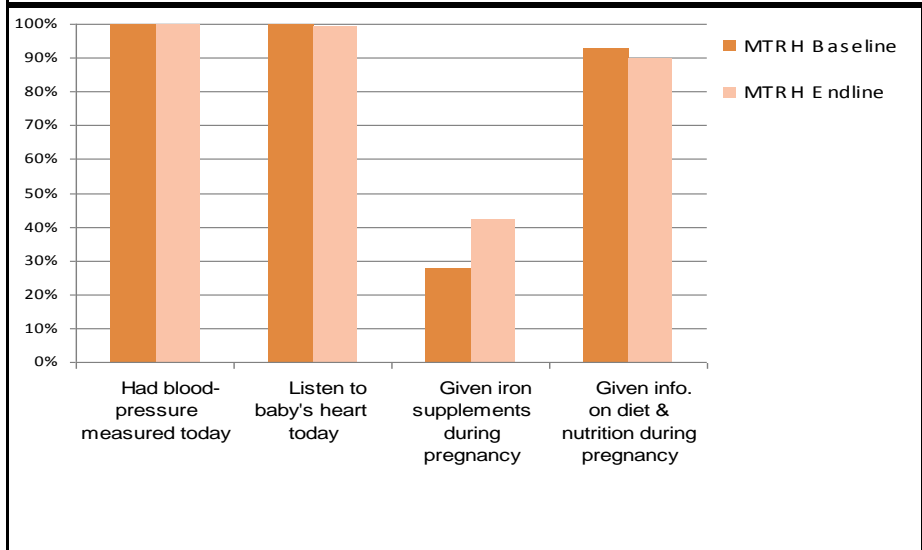
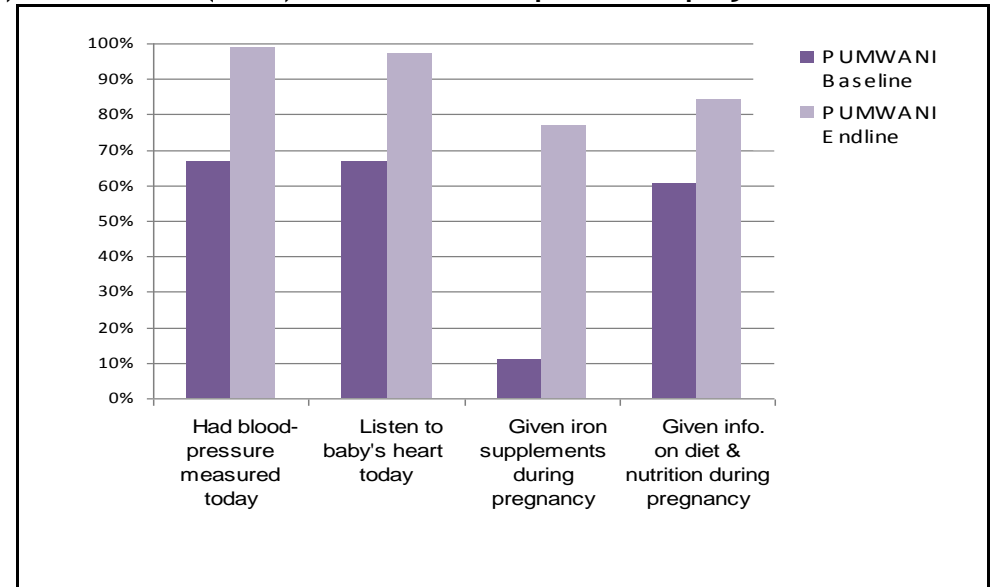
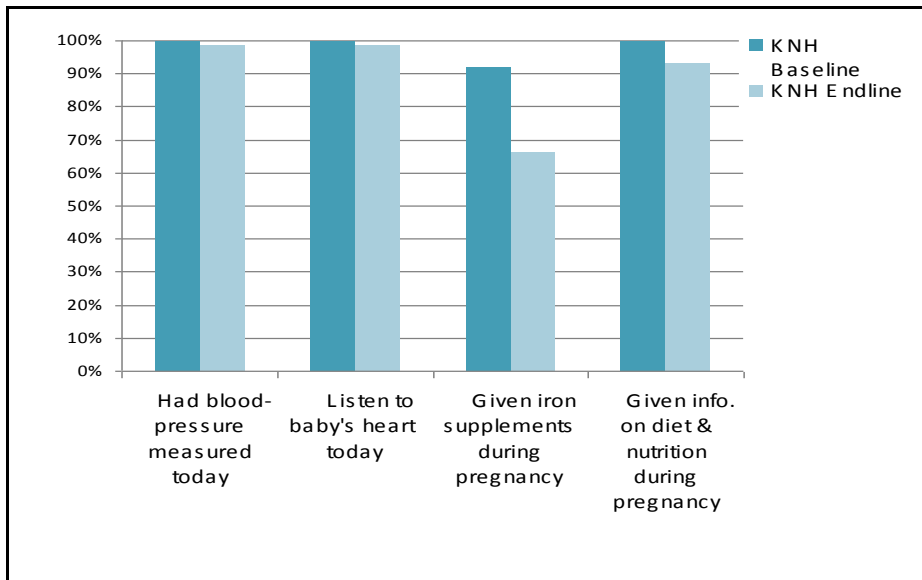


Table 3: ANC CLIENT EXIT INTVIEW

variable	Baseline		Endline		Baseline		Endline		Baseline		Endline		Baseline		Endline	
	KNH		KNH		Pumwani		Pumwani		Sabatia HC		Sabatia HC		MTRH		MTRH	
	n	n(%)	n	n(%)	n	n(%)	n	n(%)	n	n(%)	n	n(%)	n	n(%)	n	n(%)
Helper at last pregnancy at the moment the baby was born																
Nurse or midwife	29	19(65.5)	66	35(53.03)	22	13(59.1)	72	33(45.83)	12	5(41.7)	26	15(57.69)	21	17(81)	179	90(50.28)
Doctor or clinical officer	29	8(27.6)	66	29(43.94)	22	8(36.4)	72	32(44.44)	12	0(0)	26	7(26.92)	21	3(14.3)	179	61(34.08)
Medical assistant	29	1(3.4)	66	1(1.52)	22	0(0)	72	0(0)	12	1(8.3)	26	0(0)	21	0(0)	179	0(0)
Traditional birth attendant (TBA)	29	0(0)	66	0(0)	22	1(4.5)	72	3(4.17)	12	4(33.3)	26	1(3.85)	21	1(4.8)	179	2(1.12)
Mother or other family member	29	1(3.4)	66	1(1.52)	22	0(0)	72	3(4.17)	12	2(16.7)	26	3(11.54)	21	0(0)	179	16(8.94)
Other (specify):			66	0(0)			72	1(1.39)			26	0(0)			179	10(5.59)

Table 4: ANC RECORD REVIEW

variable	Baseline (all facilities)	Endline				Total Endline	Variation						
		KNH	PUMWANI	SABATIA HC	MTRH								
N	n	Statistic	n	Statistic	n	Statistic	n	Statistic					
Supplementation with iron/folic acid recorded on the card (count(%))	179	99(55.3%)	98	17(17.3)	118	6(5.1)	132	86(65.2)	499	258(51.7)	847	367(43.3%)	-12.00%
Provision of malaria treatment or prophylaxis recorded on the record (count(%))	181	69(38.1%)	98	5(5.1)	119	7(5.9)	132	130(98.5)	499	183(36.7)	848	325(38.3%)	0.20%

Table 5: Analysis of Complicated delivery/obstructed labour By Health Facility

	KNH		MTRH		Pumwani		Sabatia		P
	baseline	endline	baseline	endline	baseline	endline	baseline	endline	
was the descent of the head static (no progress for three hours or more)	n	n	n	n	n	n	n	n	
No	41 6(14.6)	29	34 7(20.4)	135 37((27.4)	57 23(40.4)	31		3	Chi2(2) = 8.9; P= 0.011
Yes	41 35(85.4)	29 29(100)	34 27(79.4)	135 98 (72.6)	57 34(59.6)	31 31(100)		3 3(100)	
Were strong contractions recorded for more than three hours without descent									
No	41 16(39)	29	34 6(17.6)	110 1(3.2)	56 26(46.4)	31 1(3.2)		3	Chi2(2) = 7.7; P= 0.021
Yes	41 25(61)	29 29(100)	34 28(82.4)	110 109(80.7)	56 30(53.6)	31 30(96.8)		3 3(100)	
Hours that elapsed past the action line (mean (SD))		3.72(3.82)		3.1(1.8)		3.5(1.3)		1.8(1.04)	
Recorded condition of the baby at birth									
Still birth	41 2(4.9)	29 0(0)	34 1(2.9)	135 9(6.7)	56 2(3.6)	31 0(0)		3 1(33.3)	Fisher exact =0.135
Live birth not good condition (Apgar Score <=6)	41 8(19.5)	29 2(6.9)	34 3(8.8)	135 61(45.2)	56 17(30.4)	31 5(16.1)		3 2(66.7)	
Live birth, good condition (Apgar 7-10 or equivalent)	41 31(75.6)	29 27(93.1)	34 30(88.2)	135 65(48.2)	56 37(66.1)	31 26(83.9)		3 0(0)	
Recorded mode of delivery									
Spontaneous		29		135 14(10.3)		31 0(0)		3 0(0)	Chi2(2) = 2.8; P= 0.241
Vacuum extraction		29		135 9(6.7)		31 0(0)		3 0(0)	
Forceps		29		135 4(3.0)		31 0(0)		3 0(0)	
Caesarian delivery	40 40(100)	29 29(100)	34 33(97.1)	135 108(80)	56(100)	31 31(100)		3 3(100)	
Symphysiotomy	40 0(0)		34 1(2.9)		0(0)				

The baseline and endline surveys for record reviews reviewing complicated deliveries at the health centre show that delays in clinical staff acting in the case of obstructed or prolonged labour (as shown on the partograph) persist. In three facilities, more than three hours elapsed between the time of delivery or action was taken (a mean of 3.7 hours in KH, 3.1 hours in MTH and 3.5 hours in Pumwani. Sabatia, however, had a delay of 1.8 hours on average before appropriate action was taken or when delivery took place. However, it is not clear how these records were selected for review and over what period of time the deliveries reviewed covers, or whether the action taken after the delay was appropriate.

Annex 4: Example Audit Tools

FIGO SMNH PROJECT: KNH SITE
AUDIT TOOL DEVELOPMENT: June 17, 2009

Audit objective

All patients admitted to KNH Labour Ward will have their Blood Pressure taken and urinalysis for protein done and appropriate management instituted as per protocol within 30minutes of admission (from the time patient settled in bed).

Sample: first 50 patients.

Time frame: daily for one week quarterly.

Auditors : Dr. Owende
 Dr. Jaldesa
 Dr. Waithaka
 Dorothy Agedo
 Polly Gichoni
 Yatich Emmy
 Grace Wang'ombe

Structure: checklist

Are there adequate beds in labor ward	Yes _____	No _____
Do the beds have clean linen	Yes _____	No _____
*BP machines available and in working order	Yes _____	No _____
Stethoscopes available and in working order	Yes _____	No _____
Observation charts available in patients file	Yes _____	No _____
Toilet available	Yes _____	No _____
Toilet clean and in working order	Yes _____	No _____
PET protocol chart available in the labor ward	Yes _____	No _____
Are the pre eclampsia IEC materials displayed for patients	Yes _____	No _____

*electronic BP machine.

Give a brief explanation for every NO response

Give suggestions on how to meet the set standard

Patient settled on a bed with clean linen Yes ____ No ____
 Patient alone in bed Yes ____ No ____
 Was the patient greeted Yes ____ No ____
 Did clinician introduce self to patient Yes ____ No ____
 Was the procedure explained to the client Yes ____ No ____
 **Was BP taken as per protocol Yes ____ No ____

 Was BP recorded on the chart in patients file Yes ____ No ____
 Was BP recorded on the nurses cardex Yes ____ No ____
 Was the patient told her BP reading Yes ____ No ____
 Patient shown the toilet Yes ____ No ____
 Patient given measuring jar or urine container Yes ____ No ____
 ***Urine tested for proteins Yes ____ No ____
 Urine test recorded on observation chart Yes ____ No ____
 Urine test recorded on cardex Yes ____ No ____

Patient informed about urine test result Yes ____ No ____
 ****Pre-eclampsia diagnosed as per protocol Yes ____ No ____
 *PET managed according to laid down protocol Yes ____ No ____
 *** 3 parameter Dipstix

Give a brief explanation for every NO response

Give suggestions on how to meet the set standard

BP taken by skilled personnel Yes ____ No ____
 BP normal Yes ____ No ____
 PET protocol used to manage PET Yes ____ No ____

Sabatia - PPH Audit Tool

This questionnaire has been developed by Caroline Vihenda in conjunction with FIGO to evaluate PPH diagnosis, management and referral at Sabatia Health Centre.

1. How many staffs are working in labour ward currently?

2. Which type of health provider are you?

Doctor Clinical Officer Nurse/Midwife Others

3. How many years have you worked in health services?

4. How long have you been working in the labour ward?

5. Do you have other objectives/goals?

Yes No Don't know

6. If yes state some of the objectives

7. Do you think you have the necessary resources to do your job well?

Yes No Don't know

8. If no list what is lacking

9. Explain what cannot be done without these resources

10. When were you last trained in RH (PPH)?

11. In what aspect did you receive training? Specify.

12. Have you been able to apply what you have learned in the training course?

Yes No

13. If no, Why? If yes go to next question.

14. Do you think you have sufficient skills for Diagnosis and management of PPH including referral?

Yes No

15. If no, what skills do you lack?

16. How many times in the past six months has a supervisor come to this facility for the purpose of supervising you?

Sabatia ANC audit tool

STANDARD: Every woman attending ANC Clinic has her BP measured correctly for protein and results recorded

OBJECTIVE: To ensure that every woman attending antenatal clinic has her blood pressure measured correctly, urine tested for protein and the results recorded.

BASIC EQUIPMENT/FACILITIES

Equipment/facility	Available	Not available
Blood Pressure apparatus (Sphygmomanometer)		
Stethoscope		
Toilet/latrine		
Uristix		
PET protocols/job aids		

ANTENATAL CLIENT EXIT INTERVIEW

I would like you to think about all your visits during this pregnancy, including today.

During any of these visits did the staff:-

- | | | |
|---|-----|----|
| a) Ask about your medical history? | Yes | No |
| b) Do physical examination? | Yes | No |
| c) Explain the procedure, and the results interpreted to you? | Yes | No |
| d) Explain the procedure of collecting Urine specimen? | Yes | No |
| e) Was the urine sample taken, tested and results interpreted to you? | Yes | No |

RECORD REVIEW (ANTENATAL CLINIC CARD)

- 1) How many ANC visits are recorded on the card? (**Enter total**) _____
- 2) Is the medical history recorded on the card including physical examination? Yes
No
- 3) How many times was the BP measured and recorded on the card? (**Enter the number of recordings**) _____
- 4) How many times was proteinuria and recorded on the card? (**Enter the number of recordings**) _____

Pumwani Partograph Audit tool

MEASUREMENT TOOL

The standard chosen was: Every woman in labour should be monitored using a partograph.

- 1) Serial.....
- 2) Year of qualification.....
- 3) Latest qualification.....
- 4) How long have you worked in labour ward?
.....months
- 5) Have you been taught how to use a partograph
 - a) Yes
 - b) No
- 6) How often do you use a partograph?
 - a) Always
 - b) Sometimes
 - c) Not at all
- 7) Reason/s for not using a partograph
 - a).....
 - b).....
 - c).....
 - d).....
- 8) Have you ever attended an update on the use of partograph?
 - a) Yes
 - b) No
 - c) Cannot remember
- 9) If yes how long ago?
- 10) Do you think a partograph is useful in the management of labour
 - a) Yes
 - b) No
- 11) If yes how? Give reason.
- 12) Name the five critical components of the partograph
 - a)
 - b)
 - c)
 - d)
 - e)
- 13) What parameters are used for monitoring?
 - a) Foetal condition
 - b) Progress of labour
 - c) Maternal Health status
- 14) Use the information below to fill a partograph:

a) Normal labour

M.A. is Para 1+0. Gravid 2. She was admitted on 12/8/10 at 0700hrs. I.P No. 13308/10. Her membranes ruptured at 0300hrs. At admission she had 2 contractions in 10 minutes each lasting 20 secs. Head 5/5, foetal heart rate (FHR) was 142/min. She had a cervical dilation of 2cm and the liquor was clear. She was reviewed at 1100hrs at that time she was having 3 contractions in 10 mins each lasting 35 secs, the head 3/5, FHR was 132/min, the cervical dilatation of 5 cm. B/P 120/70 mmHg, Temp 36.8, Pulse 80/min. Urine output 300mls, negative protein, glucose and acetone. At 1300 3/10 contractions each 40 secs, FHR 140/min, Pulse 90/min and Temp 37. The foetal head was 0/5; cervix was fully dilated, amniotic fluid was clear, sutures not apposed B/P 130/70 mm Hg. Urine output 130mls, and negative, glucose protein and acetone. At 16.30 hrs she had a spontaneous vaginal delivery to a female who weighed 3200gms.

b) Prolonged active phase.

LK Primigravidae was admitted on 14/9/2010 at 0900 hrs I.P No. 13484/10. Her membranes were intact. She was having two contractions in 10 mins each lasting 20 secs. FHR 140/min. The foetal head was 5/5 with a cervical dilatation of 5 cm. BP 130/70 mm Hg, Temp 37.2 pulse 88/min, urine output 250mls, negative protein, glucose and acetone. At 1300hrs contractions 2/10 each lasting 20 secs. FHR 142/min, Pulse 90/min, temp 37.3. Foetal head 5/5 and a cervical dilatation of 5cm with intact membranes. At 1700 hrs contractions 2/10 min lasting 20 ses, Pulse 86/min, Temp 36.8, BP 130/70 mm Hg, FHR 138/min foetal head was 5/5 with a cervical dilatation of 6cm. Urine output 300mls negative protein, glucose and acetone. Membranes were ruptured with clear liquor. Labour augmented with syntocinon 2.5 units in 500mls starting at 10 drops/min. At 2000hrs FHR 140/min, Pulse 90/min. Head 2/5, cervix 7cm dilated, 3/10 contractions each lasting for 30 secs. Infusion increased to 50 drops /min

c) Prolonged labour

M.N 34 years old Para 4+0 Gravida 5 was admitted on 4/8/10 at 1000hrs. I.P No. 11786/10. At admission she was having 3/10 contractions each lasting 30 secs. foetal head descent was 4/5, FHR 138/min, cervical dilation of 4 cm. She was draining clear liquor which had been draining from 0800hrs of the same day, sutures were unapposed. BP 120/80 mmHg. Temp 37.2 Pulse 84/min. Urine output 280 mls. Negative protein, glucosuria and acetone. At 1400hrs contractions were 3/10 each lasting 40 secs, FHR 142/min. Pulse 90/min, Temp 37.3 Head 3/5, cervical dilatation 6cm. At 1800hrs, contractions 4/10 each lasting 45 secs. FHR 132, Pulse 86/min BP 120/70. Head 3/5 cervical dilation 6cm and draining clear liquor, sutures overlapped but reducible. At 2200hrs FH 90/mi, contractions 4/10 each 50 secs. Head 3/5 with meconium stained liquor. Cervix 6 cm dilated, sutures overlapped but not reducible. Pulse 100/min Urine output 100mls. Protein and glucose negative, acetone 1+. Ceasarean section was done a female infant with a poor respiratory effort delivered. Weighed 4680gms.

15) Interpretation

Annex 5: Stakeholders contacted

Project stakeholders	Name	Organisation / Country	Date of interview	Level of Participation
Project Secretariat			27.09.11	
Project Director	Dr Omondi Ogutu	KOGS, Kenya	28.09.11	SSI, PEFM, ER
Project Researcher	Prof. Patrick. Ndavi	KOGS, Kenya	28.09.11	SSI
Assistant Project Director	Ms Nerea Ojanga (midwife)	KNH, Kenya	26.09.11	SSI
Project Administrator	Mrs Joyce Oduor	SMN Project, Kenya	26.09.11 28.09.11	SSI, PEFM, EC, ER
Focal Person	Dr. Philomena Owende	KNH, Kenya	27.09.11	SSI, ER
Quality Assurance Coordinator	Joan Buluku	KNH		ER
Midwife	Grace Wango'mbe	KNH		ER
Focal person	Dr. Richard Mogeni	MTRH, Kenya	28.09.11	SSI, ER
Midwife	Janet Rukunga	MTRH, Kenya	27.09.11	SSI, ER
Obstetrician	Dr. Wilson Aruasa	MTRH, Kenya		EC
Midwife	Abraham Rono	MTRH, Kenya		ER
Focal person	Dr. Baraza	Pumwani, Kenya	28.09.11	SSI, ER
Focal midwife	Mrs Monica Kipsang	Pumwani, Kenya	28.09.11	SSI, ER
Focal person	Margaret Imbali	Sabatia, Kenya		EC, ER
Midwife	Caroline Vihenda	Sabatia, Kenya		EC, ER
KOGS co-opted member	Dr. Geoffrey Matete	Sabatia, Kenya		ER
Civil Society Organisation	Mr. Peter Gichanga	MENGEN, Kenya	28.09.11	SSI
Mentor	Dr Tony Falconer	RCOG, UK	21.09.11	SSI
Mentor	Dr Will Stones	RCOG, KOGS, Kenya	11.10.11	SSI
Programme Manager	Moya Crangle	FIGO, Canada	20.09.11	SSI, EC, ER

SSI - Semi-structured interview;
EC - Email Correspondence;

PEFM - Preliminary evaluation feedback meeting
ER - Evaluation Review

Annex 6: TORs

FIGO Saving Mothers and Newborns (SMN) Project Final Evaluation Terms of Reference

Background:

The goal of this 4 year project has been to reduce maternal and newborn morbidity and mortality and contribute to the achievement of MDG goals 4 and 5 in a series of low income countries. Secondary objectives of the project include:

5. Strengthening the capacity of national professional societies to engage in maternal-newborn health through the design and implementation of projects in the field;
6. Strengthening cooperation between FIGO and national societies, and also between societies in regions or of different economic levels;
7. Strengthening cooperation between national societies and national stakeholders involved in safe motherhood and newborn health;
8. Increasing the credibility of national societies locally to provide technical support to Ministries of Health and national professional councils.

The project has been implemented in a number of countries wherever possible through twinning mechanisms between ob/gyn societies of developed countries with those in the implementing countries (north-south partnerships). In turn, the ob/gyn societies in the low income countries were expected to partner with national midwifery societies, Ministries of Health, civil society organizations and other relevant stakeholders to ensure harmonization of the project with the health policies and practices in the countries and the proper implementation and sustainability of the tenets of the project

The key innovation of this initiative has been to increase women's access to new, cost-effective and evidence-based technology for the reduction of maternal and newborn mortality in the countries concerned. Thus, the individual projects should have included staff training and re-training using modules such as the ALARM International program, maternal mortality audits, improvement of antenatal and delivery services, improvement of emergency obstetrics care (EOC) in selected districts, the development and dissemination of obstetric management protocols and algorithms, introduction and dissemination of partogram monitoring of labor and consolidation of the use of essential drugs like misoprostol and uninject for the prevention and treatment of post-partum hemorrhage. Projects were also intended to work with local communities to increase awareness on issues related to safe motherhood, and to promote increased utilization of interventions to reduce maternal and newborn morbidity and mortality.

Scope of work (general):

FIGO has engaged Options to undertake a final evaluation, in the form of a critical review, of each project and to provide individual country reports and an overall evaluation report to submit to the funder (SIDA). These reports will summarize and state to what extent the objectives of the project have been achieved.

Individual projects have been sited in ten countries and individual reviews are required for each project. Five reviews will take place in-country (Peru, Uganda, Pakistan, Haiti and Nigeria) and five will be desk-based (Kosovo, Kenya, Moldova, Uruguay and Ukraine). The reviews will take place between April 2010 and July 2011. Concise individual reports will be submitted to FIGO after each review. A summary report will also be prepared when all reviews are completed.

FIGO recognizes that measuring the maternal health impact of this project is not feasible. However there may be areas/examples where this has occurred. In this case, vignettes could be provided in the report to illustrate this. This final evaluation needs to take into consideration and highlight in the report the fact that the project has had limited funding.

Objectives of each review:

- To evaluate the acquired capacity of the ob/gyn and midwifery society to conduct projects relevant to the promotion of safe motherhood and the improvement of maternal health
- To report on and evaluate any of the following indicators that were listed in the initial project proposal:
 - Improvements in access to essential obstetrical care services and new technologies
 - Improvements in access to skilled birth attendants
 - Improved health facilities
 - Lowering of maternal case fatality rate
 - The level of community mobilization and participation
 - Improvements in access to health facilities with basic equipment, supplies and medication for basic obstetrical care services and new technologies such as tamponade and uniject
 - How social and cultural barriers to maternal care have been identified and addressed
 - Improvements in collaboration and the engagement of health providers, governments, community organizations and civil society to understand why women and newborns are dying and how to prevent it
- To describe what the project has meant to each country project and professional society as well as FIGO as an organization
- To list the lessons learnt for FIGO
- To present the successes, challenges and shortcomings of the project, together with a discussion of possible recommendations for the future direction for each country's project (if the project is continuing beyond the period of FIGO funding)

Desk review to include (Kenya):

- A series of phone interviews with key individuals within the project including the partners etc. (A full list of interviewees is provided below).
- A critical review of any written material (narrative reports etc), and other evidence individuals in the project can cite to support the endline review.
- Interviews with mentors, FIGO staff and SMNH Committee members as necessary.

A draft interview schedule will be provided before the evaluation, together with a draft report structure. However, the consultant will need to use his/her professional judgement in deciding if there are other issues that also need to be explored and/or which key issues need to be investigated in greater depth than the draft interview schedule provides. Both qualitative and quantitative evidence should be presented in the report to support the consultant’s findings.

A brief summary of the project is provided at the end of this document.

Deliverables:

Report of the individual country evaluation. (Individual country reports will be approximately 10 pages long, although this will be confirmed prior to the evaluation).

Timeline:

The evaluation will occur following completion of the project’s funding from FIGO and Sida (December 2010). It is intended that the project will have submitted final documentation which will be made available to the consultant, as will other key documents such as the report of an earlier baseline review, annual narrative reports etc.

The desk-based review will take place between 26th and 30th of September. **The total assignment should take no more than 5 days.** The breakdown of days is:

1 day	Preparation
3 days	Review
1 day	Report writing

The evaluation should be submitted to Options 10 days after the review. Options will provide the first comments on the draft written outputs within 2 weeks of submission and will share the report with SOGC for feedback. The consultant will finalize written outputs, responding to comments received, and submit final versions within two days of receipt of comments.

Languages:

English is the language requirement for this assignment.