

UNICEF Somalia

**Emergency Obstetric and
Neonatal Care (EmONC)
Needs Assessment in Selected
Health Facilities in NEZ,
Puntland - September 2011**

Report on Findings

Dr. ZAITOON QAZI

November, 2011



**DCI-SANTE/2011-238-131
A continuum of care approach to
Sexual and Reproductive Health in
Somalia**



Ministry of Health, Puntland

ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
AMDD	Averting Maternal Death and Disability Program
AMTSL	Active Management of Third Stage of Labour
ARV	Antiretroviral
BEmONC	Basic Emergency Obstetric and Neonatal Care
BRH	Bosaso Regional Hospital
CEmONC	Comprehensive Emergency Obstetric and Neonatal Care
D&C	Dilation and Curettage
EC	European Commission
D&E	Dilation and Evacuation
E&C	Evacuation and Curettage
EmONC	Emergency Obstetric and Neonatal Care
FANC	Focused Antenatal Care
FP	Family Planning
GGH	Garowe General Hospital
GMC	Galkayo Medical Centre
GYN/OB	Gynaecologist/ Obstetrician
HC	Health Centre
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
IUD	Intrauterine device
IV	Intravenous
KMC	Kangaroo Mother Care
LBW	Low Birth Weight
MCH Centre	Mother and Child Health Centre
MNH	Maternal and newborn health
MRP	Manual Removal of Placenta
MVA	Manual Vacuum Aspiration
NGO	Nongovernmental Organization
NBC	Newborn Care
NBR	Newborn Resuscitation
OPD	Outpatient Department
PAC	Post abortion Care
PMTCT	Prevention of Mother-to-Child Transmission
PPH	Postpartum Haemorrhage
RH	Referral Hospital
SBA	Skilled birth attendant
STI	Sexually Transmitted Infection
SVD	Spontaneous Vaginal Deliveries
UNICEF	United Nations Children's Fund
VE	Vacuum Extraction
WHO	World Health Organization

ACKNOWLEDGMENTS

This assessment has been made possible only through the generous, timely, and extensive support of The Ministry of Health (MOH), Puntland particularly the Directorate General of Health and the Regional offices, the Hospital authorities in Garowe, Bosaso and Galkayo. Without their mediation, assistance, and facilitation, the assessment would not have been possible.

I am very grateful to UNICEF Zonal Office, NEZ Puntland, particularly Accelerated Child Survival and Development (ACSD) team for providing technical and logistic support for this assessment of The Emergency Obstetric and Neonatal Care (EmONC) services in Puntland. My especial thanks are extended to.

The field implementation of the assessment required great courage, determination and motivation on the assessors' part. I deeply appreciate the support of Mrs. Hodan Mire Ismail, National MCH Officer, UNICEF, NEZ, Puntland, who contributed in so many ways to undertake this important assessment.

I would like to acknowledge the support and extend my especial thanks to Averting Maternal Death and Disability (AMDD) Program tools of Columbia University that guided us carry out this assessment of selected health facilities in Puntland.

Most importantly, this assessment would not have been possible without the participation of the individual health care providers at the selected health facilities who generously gave of their valuable time to provide information on various issues linked to EmONC practices and services at their respected health facilities. We are sincerely thankful to each one of them.

Sincerely,

Dr. Zaitoon Qazi
Principal Investigator,
ACSD Consultant on MNH
UNICEF Somalia Support Centre (USSC)
October 2011



Office of the Director General

Ref: - *MOT/HR/AG/06/102/011*

Date: 27/11/2011

To: UNICEF, Puntland field office,
Att: Health and Nutrition section.

Subject: Endorsement EMOC assessment report and findings

The ministry of health welcomes the support of European commission (EC) through UNICEF to implement emergency obstetric care in 7 health facilities in Puntland and the Ministry is committed to the implementation such project.

In this regard the ministry of health approves the findings of the assessment report undertaken by UNICEF through Dr Zaitoun.

We are very much happy with the support of EC through UNICEF and hope acceleration and timely implementation of the findings presented in the EMOC assessment dissemination workshop in Garowe.

Best regards,

Dr Abdirizak Hersi Hassan
Director General
Ministry of Health- Puntland



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Emergency Obstetric and Neonatal Care (EmONC) Needs Assessment in Selected Health Facilities in Puntland NEZ, Somalia September 2011 - Report

1. General Information

Under the European Commission (EC) project, "A continuum of care approach to Sexual and Reproductive Health in Somalia", UNICEF is aiming at improving access, availability and quality of Emergency Obstetric and Newborn Care (EmONC) and other related MNH services at selected health facilities in all the three geographical zones of Somalia. The Project supports currently functioning 15 MCH/ Health Centres and 5 Referral level Hospital (RH).

In order to assess the capabilities and capacities of these selected health facilities to provide quality Basic and Comprehensive Emergency Obstetric and Newborn Care (BEmONC and CEmONC), two separate sets of tools were developed and adapted based on "The Averting Maternal Death and Disability Program (AMDD)" model. To assess the feasibility and effectiveness of these tools, field testing was carried out in August 2011 in Borama district of Awdal Region, Somaliland. One health centre, Central MCH Centre (CMC) and one referral hospital, Borama General Hospital (BGH) were selected for this purpose.

Before proceeding with field work, meetings were held with the Senior Office bearers of the Ministry of Health in respective districts to involve and keep them informed about the objective of the assessment and whole project. These officers gave their generous and timely support and facilitated the field assessment in the selected health facilities.

Having successfully fielded tested the EmONC Needs Assessment tool, an adapted version of AMDD tool, the actual assessment started in September 2011 from Puntland (Garowe, Bossaso and Galkayo) in the first phase and then followed by the work in other Zones of Somalia.

2. Rationale of the Assessment

The EmONC needs assessment is a descriptive assessment of selected health facilities of Somalia. The assessment by definition examined only facility-based services; therefore provides a limited perspective of Maternal and Newborn Health (MNH) care as it only includes those patients who are able to reach the health facilities, while many others receiving care at home may die at home or on the way. It also does not include home deliveries generally conducted by TBAs and some domiciliary midwifery services. It is very crucial to note that the desired outcome is a continuum of care from home to hospital with all essential MNH quality care services effectively provided at all levels and are to be linked with efficient referral systems.

The current needs assessment is designed to identify needs and gaps and to inform programmatic efforts for increasing quality, coverage, and utilization of EmONC services as well as critical support systems at all referral levels.

3. EmONC signal functions

The availability of EmONC determines the ability of health care system to respond to obstetric and newborn complications and its contribution to reduce maternal and newborn mortality and morbidity.

The UN and AMDD have defined nine essential EmONC services termed as "Signal Functions" for the treatment and management of MNH complications. The designation of an EmONC facility depends upon round-the-clock availability of services and whether these life-saving signal functions have been performed recently. To qualify for a Basic EmONC (BEmONC) facility, the health centres and hospitals must have performed the following seven signal functions within the past three months (WHO, 2009; AMDD, 2009):

- i. administered parenteral antibiotics;
- ii. administered parenteral anticonvulsants;
- iii. administered parenteral oxytocics;
- iv. performed manual removal of placenta;
- v. performed removal of retained products (manual vacuum aspiration);
- vi. performed assisted vaginal delivery (with vacuum extractor or forceps); and
- vii. performed neonatal resuscitation with bag and mask.

For a Comprehensive EmONC (CEmONC) facility, the hospitals must have performed following two additional signal functions besides above seven, within the past three months:

- i. blood transfusion; and
- ii. Caesarean section.

4. Objectives of the assessment

The overall purpose of the EmONC needs assessment in selected health facilities of Somalia was to identify gaps in service delivery and suggest measures to bridge those gaps and ultimately intervene to improve MNH survival. The needs assessment examined facility readiness, provider skills, the quality of services, and coverage and utilization of EmONC services. .

The objectives of this needs assessment were to:

1. Identify current needs and gaps in selected MCH and referral health facilities in Somalia related to infrastructure, equipment, supplies, essential medications, and human resources for EmONC service provision. (*Part I*)
2. Determine the number and causes of maternal and newborn complications and deaths in the past 12 months (*Part I*)
3. Understand and assess the number of services provided in the past 3 to 12 months for each of the BEmONC and CEmONC signal functions (*Part I*)
4. Review and assess the quality of service delivery and immediate neonatal care through observations and interviews at BEmONC and CEmONC facilities (*Part I*)
5. Determine providers knowledge, competency and clinical decision-making skills for MNH and Newborn care (NBC) in the following main areas through written and oral case scenarios (*Part II*)
 - a. Focused antenatal care (ANC);
 - b. Identification of pregnant women requiring special care plan;
 - c. Labour and delivery, including Active Management of Third stage of Labour (AMTSL);
 - d. Use of Partograph;
 - e. Management of postpartum care (PNC) and complications specially postpartum haemorrhage (PPH)
 - f. Manual removal of placenta;
 - g. Manual vacuum aspiration;
 - h. Complications, management and prevention of Unsafe abortion (PUA);
 - i. Immediate newborn care (NBC) and Newborn resuscitation (NBR); and Care for rape survivors (Gender Based Sexual Violence - SGBV).

5 Selection of Facilities

The approved EC project* informs the selection of 7 MCH facilities for BEmONC and 3 referral hospitals for CEmONC assessment. According to the document, the selection was primarily discussed in zones and consulted with zonal authorities and facilities were selected based on following criteria:

- Need of BEmONC services in the catchment population and areas
- Capacity to deliver quality ANC, PNC and EmONC services with planned support
- Located within practical distance and adequate transport availability for emergency referrals to a hospital
- Facility not currently receiving adequate support from other sources

Table: 5.1 Facilities Selected

Region	Districts	MCH Centres for BEmONC facility	Referral Hospitals for CEmONC facility
Bari	Bosaso	Hagi Abdulhi Horseed (Hro Awar)	Bosaso Regional Hospital (BRG)
Nugal	Garowe	Waaberi Gambool	Garowe General Hospital (GGH)
Mudug	Galkayo	South Galkayo Galkayo IDP	Galkayo Medical Centre Hospital (GMC)

*EuropeAid/129203/C/ACT/Multi – Annex A – Grant application form

The detail facility wise findings of each assessed facility are given in two Excel sheets attached with this report.

6. Methodology and the EmONC Assessment Tool

The Averting Maternal Death and Disability (AMDD) tool of Columbia University was modified and adapted to the local needs. There were 8 modules of questionnaire for MCH/Health Centres to assess as Basic Emergency Obstetric and Newborn Care (BEmONC) facilities and 9 modules were designed for Referral Hospitals for Comprehensive Emergency Obstetric and Newborn Care (CEmONC) assessment.

For the assessment purpose all these modules were grouped in two parts. Part I comprising of modules 1-6 and 8-9, was designed to assess health facility readiness whereas the Part II i.e. module 7 designed to assess provider knowledge, skills, competencies and decision making abilities to manage maternal and newborn care. All the selected MCH centres were identified for the assessment of their readiness and provider's skills to offer BEmONC services 24/7, whereas the Hospitals were examined for CEmONC with Caesarean Section and blood transfusion services.

The Modules used in Part I (Facility Readiness) of the needs assessment drew on multiple sources of information. Most modules required a review of written records in the health facility, including delivery registers, log books, operating room registers, patient medical records or clinical cards, Partograph, and other records. The director of the facility, along with the in-charges of relevant units (including maternity, operating theatre, records department, laboratory, and pharmacy) facilitated access to these records. Most modules also required asking questions of the facility's medical director and in-charges of various units.

7. Measurement tools for data collection and topics

Measurement Tool	Topics included	Source of Information
Part I: Facility Readiness - Modules		
Module 1: Facility Infrastructure	Facility status and capacity, infrastructure, service delivery, transport and communication, referral services and payment for services (User Fees)	Facility In-charge and observation and personal interview
Module 2: Human Resources	Overall Staffing 24/7 availability, cadre wise provision of Signal Functions/Essential services	In-charge facility
Module 3: Availability of Drugs, Supplies and Equipment:	Pharmacy -medicines/drugs, Equipment and Supplies for Obstetrics and Gynea, Laboratory, Infection prevention, guidelines and protocols	Respective In-charges of the units, stock log books, registers
Module 4: EmONC Case Summary -Facility Data for Indicators:	Deliveries number and types Obstetric complications and referrals, maternal and newborn outcomes, Post abortion Care and Family Planning	Facility registers and reports
Module 5: EmONC Signal Functions and other Essential Services carried out	Performance of signal functions (Parenteral antibiotics, parenteral uterotonics, parenteral anticonvulsants, manual removal of placenta, removal of retained products, assisted vaginal delivery, newborn resuscitation, blood transfusion and caesarean section); Focused ANC, AMTSL and other MNH-related services and reasons for non-performance	In-charge health facility, clinical records, Observation and interviews
Module 6: Review of Partograph (last 2 normal deliveries)	Physical review of last two normal delivery partograph and notes	In-charge Maternity, clinical records, case summaries
Module 8: Review of Caesarean Section Delivery	Basic data on two most recent Caesarean sections in the past year; Capacity of facility and provider training, experience and usual practices	Oral interviews of Medical Practitioner/Post graduate Trainees doctors, Gynaecologist/Obstetrician, In-charge clinical records
Module 9: Maternal Death/Audit Review	Indications, practices, and delays for the three most recent maternal deaths	In-charge Maternity, clinic records
Part II: Provider's Knowledge and Skills		
Module 7: Provider Knowledge and Competency for Maternal and Newborn Care	Test provider knowledge of EmONC conditions and services (labour and delivery/AMTSL; manual removal of placenta and newborn resuscitation); training received in each EmONC competency	Guided oral interview with provider; Case scenarios and verbal interview to assess provider knowledge, clinical decision-making skills.

8. Findings of EmONC Needs Assessment (See facility wise findings in attached Excel sheet)

8.1. Facility Infrastructure, Transport and Communication, and User Fees

Adequate availability of infrastructure is a crucial prerequisite for effective MNH services delivery. It is extremely difficult for health care provider to offer quality services without physical space (rooms), beds for patients and source of electricity and running water. Similarly, functional mode of transport and communication systems is essential for timely and quick referral of emergency patients to a next higher level of health care facility.

8.1.1. Availability of designated rooms and beds for maternity care

50% of the MCH did not have designated physical space available to carry out delivery services. The building was too small for BEmONC facility. In one of the MCH, the delivery services, ANC clinic and general OPD are all housed in one room. The referral level hospitals (Garowe, Bosaso and Galkayo) have different picture for maternity services. Only Galkayo Medical Centre (GMC) has separate room for labour and delivery whereas in Garowe General Hospital (GGH) it is combined together in one room. Bosaso Regional Hospital (BRH) did not have labour room at all. The delivery room is quite small, very congested and untidy without hand washing facilities.

Table: 8.1.1. Availability of delivery rooms and beds at assessed facilities

	Name of MCH	*Catchment Population	No. of Rooms available	Delivery/ labour room	PNC room (No. of beds)
Bosaso	Hagi Abdulhi	Not known	5	Y**	N
	Horseed	Not known	3	N	N
Garowe	Waaberi	Not known	7	Y	Y (3)
	Gambool	20,000	12	Y	Y (2)
Galkayo	South Galkayo	10,000	8	Y	Y (2)
	Galkayo IDP	7000	4	Y**	Y (1) #
	Bosaso Regional Hospital	130,000	5	Y	7
	Garowe General Hospital	191,000	NA	Y	12
	Galkayo Medical Centre	160,000	NA	Y	37

* Source: Facilities' information

** Delivery, ANC and OPD combined in one room

One Foam mattress on the floor

There was no designated Eclampsia room in GMC and BRH. In GMC separate 2 beds were being used for eclampsia cases whereas in BRH at the time of assessment one eclampsia patient was lying on the stretcher in the open veranda.

The number of maternity beds and delivery tables are below the WHO standards (1991) for prenatal and postnatal care (30-32 for every 1000 deliveries). The BRH had only 7 out of 120 total beds while based on their average 650 deliveries a year it should have at least 21 maternity beds. The GGH having 12 out of 72 hospital beds and an average of 400 deliveries a year was just one bed below the WHO standards. However, GMC had 37 out of total 72 beds allocated for maternity and was well above the required number of beds. All these hospitals carry out normal deliveries as well.

How available space is utilized?



Much needed space is wasted at one of the MCH in Bosaso. Two out of total five rooms were occupied like that. The MCH did not have any separate/designated delivery or labour room. Delivery, OPD and P/N care were housed in one small room with one delivery table. No post natal room and no beds. Mother were sent back home after 3-hrs on the pretext of non-availability of space at the facility.

Some of the MCH centres (50%) were completely without beds and delivery tables at all. The situation was also quite disturbing in some of the MCHs having enough number of rooms that were not effectively utilized for maternity care. The photos below depict the picture one of such facility in Puntland

8.1.2. Availability of electricity and water

The availability of running water and access to a continuous and reliable supply of electricity is a crucial prerequisite for quality MNH services delivery. It is extremely difficult for service provider to maintain standard infection prevention measures and provide effective medical care without having source of running water and electricity supply.

At the time of assessment only 1 out of 6 MCHs (Waaberi) had both electricity and water supply. Whereas 2 out of 6 MCHs (Horseed and Hagi Abdulhi), had neither electricity nor water supply. Gambool quite a busy MCH did not have running water or hand washing facilities. Staff used main tap outside for hand washing, however electricity was available 24 hrs. The remaining 2 MCH centres (South Galkayo and IDP Galkayo) had either electricity or water supply. Water is generally purchased through tanker or donkey cart supply. The cost of tanker supplied water (twice a month) varied from \$20-24 and was generally contributed by the staff from their own salary (M/W salary \$30/ month).

All the three referral hospitals BRH, GMC and GGH had 24 hrs electricity and running water supply. Back-up generator support is also available.

8.1.3. Availability of communication and transport for referral services

Virtually all the health facilities did not have any means of transport facility for referral cases. Patients' families were responsible to make such arrangements on their own. The distances varied from 2 to 5 Km and the time required to reach referral hospital (by motorized vehicle) ranged from 45 minutes to 2 hours respectively. It costs around 10-20 USDs.

All (100%) of the facilities visited had at least one functioning mode of communication on site, most often a cell phone owned by staff (100%). However, none of the facility had a policy in place to reimburse the staff that used their cell phones for work purposes. No other mode of communication was available such as radio, VHF.

8.1.4. User fees for services and cost-sharing and cost recovery

User fees and charges for services, drugs, and supplies may deter poor women from seeking facility based medical services for themselves and their newborn babies. Officially there was no formal fees structure for health care services particularly in MCH, and almost all the facilities surveyed did not require formal payment before consultation especially in case of emergency. Nevertheless, women do pay nominal fee for services and the medicines that are supplied from the facility pharmacy. In general no payment was required to get routine medicines for ANC/PNC and EPI services.

User fees and cost for various services varied across facilities. Overall, 50% of MCHs (IDP Galkayo, South Galkayo and Horseed) at the time of assessment were providing all the services free of cost, the reasons being either the delivery services were not available (Horseed) or the cost was borne by the supporting NGOs (SDRO and PMWDO).

The cost at remaining MCHs varied depending upon the nature of services and care provided. The MCHs (Waaberi, Hagi Abdulhi and Gambool) would charge \$10-20 for facility based normal delivery and \$5-15 for home delivery depending upon patient's paying capacity. All sick cases were asked to pay \$1 for consultation and around \$0.20-0.30 for supply of medicines.

The user fee at referral hospitals was also not consistent and varied from \$10-20 for normal deliveries and \$200-250 for C-sections. The GGH would charge \$10 and \$17 for normal and assisted deliveries respectively; and \$200 for C-Section, \$33 MVA, \$10 for ultrasound; other services cost from \$1-3. Whereas at GMC, normal and assisted deliveries would cost \$20, C-Section \$250 and charges for other services varied from \$ 2-10. However, the hospital waived off their charges for poor IDPs.

In contrast, BRH provided free normal and assisted deliveries and MVA, but required payment of \$200 for C-Section, \$10 for Ultrasound; and \$1-5 for other services.

The revenue thus generated was utilized to meet recurring expenditure of MCH (cost-recovery and cost-sharing phenomenon) to buy cleaning products, pay water tanker charges and honorarium to volunteers working in the facility. However, in case hospitals, it was deposited in to the hospital accounts.

8.2. Human Resources

8.2.1. Health workers currently working

The human resources category in the MCH is: qualified nurse, auxiliary nurse, midwife, or nurse who also holds midwifery skills. The overall staff position in MCHs and hospitals was not at satisfactory level to carry out full-fledged BEmONC and CEmONC functions. Two out of three hospitals had qualified gynaecologist/obstetrician; the third one though had an experienced and on-the-job trained doctor looking after CEmONC cases. Only BRH had a qualified paediatrician, the rest were managing with a GP. None of the three tertiary care hospitals had any anaesthetist, qualified OT technicians or Nurse -anaesthetist. The OT and anaesthesia work is managed by trained (non-qualified technicians. This caused the limitations for adult and neonatal resuscitation requiring intubation.

There was a lack of HR in hospitals that could provide blood transfusions for mothers and newborns. The number of midwives and nurses for maternity unit also needs to be enhanced in all the three hospitals.

All the MCH assessed, had at least one or more M/W in position. Tables below show the snapshots of the technical staff available for MNH care at MCH and hospital maternity units. However, for 24/7 BEmONC more skilled birth attendants (SBA) would be needed to fill in the gaps.

Table: 8.2.1.A. Existing Technical Staff for Maternity Care at MCH

Name of MCH	Total HR available	Nurse	Midwife	Nurse midwife	Auxiliary	Lab technician trained
Hagi Abdulhi	8	2 (male)	2	---	2**	2**
Horseed	8	4	2	---	2	---
Waaberi	9	1 (male)	1*	3	4	---
Gambool	13	2	6	---	4	1##
South Galkayo	4	1 (male)	---	1	2§ (N)	---
Galkayo IDP	4	1 (male)	1	---	2	---

*Not fully qualified

** Volunteers

§Auxiliary M/W

Qualified M/W

Table: 8.2.1.B. Existing Technical Staff for Maternity Care at Hospitals

HR Cadres	BRH	GGH	GM Centre
Gynea/Obst.	2 (male)	1*	1
PG Registrar	1	---	1
GPs	5	1	3
General Surgeon	2	2	1
Paediatrician	1	1##	---
Nurse Qualified	4	2	1
Midwife	4	2	1
Nurse midwife	---	1	---
Anaesthetist	1#	1#	---
OT technician trained	2	3	2
Nurse Anaesthesia. tech. trained	3	1	1
Auxiliary (N, N/mw	3	3	3
Lab technician trained	5	4**	5**
Health Off., Med. Asst.	---	---	1
Total HR	33	20	21

*Non-qualified but with extensive experience and trained

**Two qualified

#Trained, non-qualified anaesthetist

##GP with on the job training

8.2.2. 24-Hours availability

Round-the-clock services are necessary to provide pregnant women with skilled care during labour and delivery, including the management of obstetric complications. The survey asked which health workers

were onsite and on call overnight and on weekends (Friday in Somalia). The findings show that midwives, nurses, and medical doctors form the backbone of 24/7 service provision at both MCH and hospitals.

The hospital claims to provide 24/7 services, but generally people have tendency to leave the premises around 13:00 hours. However, almost all hospitals had a medical doctor, a midwife, and a nurse onsite overnight and on the weekends; while the gynaecologist/obstetrician, paediatrician and other GPs would remain on call to attend emergency cases. Despite the need for EmONC services around the clock only BRH and GGH had accessible pharmacy 24/7

The situation differed in MCH centres. Staff claimed to be on call after working hours and generally the watchman was responsible to call the In-charge in case any emergency arrived. But the review of one maternal death revealed the contrary facts when a mother delivered by a TBA at IDP Galkayo during night, died of PPH without receiving any skilled help.

8.2.3. Health workers providing EmONC signal functions

Lack of human resources may constrain a facility's ability to offer EmONC signal functions. The assessment found that most health facilities had at least one health care provider who could perform some of the BEmONC or CEmONC signal functions. The underlying causes are ignorance, lack of motivation due to salary structure (low salaries: Gynaecologist \$300 and M/W \$30) and physical infrastructure constraints.

In both hospital and MCH settings, M/W and nurses provided relatively few of the signal functions, mostly anticonvulsants, oxytocics, manual removal of placenta and 10% cases, neonatal resuscitation. While in hospital settings they did blood transfusions as well as assisting surgeons to perform caesarean sections.

8.3. Availability of Drugs, Equipment, and Supplies

The availability of essential drugs, equipment, and supplies play a major role in delivering high-quality EmONC and other MNH related services.

8.3.1. Source of Supply of medicines, drugs and other supplies

NGOs/donors/UN agencies were the primary source of supply of medicine and medical supplies including gloves, syringes, and infection prevention products for all MCH and partially for hospitals. Generally the medicines were supplied as kit by UNICEF and UNFPA whereas UNHCR provided financial support to GMC for local purchases.

Every health facility assessed had either a pharmacy or a supply of medicine. Only 40-50% of each facility type had drug inventory registers, but they were not always up to date. Assessment observed that the mechanism to discard expired medicine and first-in- first out was also lacking in 50% of all health facilities

Pharmacy access varied widely across facility types. Only 25% of all health facilities had accessible pharmacy 24/7 despite the need for EmONC services around the clock.

One of the hospitals had Separate independent VCT unit fully supplied with ARVs for mothers and newborns.

8.3.2. Availability of essential EmONC drugs

Drugs related to EmONC signal functions and emergencies require several different types of drugs that include antibiotics, anticonvulsants, antihypertensive, uterotonic, prostaglandins and drugs for use in emergencies. Gaps were present in availability of several essential EmONC drugs at the time of assessment.

Virtually, the essential EmONC drugs were missing in all the MCHs such as Injectable antibiotics, anticonvulsants, uterotonics and antihypertensive. Oxytocin - an effective and WHO recommended prophylactic uteronic to prevent atonic PPH was not available in 5 out of 9 facilities. Oral Ergometrine was being used as an alternative. Unfortunately, the only MCH (Gambool) having Oxytocin, had kept the drug at room temp and was using that way due to non-availability of separate refrigerator to store the drug since as a policy issue, it could not be kept in EPI cold chain refrigerator.

Many facilities (7 out of 9) including BRH and GGH did not have Magnesium sulphate - a WHO recommended drug of choice to prevent pre-eclampsia becoming an eclampsia. Instead diazepam or oral Phenobarbiton were being practiced. Around 56% of all assessed health facilities did not have oxytocin. In one of the MCH the oxytocin had been kept at room temp and was being used that way. In one of the referral hospital (GGH) the assessment observed considerable number of expired Post exposure prophylactic (PEP) kits – an essential element for the management of consequences of sexual and gender based violence and rape survivors.

8.3.3. Availability of contraceptives

Maternal and neonatal mortality rates in whole of Somalia are considerably high. Little can be done to improve these indicators without universal access to birth spacing/family planning, quality EmONC and SRH care. Birth spacing improves family well-being by ensuring reduced maternal and child deaths.

Supply of clinical contraceptives was lacking across 3/4th of the facilities assessed, they relied only on counselling on breast feeding as means of birth spacing. However, all three hospitals offered oral pills and IUDs. Interestingly one MCH (Horseed) had boxes of female condoms and offered particularly to C-section cases. More clients were referred to this MCH by the hospital and nearby villages. In-charge M/W is very intelligent and knowledgeable person.

Contraceptives are not part of the medicine kit supplied by UNICEF while UNFPA kits containing some condoms and emergency contraceptive pills, are mostly delivered through MOH which does not always translate to adequate supply, at least not at MCH level.

Existing BS activities are sporadic and there is no existing national plan. BS commodities are delivered mostly to hospitals and except for male condoms; supplies do not seem to trickle down to health centre level. Due to perceived political, religious and cultural barriers the issue of BS remains one of the most serious gaps in Somalia, considering the potential impact of BS on preventing a large number of maternal deaths.

8.3.4. Availability of newborn supplies and equipment in maternity unit

With regards to availability of basic and emergency newborn care supplies and equipment in the maternity area, two of the referral hospital had the least commonly available items Radiant warmer and fluorescent tubes to treat neonatal jaundice. However, at GMC 5 new sophisticated incubators and radiant warmer could not be used due to lack of trained manpower and/or oxygen supply. These were being used as baby cots. The incubator at GGH was non-functional.

The main deficiency noted in almost all the MCH and the hospitals except GGH, was the non-availability of ambu bag and mask for immediate newborn resuscitation. Some of the



**Functional Radiant warmer at GGH
and non-utilization of Incubators at GMC**

paramedics at hospital level were not able to use it properly - not maintaining the seal of the mask. BRH, the largest and state level hospital in Puntland did not have incubator as well newborn resuscitation equipment. None of the hospitals could provide special care for pre-term or low birth weight babies due to skilled HR and supply constraints. Kangaroo Mother Care (KMC) was practiced to keep the baby warm. No evidence based guidelines were available on any technical aspect of MNH care

8.3.5. Equipment and supplies for delivery room and Operating theatre

MCH and hospitals were generally better equipped with items needed for delivery services except one MCH (Horseed) where space limitation was the main constraint. The hospitals generally had good stock of equipment and instruments to carry out almost all CEmONC services. In fact extra loads packed RH kit for referral level was lying in the main pharmacy store of one of the hospital. However, vacuum extractor was missing in all MCH centres and in BRH hospital.



The operation theatre of all the hospitals had sufficient equipment and supplies for obstetric laparotomies and caesarean deliveries, including mini-laps and craniotomies. However, the equipment for general anaesthesia and oxygen cylinders with manometer and flow meter were completely lacking in all the hospitals.



Hi-tech New OT X-ray machines and steam sterilizer

In contrast, one of the tertiary care hospital, at the time of assessment, had high-tech sophisticated equipment (computerized OT X-ray machines and steam sterilizer) supplied by donors, just lying in the OT corridor untouched and un-used. The explanations offered were the language barrier and lack of skilled manpower.

8.3.6. Infection prevention measures

Service providers and the patients both can be at great risk of acquiring and transmitting potentially life-threatening infections through accidental exposure to blood and body fluids or contaminated objects.



Corner of OT used as storage in one of general hospital

The assessment while looking at the availability of materials needed to help prevent infection in the maternity unit found that most basic items (protective clothing, gloves, soap, trash bins etc.) were available. However, Mayo stand to hold sterilized instruments was missing in all the assessed facilities even in the hospitals, and 7 of 9 facilities did not



have bleach or bleaching powder. Ethanol was only available in 2 of the facilities while 90% of all facilities (8 of 9) had a stock of either chlorhexidine or povidone iodine for use as a disinfectant and

antiseptic.

Overall, the infection prevention measures were generally weaker everywhere especially hand washing and safe disposal of medical wastes. These measures were quite unsatisfactory at BRG and few MCHs such as South Galkayo, IDP Galkayo and Gambool.

Lack of running water supply also contributed negatively in adopting proper infection prevention measures.

8.3.7. Waste management and incineration

Health care waste management varied across all the MCHs assessed, with 50% burned 25% used incinerator while the rest buried or dumped. The hospitals generally used incinerators, however, functioning incinerator was available in 2 of 3 hospitals while the third one, used pit hole at the time of assessment to burn/burry the lab wastes. Generally, the placenta was carried by the family members for disposal purpose. Seven of nine facilities handed over the placenta to the families partially due to tradition and partially due to management problem.



The waste management and hygiene condition in two of MCH centres assessed

8.3.8. Protocols and evidence based guidelines in maternity ward

Evidence based technical and clinical guidelines can be an important tool and source of information for service provider and health managers to support high-quality service delivery. The needs assessment observed that none of the relevant guidelines and protocols on MNH and SRH care was available in these facilities. It is essential for the CEmONC and BEmONC facilities to have updated guidance material and technical tools at least on Pregnancy, Childbirth, Postpartum and Newborn Care (PCPNC), Managing Complications of Pregnancy and Childbirth (MCPC), Managing Newborn Problems (MNP), immediate newborn care, Focused ANC, Family Planning and infection protection for HIV/AIDS etc.

8.3.9. Laboratory and Blood Bank

The MCHs generally had none (South Galkayo, Waaberi, Horseed and IDP Galkayo) or limited Lab services provided by volunteer auxiliaries who acquired on the job skills. The remaining MCHs had very limited supplies for basic services such as blood Hb, urine albumin/sugar and MP testing with Paracheck kit.

The hospitals on the other hand tended to be better staffed with qualified and/or trained Lab technicians and well equipped and supplied with reagents and testing kits for hepatitis B, hepatitis C, HIV and syphilis. Blood typing and cross-matching reagents were available in all the hospitals as blood transfusion is a CEmONC signal function. However, blood bank facilities were not available at any of the hospitals due to infrastructure constraints. The blood was kept in laboratory refrigerators, and the items used for drawing and testing blood and performing transfusions were available and functional. The assessment was informed that new buildings were under construction at BRG and GGH that would house blood bank services.

Overall, all the facilities lacked evidence based operating guidelines and protocols except few protocols on malaria testing were available at 2 of the hospitals.

8.4. Case Summary and Facility Data for Indicators

The performance record and other facility data was examined to inform and guide the assessment about utilization, functioning, and quality of EmONC and other services in the facilities. Facility registers, reports patients' files were examined to gather the information on number and types of deliveries conducted, obstetric complications and referrals, maternal and newborn outcomes and the services provided for post abortion care and birth spacing

The assessment noted the lack of systematic way of reporting incidents, accidents, near misses or adverse events. There were no clear procedures for the investigation of any serious cases or deaths and the systematic way of feedback to staff was also missing. Performance indicators for priority issues and key processes, such as delays and waiting-time, infection prevention, maternal and neonatal deaths or stillbirths were not recorded and analysed.

8.4.1. Registers, reports and other data sources

Almost all facilities assessed were quite ignorant and disorganised in maintaining proper and up to date record for MNH activities. This was particularly noted in GMC which is otherwise supposed to be providing high quality care. Whether MCH centres or referral hospitals, generally there was only one register maintained to record all MNH related services. However this single register was relatively better kept in MCH than the hospitals with exception of Garowe General Hospital where cases were entered by type of delivery and indication for C-section.

Around 50% of facilities did not keep the copy of their monthly performance report for their own record. Generally all the MCH included home deliveries in their register on the pretext that TBAs were either linked to MCH or were helped by the midwife.

8.4.2. Maternal and neonatal outcome

The table below provides good indicator on MNH care provided at all the assessed facilities and outcome of mothers and newborns. During the period from January to September 2011 only one maternal death was reported in one of the MCH that occurred due to absence of skilled attendance during night time when a TBA could not manage the PPH after delivering the mother.

In contrast, the number of maternal deaths at referral hospitals was quite high. From Jan-Sept. 2011 there 17 maternal deaths were reported (GMC 2, GGH 12, BRH 2 and IDP Galkayo 1). On an average approximately 2 mothers were dying each month cumulatively among these facilities due to pregnancy related causes, direct or indirect. Most of these deaths were due to direct pregnancy related causes like PPH, obstructed/prolonged labour, Eclampsia, retained placenta and puerperal sepsis. Detail information on the delays and the care provided could not be obtained as patients' complete history, partograph usage and file notes were not available.

There had been considerable numbers of still births in all the three hospitals assessed. A total of 167 still births (GMC 22, GGH 89 and BRG 56) and 26 neonatal deaths (GMC3, GGH 16 and BRG 7) were reported among these hospitals during last nine months. The still birth on an average varied from 2-13 per month, the highest being in Garowe General Hospital.

Table: 8.4.2. Average monthly performance of HF - Jan-Sep. 2011

Name of MCH	ANC 1 st Visits	PNC Visits	Deliveries		Referrals	Mat. Death	Still Birth	NND	C-S
			Facility	Home					
Hagi Abdulhi	55	67	4	18	2	0	0	0	--
Horseed	87	90	0	15	2	0	0	0	--
Waaberi	78	10	25	28	1	0	0	0	--
Gambool	147	123	20	28	2	0	0	0	--
South Galkayo	16	2	2	3	1	0	0	0	--
Galkayo IDP	217	4	5	7	0	01*	0	0	--
GGH	0	0	33	--	NA	1.33 (12)	10 (89)	1.8 (16)	5.6 (51)
BRH	0	0	54	--	NA	0.22 (2)	6 (56)	1 (7)	17.4 (157)
GMC	--‡	--‡	33	--	NA	0.22 (2)	3‡ (23)	0.4 (3)	20 (182)

Source: HMIS office, UNICEF Somalia through HMIS Puntland

* Only one case reported in nine months' time – delivered by TBA at night without skilled help

Routine ANC is carried out at MCH centres

‡ Information not available

The service providers apparently take it lightly without much attention to look in to the details or follow up to find out the cause and possible solution to improve the antenatal and pre-delivery care.

8.4.3. Supervisory support

All the MCHs reported receiving on an average 6 supervisory visits during the last quarter. Mostly the MOH Regional Health Team was the organizations mentioned for the routine supervisory support. Supporting agencies, such as SRCS, SDRO, PMWDO UNICEF, UNFPA, UNHCR and WHO provided supervisory support/managing incentives and supplies.

Monitoring and supervision on part of head of the maternity unit in hospital was lacking particularly to ensure that clinical and technical record is complete and up to date; partograph is sued properly; and indoor patient files were completed with clinical and progress notes.

8.5. EmONC Signal Functions and Other Essential Services

The availability, quality, and utilization of EmONC services is measured through a set of performance indicators - Signal Functions, that assess the current ability and capability of health facilities to deliver the crucial life-saving interventions for mother and newborn babies. The assessment therefore, determined whether a facility had performed each signal function within the past three months. The data cover the seven signal functions that comprise BEmONC services (including parenteral antibiotics, uterotonics, parenteral anticonvulsants, manual removal of the placenta, removal of retained products, assisted vaginal delivery, and neonatal resuscitation) as well as additional two signal functions essential to CEmONC services (blood transfusions and caesarean sections).

8.5.1. Performance of signal functions

Performance of signal functions was extremely low all the MCH facilities. These signal functions were completely absent at Horseed MCH due to space limitations, skilled HR and required supplies while

the other 5 MCHs. offered only up to 3 BEmONC signal functions (uterotonics, manual removal of the placenta and removal of retained products). Injectable antibiotics, Oxytocin and magnesium sulphate were totally absent in 5 of 6 MCHs. Oral Ergometrine was used instead though as per WHO, oxytocin as the drug of choice (WHO, 2006) for prevention of PPH. Only one MCH (Gambool) could perform newborn resuscitation. Many reasons were cited for not performing the signal functions, mainly the infrastructure, HR and supply constraints.

The referral hospital though designated as CEmONC facilities, could not offer full range of CEmONC signal functions. All three hospitals were able to perform 8 out of 9 signal functions. Lack of skills, human resources, supplies and equipment were the common explanation for not performing newborn resuscitation.

Among the hospital that reported using parenteral anticonvulsants, BRH and GGH relied solely on Injection Diazepam as magnesium sulphate was not or seldom supplied, although WHO guidelines recommend magnesium sulphate as the drug of choice for management of pre-eclampsia and eclampsia. Both these hospital also did not have Oxytocin and used Misoprostol

Over 50% of the health facilities assessed (5 out of 9), performed the function of removing retained products of conception, however their techniques varied. Only 2 of 6 MCHs performed this function and did it manually using hands since the midwives are not trained in and did not have the required equipment for dilation and curettage (D&C), dilation and evacuation (D&E) or manual vacuum aspiration (MVA). All the hospitals had a choice of all three techniques available but only Garowe used MVA and remaining relied solely D&E and D&C methods, though WHO recommends MVA over D&C (WHO, 2003).

Facilities and skilled manpower for assisted vaginal deliveries were not available at MCH centres. The hospital, however, had both the options of vacuum extraction and forceps, available to assist with vaginal deliveries.

Two of the hospitals preferred vacuum extraction, while the third one employed both the methods of instrumental delivery. The frequent explanation for not performing forceps deliveries was more maternal trauma and fear of contracting STIs from the patients.

Newborn resuscitation was lacking across all the facilities. Most common and frequent explanation offered was lack of skilled staff, equipment, training, management issues. Fully qualified paediatrician was available only in in BRG. Rest of the facilities managed with GPs having on the job-training.

C-section was a challenge in the absence of qualified anaesthetist and OT technicians. Lack of general anaesthesia facilities, oxygen machine and proper blood bank posed limitation on the capacity and performance of operation theatre. The hospitals generally used Injection Ketamine as an anaesthetic followed by spinal anaesthesia. Due to limitation of blood bank, on-spot transfusion of blood donated by the family members was carried out.

8.5.2. Reasons for not performing the signal functions

While interviewing about the performance of signal functions, the service providers were also asked why any or some of those services were not provided. Staffs were encouraged to report more than one reason for not performing the signal function. Many MCH facilities did not provide a signal function because there were no supplies (Injectable antibiotics, oxytocics and anticonvulsants), space limitations or there was no indication – not necessarily because they were not capable of providing it. The majority of facilities, however, failed to provide signal functions even when they were indicated. Multiple explanations were presented. The reasons cited for not performing the removal of retained products included lack of human resources, training issues, lack of supplies and equipment, and management issues. While the reason for not doing assisted vaginal deliveries was the lack of supplies and

equipment, the frequent explanation for not performing neonatal resuscitation a lack of human resources and skilled manpower.

8.5.3. Other maternal and newborn health related services

EmONC service delivery is generally supplemented by other MNH and RH related services that form an essential part of comprehensive MNH care. The facilities were therefore, asked if they provided such services like Focused antenatal care, Active management of third stage of labour (AMTSL), Partograph usage, Breech delivery, Rapid HIV testing, Episiotomy, ARV therapy for mothers and newborns (PMTCT), Craniotomy, Intensive care for preterm and low birth weight babies, Birth spacing methods, Fistula repair, and Post abortion care.

The MCH were less likely than hospitals to offer many of these services. However, the hospitals had offered few of these services in the past three months. Nearly all of the facilities were not quite familiar with the concept of focused antenatal care Partograph or AMTSL, even though they would provide routine ANC and PNC or one or two steps of AMTSL. The vast majority of facilities, regardless of facility type, did not use Misoprostol for obstetric indications.

Majority of the facilities (6 out of 9) had performed five of the essential services in the past three months i.e. episiotomy, PMTCT, breech delivery, rapid HIV testing, treatment and management of STIs and some post abortion care. In contrast all the facilities assessed, had not used Partograph at all not even in last one year.

Birth spacing services were generally limited to counselling, condoms, oral pills and IUDs. However, two of the hospitals also provided surgical contraceptive services. The emergency contraception was only provided to victims of Sexual and gender based violence (SGBV). In contrast none of the facility could offer extra care to premature or low birth weight babies due to lack of skilled human resource.

There was an array of reasons provided for not providing a service that was indicated. Lack of human resources, supplies and equipment, training and management issues, all played a role in the services most frequently omitted even though patients needed them.

8.6. Providers' Knowledge and Competency for Maternal and Newborn Care

As part of EmONC needs assessment, the service providers were presented with several case scenarios with varying degrees of MNH conditions and complications to assess their knowledge, competency and management skills to deliver the services (e.g. Focused ANC/PNC, AMTSL, Partograph and NBR etc.).

With the help of model checklist, the facilities were interviewed through open-ended questions about their experience and knowledge of MNH care to assess their judgment and decision making skills. About two-thirds of the interviews were conducted with midwives who worked at the MCH and one-third with doctors working at the hospitals. The interview covered specified tasks in following service areas:

- Focused ANC/PNC
- Labour and delivery including use of Partograph
- Active management of third stage of labour (AMTSL)
- Manual removal of placenta, APH and PPH
- Immediate newborn care and newborn resuscitation
- Unsafe abortion and post abortion care
- Sexual and gender based violence (SGBV)
- Birth spacing counselling and services

Each area was further spelt out in to various questions and examples so as to assess the strengths and weaknesses of service providers.

The competency and management skills for each sub area were scored in terms of percentages based on the number of correct answers to those specific questions.

8.6.1. Knowledge and competency in pregnancy, labour and delivery care

Overall, the knowledge and competency levels were similar between physicians and midwives. However, midwives were a bit better knowledgeable in labour and delivery scenarios whereas doctors outscored midwives in PPH management and newborn resuscitation. Almost in all the facilities, providers were less knowledgeable (50%) about what to do in focussed ANC and AMTSL; newborn resuscitation; about which pregnant women were at risk that would require a special care plan and why. The importance of the use of Partograph was completely lacking. All the facilities (100%) including tertiary care hospitals did not practice partograph even many midwives and few doctors had received in-service training to use this important tool to monitor the progress of labour. However, almost all the facilities (90%) were well aware of the management of manual removal of placenta and PPH.

8.6.2. Knowledge of immediate newborn care and guided interview for newborn resuscitation

The service providers had fair knowledge of immediate newborn care (60%) but there was tremendous lack of knowledge for newborn resuscitation. Some of the midwives (20%) would still hold the baby with heels and a few (10%) would suck the new-born's secretions through their own mouth and spit it out. Knowledge was significantly deficient across cadres (6 of 9 facilities) in managing newborn infection and (5 of 9 facilities) or low birth weight and pre-term babies.

There was a deficit in levels of training across cadres, to provide care to sick newborn babies, particularly in neonatal resuscitation and neonatal sepsis. Overall, providers had reasonable knowledge (60%) about what to do if a baby begins to breathe after resuscitation and there is no respiratory difficulty. However, majority did not have any clue about how to diagnose birth asphyxia (60%) or what to do if a baby does not begin to breathe after resuscitation (75%). There was almost no difference in the knowledge levels of doctors and midwives on any aspect of newborn resuscitation.

8.6.3. Knowledge of unsafe abortion and gender based sexual violence

Service providers in general were fairly knowledgeable (60%) about abortion and immediate complications of an unsafe abortion. Doctors had relatively better knowledge than the midwives due to their experience from pre and in-service training, however, the difference noted was not quite remarkable.

With regards to the gender based sexual violence (SGBV) and the management of rape victims, knowledge was exceptionally limited across cadres, though cases of rape had been reported and witnessed by some providers (in two of MCH facilities). Providers when asked what they would do in case a woman presents herself as a rape victim, they could only volunteer about 40% of all possible answers. Majority would not do anything unless case is referred to them by the police. In contrast, two of the MCH volunteered to examine and provide the victim with necessary treatment without mentioning about referral to police and reporting the case

8.6.4. Providers' experience and training in service areas

The quality of care depends upon and may improve with experience, knowledge, judgment and decision making skills of health care providers. The needs assessment observed that on an average the providers' overall experience in health care and at current posting varied from 1-47 years and 1-12 years respectively. There were considerable differences across health facility types. However, the differences between doctors' and midwives' experience was relatively big -- about 10-15 years

The providers were asked if they had ever been trained during pre-service or in-service period, in comprehensive MNH related services. The training levels among doctors and midwives in all service areas were generally fair and similar indicating that the ability to provide MNH/EmONC services is not necessarily cadre dependant. About 60% of both doctors and midwives had received training in 12 out of 20 interventions listed in the interview. There were some differences due in part to their different roles in service provision. Like, midwives were more likely than doctors to be trained on in manual removal of placenta and birth spacing counselling, whereas doctors were trained in suturing cervical lacerations, internal bimanual uterine compression, and the techniques of MVA, D&C and D&E etc.

Training levels were quite low both for all service providers in applying forceps, perhaps preference of vacuum-assisted delivery in view of lesser trauma. Around 50% of doctors had been trained on vacuum-assisted delivery. Midwives generally did not receive any such training.

The assessment identified considerable gaps in training on newborn resuscitation across health facilities and cadres. Midwives were only trained during pre-service training and less likely to receive in-service training on this important aspect of BEmONC function.

8.7. Partograph Review

Partograph is a crucial tool for monitoring the progress of labour and provides a pictorial overview to facilitate decision making and early identification of maternal and foetal complications. Partograph records key measurements during labour i.e. blood pressure, temperature, pulse, uterine contractions, cervical dilatation, foetal heart rate, descent of head; and state of membranes and colour of liquor; at a regular and recommended intervals.

For assessment purpose and in view of time constraints it was decided to review two most recent cases of partograph at each facility level. The purpose of the case review was to assess the quality of partograph completion and labour management at the health facilities. Unfortunately, none of the MCH used the tool at all, and most of the service providers were completely unaware of it. The frequent explanation offered was supply, human resources, time constraints and training issues. Usage of tool was also lacking in all referral hospitals. One hospital claimed to use the partograph, but that could not be physically verified and upon further questioning it turned out that the tool is not practiced at all in spite of the fact that entire maternity staff was trained in partograph usage..

8.8. Caesarean Section Delivery Review

For reviewing caesarean section (C-section) delivery, the assessment examined hospital registers and patients' admission files and clinical records in the maternity ward. In view of time limitations, assessment selected two recent cases that were no longer in the hospital. The objective of the review was to understand the principal clinical indications for C-section and to evaluate some aspects of the quality of the procedure and record keeping.

Very few cases that gave birth by caesarean were referred from another health facility. Mostly women came in as an emergency from the community on self-referral basis. Review of basic data of two most recent Caesarean sections did not reveal much information about the delays caused, indication of C-section, care provided and whether the decision was made in time. Patients' complete history, the use of partograph and pre and post-operative notes were also missing. The age of mothers varied between 25 to 35 years.

In two of hospitals, the patient files were almost blank without her clinical examination notes. The only information available was patient's name, age and town of residence. In contrast, the record from one of hospital revealed that decision C- sections was timely made.

The most common indications noted were prolonged/obstructed labour and placenta previa/abruptio. Generally all C-sections were performed by gynaecologists/obstetricians. Injection Ketamine was commonly used as anaesthetic. One of the hospitals, at times also used spinal anaesthesia. The facilities for general anaesthesia were not available in any of the three hospitals due to lack of human resources, equipment and supplies.

The administration of prophylactic antibiotic was practiced in almost all the cases (verbal information). None of the reviewed caesarean section cases were managed with a partograph. During interview in maternity ward, one maternal death was reported during C-section; however, her file was not available for detail information. Though the outcome for all the caesarean deliveries reviewed were live births.

8.9. Maternal Death Review

Data generated from review of death cases and information extracted from various records and reports maintained in the facilities guide us on the quality of care provided and how the patient were managed by the health work force. The review also depicts a true picture of quality of reporting and record keeping at a facility.

The purpose of the maternal death review was to identify factors that were responsible causing maternal deaths. The assessment intended to review two cases of maternal deaths at each facility that took place during past 12 months. The review was based on the information extracted from registers and patient clinical records supplemented by inputs from the maternity staff.

No maternal deaths were reviewed at 5 out of 6 MCH facilities as there had not been any pregnancy related death in past one year. Only one facility based death was reported in one of the MCH that occurred due to absence of skilled attendance during night time when a TBA could not manage the PPH after delivering the mother.

In contrast, the number of maternal deaths at referral hospitals was quite high. There had been 17 maternal deaths during last 9 months (GMC 2, GGH 12, BRH 2 and IDP Galkayo 1). On an average approximately 2 mothers were dying each month cumulatively among these facilities due to pregnancy related causes, direct or indirect. The main causes were obstructed/prolonged labour and APH and PPH. These deaths were not investigated further at the facility or community level as death review/audit is an unknown phenomenon for the health facility staff.

8.9.1. Causes of maternal death

Generally most of maternal deaths occur due to direct obstetric causes such as APH/PPH, obstructed/prolonged labour, Eclampsia, retained placenta and puerperal sepsis. The indirect or secondary causes of maternal deaths are related to severe anaemia, malaria, Hepatitis or HIV/AIDS-related etc.

The maternal deaths (17 total), reported during the assessment were mostly due to direct pregnancy related causes i.e. PPH, obstructed/prolonged labour, Eclampsia, retained placenta and puerperal sepsis. Only one maternal death was reported due to indirect or secondary cause (anaemia). There was no information regarding primary or secondary cause of death in about 50% of the deaths that took place in two of the three hospitals assessed. In GMC, out of two deaths were reported, one died during surgical procedure of C-section while the record for the other death could not be found.

The cause of single maternal death reported in MCH IDP Galkayo was due to PPH - the delivery conducted by the TBA at MCH during night time who could not manage the bleeding.

8.9.2. The Delays factor

Detail information on the delays and the care provided could not be found due to deficient system of record keeping and reporting. Patients' complete history, partograph usage and file notes were not available. An array of delays contributed to most of the maternal deaths reviewed. The most common delays, affecting nearly all the maternal deaths that took place were 1st and 2nd delays causing late arrival at the referral hospital. This indicates the need for improved access to health care and behaviour change through raising community awareness for facility based delivery services. There may have been few delays attributed to lack of human resources or supplies. However, this factor was not confirmed due to non-availability of systematic the record.

8.9.3. Newborn outcomes

There were considerable numbers of still births among the hospitals assessed. A total of 167 still births (GMC 22, GGH 89 and BRG 56) and 26 neonatal deaths (GMC3, GGH 16 and BRG 7) were reported among all three hospitals during last nine months. The still birth on an average varied from 2-13 per month, the highest being in Garowe General Hospital. The reason of this outcome was unknown since hospital generally did not conduct ANC. However, the most likely causes for NND were aspiration pneumonia and neonatal sepsis that might translate the lack of management skills due to non-availability of paediatrician and neonatal unit at the hospital and lack of newborn resuscitation skills of the staff involved in maternity care.

9. Discussion and Recommendations

The last Somali “Multiple Indicator Cluster Survey” (MICS) UNICEF 2006 (findings of new survey not yet available) reaffirm high levels of need of women in Somalia (high fertility and high maternal mortality - MMR 1,400/100,000 live births) and low levels of access to quality services. Due to this high maternal mortality ratio, all Zones of Somalia face tremendous challenges. The majority of deaths are due to haemorrhage and obstructed labour, followed by preeclampsia/ eclampsia and sepsis, all of which are preventable or treatable ones. The perinatal mortality rate of 80 per 1,000 live births (WHO 2007) represents quite a high percentage of deaths under one year of age. Globally, the majority of newborn deaths are linked to low birth weight, birth asphyxia, and sepsis which are also conditions that can be prevented or treated using evidence-based approaches that are feasible in a low resource setting such as Somalia.

Since the launch of the Safe Motherhood Initiative in 1987 at global level, the international community reached a consensus on priority interventions that would most likely reduce maternal and neonatal mortality ratios. One of these key interventions is the availability of accessible and affordable EmONC services that are fully integrated into the national health system. The EmONC Needs assessment employs process indicators to monitor delivery of critical MNH interventions that may help reduce mortality and morbidity. The information generated through this approach provides guidance to policy planners and senior level health managers of develop concrete policies, strategies, and programs. The need assessment probes deeply in to the existing system of service delivery gathering the answers whether:

- enough EmONC facilities are available and properly distributed within the population;
- the facilities being utilized optimally;
- enough critical MNH services available;
- is the quality of care is maintained or adequate.

While making an effort to answer many aspects of above questions, the current EmONC needs assessment faced many other supplementary questions that were difficult to answer due to study design. There were some limitations due to security restrictions on the movement in the field and the time constraints posed another important challenge for the assessment. The overall time frame for the project could not be extended. This resulted in intensified field operations.

It was an additional challenge to assess true EmONC capability in facilities with low clinical volume or with limited physical infrastructure. The conclusions and recommendations are therefore, drawn in a broader term and generalized manner to address the health system at large and generate few questions for possible future investigation.

As indicated in the beginning, this assessment by definition examined only facility-based services; therefore provides a limited perspective of MNH care as it only includes those patients who could reach the health facilities, while many others receiving care at home may die at home or on the way. It also does not include home deliveries generally conducted by TBAs and some domiciliary midwifery services since most Somali women deliver at home with their families in attendance.

The desired outcome of EmONC services is a continuum of quality care from home to hospital with full range of efficient and effective comprehensive MNH care available at all health care levels that are linked with efficient communication and transport systems.

The facility-specific recommendations has been made separately in the attached Excel work sheets (3 in number) along with the findings of individual facility each for Garowe, Bosaso and Galkayo. The recommendations posed here are meant for higher authorities aiming at policy and implementation levels to provide to develop task and target oriented policies and strategies and quality programmes.

9.1 Recommendations for Policy and Program Implementation Levels

9.1.1 Human Resources

- Ensure availability of adequate qualified and trained staff at MCH and hospitals to provide all comprehensive BEmONC and CEmONC services respectively.
 - Midwives, female nurses and nurse-midwives at all MCH and hospital levels
 - Qualified/trained lab technicians and Pharmacists
 - At hospital levels: qualified paediatrician, anaesthetist and OT technicians
- Revise salary structure and Performance based salary top-up to enhance the morale and motivation of the staff.
- Implementation of existing policies on staffing and hours need to be ensured through targeted and objective monitoring by the MOH Reproductive Health Department and donor agencies.
- Explore possibility of performance based incentives to motivate healthcare providers including physicians, nurses, and midwives to work in rural areas.
- Introduce and/or strengthen community midwifery program and explore possibilities to replicate similar programme for other health cadres, such as physicians and nurses, to provide services in rural areas.

9.1.2. Drugs supply and management

- Strengthen the chain/mechanism to ensure availability of essential EmONC medications, without appropriate equipment and supplies.
- Training of pharmacist to strengthen the ability of drug supply, management and monitoring the drug usage.
- National drug formulary or Essential drug list to include Oxytocics for all BEmONC and CEmONC facilities and ensure that Oxytocin for SBAs is available as the first line therapy for the prevention and treatment of PPH (WHO recommendation).
- Ensure and strengthen Misoprostol for SBAs. Misoprostol-an affordable and easy to store drug.
- Magnesium sulphate for treatment of pre-eclampsia and eclampsia–WHO recommendation.

- All the facilities including MCH to be supplied with injectable antibiotics, anticonvulsants and uterotonics so as to perform EmONC signal functions.
- Blood storage facility for immediate transfusion – special refrigerators could be used while permanent facilities are established.

9.1.3. Service delivery

- Ensure use of partograph, MVA (WHO recommendation), and other essential EmONC interventions - through additional training, supervision, and monitoring.
- There is huge gap of neonatal resuscitation at all levels. This gap should be filled-in on priority basis. Short and concise in-house/in-service training courses should be organized for a wide range of service providers.
- Birth spacing/family planning counselling and services are also at a very low level, both in MCH as well as hospitals. FP counselling, contraceptive technology and the dispensation of various FP methods should be included along with advocacy for partograph in the recommended behaviour change initiative.
- Improve availability of modern birth spacing (BS) methods including postpartum and post-abortion counselling and services through integrated birth spacing services at all levels of the health system. Services should be available at all times and all health staff, including CHWs, should be trained.

9.1.4. Strengthening delivery and quality of care

- Strengthen referral system (communication and transport) for timely access to EmONC services. Community based organizations (CBOs) could be involved on performance based initiatives and cost reimbursement basis.
- Though Focused ANC (birth preparedness and complication readiness) has been incorporated in the National Reproductive Health Strategy and Action Plan (2010-2015) but it is not been implemented. Ensure its implementation at facility levels and include additional EmONC services in the national monitoring checklist.
- Establish adequate and standard Blood Bank facilities for timely blood transfusion services at CEmONC facilities.
- The gap in blood transfusion services for mothers and newborns to be filled in by identifying other cadres with relevant background, aptitude and potential to do the job, and training them systematically in blood transfusion services.
- Ensure availability of evidence based guidance material and technical products including job aids, National Guidelines and Quality Assurance Tools at facility levels for quality implementation of EmONC services.

9.1.5. Exemption of service fee

- User fees and charges for services, drugs, and supplies may deter poor women from seeking facility based services for themselves and their newborn babies. This needs to be regulated and/or revised to limit the impact of hidden fees for essential supplies and medications on community access to EmONC services.
- Fees exemption policies should be reviewed based on evaluating the paying capacity in order to balance equity with efficiency.
- Fee structure for various services should be displaced at accessible and visible points.

9.1.6. Information and reporting/recording system

- Strengthen facility reporting and recording system on all EmONC related services including maternal and newborn outcomes.
- Strengthen the record keeping regarding referrals made and development of a feedback mechanism.

- Ensure that each maternal and neonatal death is a notifiable event that would require systematic death audit or review by the responsible authorities.
- All health facilities particularly the hospitals must conduct maternal and neonatal death audits as a strategy to improve quality of care, identifying barriers and shortcomings in service delivery with concrete solutions to deliver high-quality care, reinforce facility and individual accountability.
- The MOH and NGOs should use the data from this assessment to identify and address the needs of facilities that do not provide all EmONC and MNH services.

9.1.7. Capacity Building and Targeted trainings

- Midwives, medical doctors, and gynaecologists/obstetrician form the backbone of EmONC services. The capacity building and skill development of health workforce is essential to offer continuum of care and to improve the coverage of the services.
- Develop evidence-based core EmONC training programmes (pre-service and in-service) to build competencies of all cadres providing MNH care at BEmONC and CEmONC facilities. The training in EmONC functions should be considered as a backup strategy to ensure rapid expansion of services.
- A competency-based approach needs to be applied for training of gynaecologists/obstetrician for standardized delivery of CEmONC services.
- Partograph an important tool to monitor the labour progress was missing in all the facilities. Staff involved in the MNH service delivery should be trained on proper use of partograph. Training should focus on behaviour change of staff involved rather than technical training, as even gynaecologists/obstetrician have shown very low use of the tool.
- For fully functioning BEmONC and so much so for 24/7 it is essential that midwives and nurse-midwives are trained in assisted vaginal deliveries i.e. vacuum extraction and forceps delivery as well as D&E and D&C services.
- Essential areas to be covered during capacity building are:
 - Focused ANC/PNC
 - Active Management of Third stage of Labour (AMTSL),
 - Use of Partograph, Infection prevention,
 - Management of postpartum care and obstetric complications specially APH and PPH
 - Immediate newborn care and Newborn resuscitation including APGAR score
 - SGBV and Post-abortion care
 - Birth spacing counselling and dispensation of contraceptive methods
 - Use of equipment

9.1.8. Monitoring and supervision

- Objective monitoring and supervision with constructive feedback should be a built in tool for all the activities carried out at EmONC facilities.
- To assess the impact of trainings provided, it is essential to follow-up all these trainings with objective evaluation and constructive monitoring to improve providers' capacity to offer quality EmONC services.
- A comprehensive post training follow-up plan for EmONC should be established at the national and regional levels.
- Close objective monitoring and supportive supervision for the quality of care and MNH services,
- MOH to develop and implement a comprehensive national programme to ensure partograph management reaches full coverage.
- MOH may consider conducting a formative/Operation research to find out the reasons for not practicing partograph in order to provide guidance for subsequent interventions.
- An Operation research to study health seeking behaviour of the community and reasons for under- or non-utilization of health facilities.

9.1.9. Improved utilization and coverage of HF

9.1.9.1. Physical infrastructure

- The impact of infrastructure on the ability of staff to provide quality health services is often overlooked and underestimated. This includes standards regarding mandatory minimum number of maternity and newborn beds, as well as delivery couches and neonatal resuscitation, availability of running water and access to a continuous and reliable supply of electricity.
- The implementers and policy planners are jointly responsible to make these facilities and standards available at all health facilities.

9.1.9.2. Demand Creation and meeting the demand

- Develop and strengthen the social mobilization programme through village based workers for community and other rural facilities to provide community outreach services. This should prioritize identification of pregnant women and advocate for facility based delivery services.
- Initiate an incentivized community-based village health workers (VHW) programme to mobilize the community through education, information and communication skills to raise awareness for seeking skilled birth attendance.
- VHW would also play a role in developing family preparedness plans, emergency readiness, and identification of emergency transport for all homebirths to be diverted to HF.
- Change in health seeking behaviour: use opportunity of visiting mothers with their kids for EPI or other services, advising her for regular ANC and facility based delivery care,
- Utilize potential of TBAs as incentivized health promoter and birth companion to improve facility based deliveries
- Ensure availability of evidence based guidance material and technical products including job aids, national guidelines and quality assurance tools at facility levels for quality implementation of EmONC services

9.1.9.3. Linkages, coordination and integration

- With Community Health Committees
- Community, influential people and community based organizations,
- TBAs, community health workers and village workers,
- Other health related projects and programmes such as STIs, HIV and AIDs
- Linkages and integration with other cross-cutting programmes such as Gender, education etc.

10. Assessment Limitations and Constraints

Security restrictions on the movement in the field was a major concern for smooth and timely completion of the survey and at many occasion posed the most important limitation to carry out smooth assessment.

Time constraints posed another important challenge for the assessment. The implementation of AMDD tool which is quite an extensive instrument, required more time to complete all the modules. The working hours of the facilities causing limitation on staff availability and accessibility to various units of the hospitals, at times resulted in intensified field operations.

The overall time frame for the project could not be extended due to limitation of project time line that demanded complete the tasks within certain stipulated period. However, the assessment was able to cover all the selected facilities as endorsed in the document.

Another limitation to the assessment was the unavailability of reliable record and data in the facilities due to lack of systematic way of reporting and record keeping. The assessment referred to the data from the HMIS Department, MOH, Puntland, and elected to use this reference as being commonly used.

ANNEXES

Detailed Findings and Recommendations for Individual Health Facilities

ANNEX -I

Findings of EmONC Needs Assessment in EC Selected MCH Centres (BEmONC facilities) and Referral level Hospitals (CEmONC facilities) in Garowe, Puntland			
EmONC Indicators	Gambool MCH Garowe	Waaberi MCH Garowe	Garowe General Hospital, Garowe
Facility Infrastructure: Facility Infrastructure and Capacity Transportation and Communication Payment for Services (User Fees)	Urban MOH facility managed by WVI. Catchment population: 20,000, Catchment villages: 4 Quite a busy centre with lots of patients. Total 12 rooms and 2 Simple pit latrines Delivery room with two tables, ANC room with a couch and a postnatal room with two beds Open waiting area, a laboratory and a pharmacy No running water and no hand washing facilities, use main tap outside for hand washing Electricity available 24 hrs. No duty room for staff to stay to provide 24 hours BEmONC service. No facility based transport arrangement for referral cases. Costs \$8-10 Nearest referral hospital (Garowe General Hospital) 2 km away and takes 45 minutes to get there. No fee for ANC/PNC and EPI. Informal services charges for delivery services and sick patients. \$20 for MCH based delivery, \$5-15 for home delivery based on patient's paying capacity, and \$1 for all other sick cases. All charges collected are distributed among the staff of MCH as salaries are quite low.	Urban MOH facility managed by WVI. Catchment population catchment villages 5 Claims to provide 24/7 obstetric care ANC room with an examination couch Labour and delivery room combined with 2 delivery tables and direct toilet access. Postnatal room with 3 beds. Laboratory and a pharmacy No waiting area for family members or visitors. 3 pit latrines Running water and electric supply available. No duty room for staff to stay to provide 24 hours BEmONC service. No transport facilities for referral cases. Hospital is 5 km away, 2 hrs to get there. Non-formal payment system - patients pay \$15 for delivery services, other services are free.	It's a regional level hospital but only 3 rooms in entire hospital are allocated for Gynea/Obstetrics each having 4 beds Catchment population: 130,000 (extended catchment) Out of total 72 beds, just 12 beds are available for all Gynea/Obstetrics that includes labour, postnatal, post-operative Labour and delivery services together in one room (privacy compromised). 2 delivery tables and one D/C tables in the delivery room No blood bank or neonatal unit Hospital does not provide ANC services (done at MCH level) and no focused ANC FP, PMTCT and cervical screening (pap smear) services provided Electricity and running water available 24 hrs. Duty room for staff on night duty is available Maternal death review or audit not carried out No facility based transport arrangement for referral cases User fees applicable: \$ 10-17 for normal and assisted deliveries, \$200 for C-Section, Manual aspiration \$ 33, fee for other services varies from \$ 1-3.

EmONC Indicators	Gambool MCH Garowe	Waaberi MCH Garowe	Garowe General Hospital, Garowe
Human Resources: Overall Staffing 24-Hour Availability Performance of Signal Functions/ Essential Services	Good staff strength in position, 6 M/W, 2 Nurses, 4 Auxiliaries, 1 Lab. technician, she is a qualified M/W. Few TBAs are also linked. Opening hours: 8:00 - 12:30. No evening or night services. However, M/W and Nurse claim to be on call for 24 hrs maternity care <div style="border: 1px solid blue; padding: 2px; color: red;"> WVI hired 2 M/W, 2 Aux. 2 Nurses, 1 Lab tech. and 1 Pharmacist. They are/will be part of total strength </div>	Reasonable technical staff 3 midwives, 2 Nurses, 1 Lab. technician and 2 Assistant midwives. Centre works only in morning shift 8:00 - 12:30. However at least one M/W and one other staff are on call for evening and night cases.	1 Gynaecologist (not qualified but with extensive experience, 1 GP, 4 M/W, 2 Nurses, 1 Nurse anaesthetist, 3 Auxiliaries, Paediatrician (not qualified but with on-job training), 4 Lab technicians (2 qualified) Trained Anaesthetist but not a qualified one, No Neonatologist Regional level hospital without NICU, blood bank, Lab. tech. 24 hours CEmONC service provided
Services Delivery	Routine ANC/PNC services but No focussed ANC Delivery services Referral of High Risk Pregnancies Screening for pre-eclampsia Management and treatment of STIs Family Planning counselling, only condoms and natural FP Counselling prevention of blood borne spread of HIVAIDS NO PMTCT Basic Lab services for Hb, MP and Urine albumin/sugar. No blood grouping and cross-match.	No focussed ANC/PNC only routine care Delivery services Referral of High Risk Pregnancies Screening for pre-eclampsia Treatment of STIs Family Planning counselling, only condoms and natural FP Counselling on prevention of HIVAIDS PMTCT and VCT. No ARVs waiting for the supplies. No FP except condoms and breast feeding counselling	Normal and assisted vaginal deliveries and C-Section Routine postnatal, post-operative care Manual aspiration and D&C, D&E Syndromic management and treatment of STI Family Planning Counselling methods IUD, Pills and condoms PMTCT and VCT, Counselling on prevention of HIVAIDS PEP services Health Education and promotional activities
Availability of Drugs, Supplies and Equipment: Pharmacy Equipment and Supplies Laboratory (Equipment and Supplies) Infection Prevention Guidelines and Protocols	Reasonably supplied and maintained. No refrigerator for the drug storage. Oxytocin kept at room temp and is being used that way. FP only condoms available No magnesium sulphate supplied. Only Hb and MP tests are done in the lab. No Ambu bag and mask newborn resuscitation No guidelines on any clinical or technical subject.	Head Nurse manages the pharmacy but there is no inventory or record keeping for stock-in and stock-out. Reasonably good supplies of drugs and instruments. However, no supplies for assisted vaginal deliveries, MVA or newborn resuscitation. No lab facilities even though there is one designated lab technician in position. Magnesium is not supplied for Eclampsia and Pre-Eclampsia cases, Phenobarbiton tab is used.	Over all better equipped with drugs, medicines, supplies and OT equipment. All sub units (pharmacy, lab and OT well maintained with up to date record. Sufficient instruments and equipment to carry out all CEmONC services Magnesium Sulphate seldom available, Diazepam is being used PEP Kit- medicine expired Two ultrasound machines (one is currently non-functional)

		<p>ARV supplies waited, only counselling and testing services are provided. No FP methods available No Ambu bag and mask newborn resuscitation. Infection prevention measures are lacking in delivery and PN ward. Sterilizer not available - go to nearby hospital to sterilize the instruments. Placenta is given to family for disposal/burial purpose. No guidelines on any clinical or technical subject.</p>	<p>Incubators in Maternity wards non-functioning however, Radiant warmer and Phototherapy unit with Newborn resuscitation table available within maternity. Separate independent VCT unit fully supplied with ARVs Though OT is quite well equipped, at times due to heavy surgical load more instruments and supplies are needed since the OT caters for all surgical cases of the hospital. Laboratory is very well equipped, organized and maintained by qualified Lab. technicians, Lab refrigerators are used for blood transfusion services as there is no blood bank at present Refrigerator (cold chain) available for drugs. No technical or clinical guidelines except ARI and STI management (WHO) for technical staff or managers. No proper infection control and health care waste management system. Pit hole is used to burn/bury the lab wastes whereas family takes the placenta for burial.</p>
<p>Facility Data for Indicators: Deliveries number and types Post abortion Care and Family Planning Obstetric complications and referrals Maternal deaths due to obstetric causes Newborn Outcomes (for Facility Births) Quality of Registry Data</p>	<p>There is only one register to record all activities. However, all columns are completely filled and up to date. Monthly report is maintained. Home deliveries mostly done by the TBAs are also entered in the register. Few TBAs are linked with this facility for reporting their cases and get some assistance. In August 65 deliveries including 40 home based conducted by M/W and TBAs. Staff generally prefers home deliveries due to financial gains, mothers save their time, transport cost and some fee for the services.</p>	<p>Record keeping and reporting of services is very poor. No information could be found about the services rendered in this facility. One register for all the services provided for indoor and outdoor patients, Incomplete and not up to date information.</p>	<p>Facility is quite disorganised in maintaining records for Gynea/Obst, newborn or mortality cases. Though reasonably satisfactory information on delivery types, ward and OT cases. Monthly performance report is prepared but no copies retained in the maternity unit record. In August 44 normal deliveries, 4 C-Section, 1 Laparotomy and 1 assisted vaginal delivery There were 24 complicated cases including 10 prolonged labour; 4 PPH, 3 APH. On an average every month one woman died of pregnancy complication mostly PPH, obstructed labour, Eclampsia or puerperal sepsis. Number of still births is quite high as well, 13</p>

			in August, 11 in July. Reasons are unknown as there is no proper history, use partograph or follow up. The service providers are not interested looking in to the details to find out the cause and possible solution of this high incidence of still births.
BEmONC Signal Functions and other Essential Services: 1. Parenteral antibiotics 2. Administer uterotronics drugs 3. Parenteral Anticonvulsants 4. Manual Removal of Placenta 5. Removal of Retained Products 6. Assisted Vaginal Delivery 7. Newborn Resuscitation 8. Other MN Health-related services	Only two out of 7 BEmONC signal functions (2 and 4) are practiced (Oxytocin and manual removal of placenta) at this facility. Parenteral antibiotics and anticonvulsants not supplied. No assisted vaginal deliveries - supply and training and space issues Oral Ergometrine and Phenobarbiton generally are used. Newborn resuscitation completely lacking. AMTSL and partograph not practiced. ? supply and training issues. No ARVs no PMTCT	Only 3 out of 7 BEmONC signal functions (1, 2 and 4) are performed in this facility. The others could not No anticonvulsant given parenterally because of supply and management issue Able to do manual removal of retained placenta but not the product of conception - training, management and supply issues No assisted vaginal deliveries - training, management and equipment supply issues No newborn resuscitation facilities available - training, management and equipment supply issue AMTSL practice is lacking about 75% No skills to perform breech delivery ARV (VCT) and PMTCT services available FP services completely absent - methods not available, training and supply issues.	All CEmONC signal functions are performed. C-section is challenging as Ketamine is used as an anaesthetic and on-spot transfusion from family relatives is administered due to lack of General anaesthesia and blood bank services respectively. Misoprostol is generally used for PPH prevention.
Partograph Review	Partograph not used. Training, supply and mainly motivation issue.	Partograph usage is not mandatory, though M/W is trained but does not practice	Partograph though is used but not in all cases. The entry of all dimensions are not recorded on the partograph, it is incompletely filled. Just 2 or 3 entries in total No head descent, colour of amniotic fluid, progress of cervical dilatation, BP, pulse or temperature noted.
Provider Knowledge and Competency for Maternal and Newborn Care Guided Interview for Newborn Resuscitation	The facility in charge is a very experienced woman, 47 yrs. of service and is quiet knowledgeable. However, the knowledge is not put in to practice and is quite limited in many BEmONC areas specially focussed ANC and AMTSL. NBR and use of Partograph are completely ignored.	Several scenarios with varying degrees of maternal and newborn health conditions and complications were presented orally to assess the management skills and delivery of services (e.g. Focused ANC/PNC, AMTSL, Partograph and NBR etc.). Knowledge is available about 60% but it is not applied at right time for the right patients. Efforts are required to build their capacity and	Over all, staffs have good knowledge and skills for MNH care. Reasonable understanding of high risk pregnancies, labour management and immediate newborn care. .Limited knowledge of focussed ANC and AMTSL. Skills to fill-in Partograph is also limited

	This was judged through putting up various simulating case scenarios and clinical examples.	conduct objective monitoring and supervision.	
Review of Caesarean Section Delivery	Not Applicable	Not Applicable	Review of Caesarean Section Delivery Review of basic data of two most recent Caesarean sections revealed timely decision making skills. Files do not reflect the time of the decision and the time procedure started. Pre and post-operative care is OK but could further be improved. Hygiene and infection prevention in post op cases is a bit neglected.
Maternal Death/Audit Review	No facility based maternal death since past one year.	No maternal death during last one year. However, maternal death review/audit is an unknown phenomenon for the health facility staff.	No system to record, review or audit of maternal death. Though every month one woman died due to direct obstetric causes. Information obtained from the main register of the maternity ward and oral interview with staff and their re-call information.
Cost recovery and Cost Sharing	Part of the service fee charged is also utilized to meet the expenses on items for delivery room; hand washing and water supply purchase some. Rest is shared among the staff to supplement their meagre salaries.	Services charges for facility based deliveries are used to pay for small items purchased for the MCH	The fee charged for various clinical and surgical services is used towards running cost of the hospital.
Recommendations:	1). Utilize TBA's potential to establish linkages between community and the facility for improved and enhanced services utilization and facility based deliveries.	Capacity building and skill development in all aspects of BEmONC management, Supply of essential equipment specially for NBR, assisted vaginal deliveries, D/E services Lab. supplies at least for basic testing of Hb, Urine albumin and sugar, blood grouping and cross match etc. More Staff recruitment for 24/7 BEmONC Upgrade salary structure (M/W gets \$30/month where as in Somaliland it is four times higher) Performance based incentives for TBA, and staff producing good results.	1. Infrastructure needs: Eclampsia room, Post-Op recovery room, 2. Establishment of blood bank is more than an urgent need for Garowe hospital as there have been 3 deaths in last 6 months due to PPH 3. Supply of incubators, Oxygen machine and general anaesthesia; and training for the users 4. Skill development and capacity building of facility staff in focused ANC, AMTSL, Partograph usage, infection prevention etc. 5. Training for community mobilization and awareness creation to enhance facility utilization, early referrals 6. Availability of evidence based technical guidance material and tools for clinical staff

			and managers. 7. Maintain proper and up to date facility data for indicators (registers, reports, books and death review etc.). 8. Proper system for safe disposal of health care wastes and products.
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Findings of EmONC Needs Assessment in EC Selected MCH Centres (BEmONC facilities) and Referral level Hospitals (CEmONC facilities) in Bosaso, Puntland			
EmONC Indicators	Hagi Abdulhi MCH Bosaso	Horseed MCH Bosaso	Bosaso Regional Hospital, Bosaso
Facility Infrastructure: Facility Infrastructure and Capacity Transportation and Communication Payment for Services (User Fees)	Urban facility SRCS will take over the management once upgraded to BEmONC 24/7 Seldom delivery services Total 5 rooms, No Separate/designated delivery or labour room Delivery and OPD in one room with one delivery table No post natal room and no beds, mother goes back home after 3-hrs One pharmacy, One room for under 5 clinic One empty room without any thing No laboratory, No designated family waiting area 1 toilet Turkish type No electricity No running water - tanker brings water twice a month costing \$20. Staff contributes from their own salary to meet this cost. (M/W salary \$30 per month). No facility based transport arrangement for referral cases. The MCH and host community contribute towards transport cost for poor IDPs which is about 2.5 km away. Informal service charges, \$ 10-18 for delivery and 1 \$ for all sick cases. No charges for ANC/PNC and EPI. The fees thus collected are distributed among the staff to meet their own expenses and to purchase cleaning items need for the	Urban, new MOH facility, small structure of 3 rooms, started in Jan.2011 as Health Post, now to be developed as BEmONC facility. Major construction (at least 3 more rooms) is required. Separate waiting area for family and visitors. Two toilets Currently no delivery services due to physical infrastructure and HR constraints. No electricity, no running water supply, tanker supplies water twice a month costing \$24. Staff contributes from their own salary to meet this cost (M/W salary \$30 per month). All services are currently free of charges. No facility based transport facilities for referral cases. Hospital is 3km away and it takes 45 minutes to get there.	Largest government hospital of Puntland State with total strength of 120 beds but only 7 beds are allocated for maternity unit. Catchment population: 191,000 (Bosaso district Population) Electricity and running water available 24 hrs. Generator is also available. No Labour room, no Eclampsia room and Neonatal Unit. One Eclampsia patient was lying in the open veranda at the time of assessment. Delivery room with 3 tables and a small postnatal ward with only 7 beds. There is no water or hand washing facility within delivery and postnatal rooms. 2 toilets in entire maternity unit No blood bank currently exists, new building being constructed FP, PMTCT and cervical screening (pap smear) services provided Duty room for staff on night duty is available Maternal death review or audit not carried out No facility based transport arrangement for referral cases Charges for services: Free normal and assisted deliveries and MVA, \$200 for C-Section, Ultrasound \$10, fee for other services varies from \$ 1-5.

	facility.		
Human Resources: Overall Staffing 24-Hour Availability Performance of Signal Functions/ Essential Services	2M/W, 2 male nurses, and volunteers 2 lab technician. and 2 volunteer auxiliaries Centre works only in morning shift 8:00 - 12:30. Staff motivation is lacking due to service and salary structure.	2 M/W, 4 Nurses, 2 Auxiliaries, No Lab. tech. Reasonable staff for a HP but more staff would be required for 24/7 BEmONC facility.	The only Tertiary Care hospital in whole Puntland but is without qualified Neonatologist, Anaesthetist. Huge gap of qualified, trained and motivated human resources. 2 Gynaecologist, 1 Post-graduate trainee Registrar, 1 Paediatrician, 2 General Surgeons, 1 trained Anaesthetist (non-qualified), 5 GPs, 4 M/W, 4 Nurses, 2 OT technicians (trained), 3 Nurse Anaesthesia technicians (trained), 3 Auxiliaries, 5 Lab technicians, 24 hours CEmONC service provided
Services Delivery	Occasional Delivery services Routine ANC/PNC services but No focussed ANC Referral of High Risk Pregnancies Some treatment of STIs Birth Spacing counselling, breast feeding and condoms only Counselling on HIVAIDS and VCT is carried out No PMTCT, no PF except condoms.	Routine ANC/PNC services with some aspects of focussed ANC No delivery services at all Referral of High Risk Pregnancies Management and treatment of STIs Family Planning counselling, male and female condoms. Counselling prevention of spread of HIVAIDS PMTCT and VCT No lab services.	Normal and assisted vaginal deliveries and C-Section Routine ANC/PNC Manual vacuum aspiration and D&C, D&E Syndromic management and treatment of STI Family Planning Counselling methods IUD, Pills and condoms PMTCT and VCT, Counselling on prevention of HIVAIDS Vasectomy services (male sterilisation) services are available. PEP services.
Availability of Drugs, Supplies and Equipment: Pharmacy Equipment and Supplies Laboratory (Equipment and Supplies) Infection Prevention Guidelines and Protocols	Enough supply of drugs but no injectable anticonvulsants, no ARVs No refrigerator for drugs FP only condoms available No magnesium sulphate, oxytocin supplied. No technical guidelines MNH/RH, however, WHO IMCI guidelines, Life Saving Skill guideline CHW manual by Amreef is available.	Small pharmacy without an inventory or record keeping. No mechanism to discard expired medicine. Refrigerator (cold chain) available for drugs. Limited supply of medicine. No antihypertensive medicine, no ARVs, no antibiotics except Penicillin Magnesium sulphate and oxytocin are not supplied since no deliveries facilities.	No set pattern of supplies and order for medicines and drugs. Mostly purchased by hospital budget, some supplied by UNICEF, UNFPA and WHO. No inventory or up to date record maintained. Magnesium Sulphate not supplied, Diazepam is used. No newborn resuscitation equipment

		<p>FP male and female condoms available. Only the facility seen so far to dispense Female condoms. More request from nearby villages. No technical guidelines to consult for reference purpose.</p> <p>No newborn resuscitation services, no laboratory facilities.</p>	<p>(Ambu bag and mask) available.</p> <p>Vacuum extraction deliveries are not conducted - equipment not available</p> <p>Forceps delivery also not practiced - fear of contracting STIs.</p> <p>Infection prevention measures lacking, delivery room, congested and unhygienic.</p> <p>No incubators at all. No special care for pre-term or low birth weight babies.</p> <p>Kangaroo Mother Care (KMC) is practiced to keep baby warm</p> <p>OT and Autoclave rooms are very well equipped and supplied. 4 OT rooms.</p> <p>Big heavy duty new steam steriliser not in use because of language barrier - instructions in German.</p> <p>Two high tech sophisticated computerised OT X-ray machines, donated by Australian Govt. 3 years ago, still lying in the OT corridors covered with sheets. Could not use these as trained human resource is not available to operate the machines. No serious efforts made so far to contact donors.</p> <p>Laboratory is very well equipped, organized and maintained by qualified Lab. Technicians,</p> <p>Lab has many rooms for microbiology, biochemistry, serology and sample collection, well equipped with qualified technicians.</p> <p>Lab refrigerators are used currently to keep blood for on the spot transfusion services as blood bank building is under construction.</p> <p>No technical or clinical guidelines except ARI and STI management (WHO) for technical staff or managers.</p>
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			Incinerator available for hospital waste disposal.
Facility Data for Indicators: Deliveries number and types Post abortion Care and Family Planning Obstetric complications and referrals Maternal deaths due to obstetric causes Newborn Outcomes (for Facility Births) Quality of Registry Data	There is only one register to record all activities. However, all columns are completely filled and up to date. Home deliveries mostly done by the TBAs are also entered in the registered. These TBAs are affiliated with HC for reporting their services. Very few facility based deliveries. The baby's weight not recorded or checked even though the weighing scale is available.	Just one register to record all activities for OPD cases. Most of the home deliveries conducted by TBAs about 18 per month. M/W also does home deliveries and help TBAs in safer deliveries. Some TBAs are attached with the facility for reporting and assisting purpose	Poor data recording and management. Registers for Gynea/obstetrics are not properly maintained, though delivery, discharge and OT registers are maintained. 39 maternal deaths from Jan-July and 14 still births out of 219 deliveries during last 3 month. No much information available on the causes of deaths.

EmONC Indicators	Hagi Abdulhi MCH Bosaso	Horseed MCH Bosaso	Bosaso Regional Hospital, Bosaso
BEmONC Signal Functions and other Essential Services: 1. Parenteral antibiotics 2. Administer uterotonic drugs 3. Parenteral Anticonvulsants 4. Manual Removal of Placenta 5. Removal of Retained Products 6. Assisted Vaginal Delivery 7. Newborn Resuscitation 8. Other MN Health-related services	None of BEmONC signal functions are practiced at this facility. Only oral Ergometrine and Phenobarbiton are given. Newborn resuscitation completely lacking. AMTSL and partograph not practiced. The main issues are HR, training, physical facility and supplies of medicines and equipment.	None of BEmONC signal functions are practiced in the MCH since no facilities are currently available for delivery and newborn care at this Centre due to space limitation.	All s CEmONC signal functions are performed except neonatal resuscitation with Ambu bag and mask. C-section is also challenging here as spinal anaesthesia and Ketamine are used. Due to limitation of blood bank, on-spot transfusion of blood donated by family members is carried out. Misoprostol is generally used for PPH prevention.

Partograph Review	Partograph not used. Training, supply and mainly motivation issue.	Partograph not used due to facility constraints.	Partograph is not used, not considered as mandatory. Supply and training issue.
Provider Knowledge and Competency for Maternal and Newborn Care Guided Interview for Newborn Resuscitation	Knowledge of facility in charge is quite satisfactory in many BEmONC areas except focussed ANC, NBR and AMTSL are ignored.	Both M/W have very good knowledge of BEmONC services but currently unable to practice due to non-availability of physical facilities. However there is still room for improved knowledge for better understanding of the concepts and importance of focussed ANC, AMTSL immediate newborn care and usage of Partograph.	Good knowledge and decision making skills. Some important aspects of MNH care are lacking and not given due attention e.g. focused ANC, AMTSL, NBR etc. Partograph completely ignored.
Review of Caesarean Section Delivery	Not Applicable	Not Applicable	Patient record is disorganized P/V findings seldom noted. Patient history is incomplete. Post-op notes OK
Maternal Death/Audit Review	No facility based maternal death since past one year	There was no facility based maternal death during last one year.	Maternal death audit is not understood by the concerned staff. No system to record, review the details of maternal death cases. 39 maternal deaths registered from Jan-July 2011, but there is no detail information about the causes of these deaths.
Cost recovery and Cost Sharing	The fees thus collected is distributed among the staff to meet their own expenses	No service fee charged. The cost is met by the local organizations contribution.	The funds generated from user fee are used to meet the recurring expenditure.

<p>Recommendations:</p>	<p>The Potential of TBAs could properly and systematically be linked with HC on an incentive basis to promote and enhance facility based deliveries To develop this MCH as 24/7 BEmONC, major interventions are required e.g. renovation of existing building and rooms; extension of more rooms for delivery and postnatal care and lab services. Supply of equipment for assisted vaginal deliveries and NBR; and injectable antibiotics and anticonvulsants. HR development and capacity building is also very crucial.</p>	<ol style="list-style-type: none"> 1). To make it as 24/7 BEmONC facility major interventions are needed in terms of construction of more rooms, provision of water and electric supply, HR development, skills and capacity building and performance based incentives to staff to enhance facility utilization by the community. 2). The potential of TBAs could be utilized to raise community awareness for improved facility based health care. 3). TBAs to be systematically linked with HC on an incentive basis to promote and enhance facility based deliveries by bringing in their clients. 4). This newly build MCH has large open area that could be used for an extension to build a separate maternity unit 	<ol style="list-style-type: none"> 1. Major interventions are needed: More beds in Postnatal ward, neat and clean delivery room 2. Running water and hand washing facility inside delivery room. 3. Eclampsia room 4. Drastic measures for infection prevention. 5. Neonatology unit with incubators 6. Staff capacity building in focused ANC, AMTSL, Partograph usage, infection prevention etc. 7. Find out the solution for new equipment lying in OT (Sterilizers and OT X-ray machines). 8. Availability of evidence based technical guidance material and tools for clinical staff and managers.
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ANNEX -III

Findings of EmONC Needs Assessment in EC Selected MCH Centres (BEmONC facilities) and Referral level Hospitals (CEmONC facilities) in Galkayo, Puntland			
EmONC Indicators	South Galkayo MCH	MCH IDP Galkayo ISRAC	Galkayo Medical Centre, Galkayo
<p>Facility Infrastructure: Facility Infrastructure and Capacity Transportation and Communication Payment for Services (User Fees)</p>	<p>Urban facility started functioning in 2008. Catchment population 10,000; 9 catchment villages. Enough number of rooms (8) available. Combined labour and delivery rooms with one delivery table, an examination couch and toilet access. Postnatal with two beds. The other postnatal is currently used as pharmacy. Separate big waiting area for patients and visitors No lab facilities. Currently no duty room to house Staff for 24/7 BEmONC but could be easily arranged within existing structure No electricity however, running water is available. 3 more toilet facilities outside. All services are currently free of charges. Women stay 6 hrs post-delivery. No facility based transport arrangements for referral cases. Hospital is 4 km away and it takes 2 hrs to get there.</p>	<p>Catchment population 6000-7000, caters 4 IDP camps Urban/semi-urban facility run by PMWDO (Puntland Minority Women Organization) Looks like a health post started functioning in 2008. Building is poorly constructed, it's not worth renovating. New building needs to be constructed, good sites available. Limited number of rooms totals 4 rooms. Combined labour, delivery and ANC clinic in one room with one delivery table also used as examination couch. Postnatal room has one floor mattress only. Electricity available however, there is no running water. All services are currently free of charges. Women are kept for 6 hrs post-delivery. Doctor visits once a week. No services for focused ANC/PNC, FP, PMTCT and AMTSL. Transport to refer poor IDPs is arranged at NGOs expenses. Hospital is about 3.5 km away and it takes 1.5hrs to get there. No maternal death audit or review carried out.</p>	<p>Referral level hospital managed by NGO called Galkayo Medical Foundation. Financial support from UNHCR, Italian NGO, UNCEF and UNFPA Catchment population: 160,000 (Galkayo district Population) 72 bedded hospital with 37 are designated for Gynea/ Obst unit. Separate rooms for labour, delivery and postnatal. Only one delivery table No eclampsia room, a separate 2 bed is used for eclampsia cases. Electricity and running water available 24 hrs. Generator is also available. 3 toilet facilities with direct access from delivery room. No blood bank currently exists; on-spot blood transfusion is carried out. Separate sterilizer for maternity unit. Focused ANC is not well known concept Non-surgical FP methods available No PMTCT services Maternal death review or audit not carried out. No facility based transport arrangement for referral cases Charges for services: \$20 for normal and assisted deliveries, \$250 for C-Section, fee for other services varies from \$ 2-10. Fee waiver for poor IDPs</p>
<p>Human Resources: Overall Staffing</p>	<p>Lack of HR, 1 M/W not fully qualified, 1 qualified Male Nurses, 2 Auxiliary M/W,</p>	<p>Small staff strength. 1 M/W qualified, 1 qualified Male Nurse, 2 Auxiliary. 2 TBAs</p>	<p>Big referral level private-cum-NGO hospital in whole Puntland and does not</p>

<p>24-Hour Availability Performance of Signal Functions/ Essential Services</p>	<p>No Lab. tech. 7 TBAs are attached with this facility M/W though claims to have obtained higher educational grades, but has limited knowledge and no practice of focussed ANC/PNC. The incentive provided to staff is from the local organizations contribution. Working hours are only from 08:00-12:30</p>	<p>are linked with this facility. Staff claims to be on call after working hours but review of one maternal death reveals the contrary facts when a mother having been delivered by a TBA at this HC died of PPH without receiving any skilled care.</p>	<p>have qualified Paediatrician, Neonatologist and Anaesthetist. 1 Gynaecologist, 4 GPs including one Post-graduate trainee, 1 General Surgeon, 2 Health Officer/Medical assistants, 1 M/W, 1 Nurse, 1 Nurse Anaesthesia technicians (trained), 2 OT technicians (trained), 3 Auxiliaries, 5 Lab technicians (2 qualified). C-section only performed by the gynaecologist, others just assist him. Doctors are on call after office hours. 24 hours CEmONC service provided Quite a big gap of qualified and trained human resources.</p>
<p>Services Delivery</p>	<p>Routine ANC/PNC services Referral of High Risk Pregnancies STI treatment Family Planning Counselling Health Education and promotional activities Counselling on prevention of HIVAIDS No PMTCT, no VCT</p>	<p>Routine ANC/PNC services Referral of High Risk Pregnancies STI treatment Family Planning Counselling Health Education and promotional activities Counselling on prevention of HIVAIDS No PMTCT, no VCT</p>	<p>Normal and assisted vaginal deliveries and C-Section 500-600/year Routine ANC/PNC, no focused ANC/PNC No forceps delivery, however Vacuum extraction is preferred. Manual vacuum aspiration and D&C, D&E Syndromic management and treatment of STI Family Planning Counselling methods IUD, Pills and condoms Referrals for PMTCT and VCT, About 3000 screening of HIVAIDS each year.</p>
<p>Availability of Drugs, Supplies and Equipment: Pharmacy Equipment and Supplies Laboratory (Equipment and Supplies)</p>	<p>This MCH was recently built, 2007 and is reasonably well equipped. Sufficient instruments and equipment to carry out normal vaginal deliveries (2 sets). No equipment for assisted vaginal delivery or newborn resuscitation (NBR) services.</p>	<p>No Pharmacy as per-se, currently accommodated in under-5 clinic. Medicine supplied by UNICEF and WVI. No inventory or record keeping for the medicines received and dispensed. Refrigerator (cold chain) not available for</p>	<p>All the units of pharmacy, OT, delivery room and laboratory are well supplied and equipped. Equipment and instruments in OT and delivery room are well stocked. In fact extra loads packed RH kit for referral level</p>

<p>Infection Prevention Guidelines and Protocols</p>	<p>No laboratory facilities. Sterilizer not available and instruments are boiled in a pot over the stove. Currently pharmacy is housed in 2nd Postnatal ward but soon will be shifted to big cold chain room. Limited supply of medicines (UNICEF Kit). No anticonvulsants (Magnesium sulphate) for eclampsia, no antihypertensive medicines, No Oxytocin supplied - use tab. Ergometrine. Only Ringer's lactate available, no other I/V infusion fluids supplied. No FP methods and no ARVs. Urinary catheters supplied 4 years ago in basic health kit, stock needs to be replenished. Record not maintained properly and not up to date. Last entry in 6/2010. No mechanism to discard expired medicine. Refrigerator (cold chain) available for drugs. No technical guidelines to consult for reference purpose. Patient's privacy in delivery and PN room is not respected. No incinerator, dig hole outside MCH premises for placental burial.</p>	<p>drugs. Sufficient supply of quality medicines and antibiotics, however, no anticonvulsants (Magnesium sulphate) for eclampsia, no antihypertensive medicines, FP methods or ARVs. No Oxytocin supplied - use tab. Ergometrine. Only Ringer's lactate available, no other i/v infusion fluids supplied. No technical guidelines to consult for reference purpose. No newborn resuscitation services, no laboratory facilities. Infection prevention: Lack of running water does not allow proper does not allow adopting proper infection prevention measures. Patient's privacy in delivery and PN room is not respected as it is all combined together. Enough supplies of instruments and equipment for normal vaginal deliveries (2 sets) but none for assisted vaginal delivery or newborn resuscitation and immediate newborn care e.g. mask and ambu bag etc. no Gynea services are provided (D/C or D/E). No incinerator, dig hole outside MCH premises for placental burial. No laboratory services available.</p>	<p>is lying in the main pharmacy store. Good monitoring and supervision is required to use all these supplies. Inventory maintained and up to date. Pharmacy not accessible 24 hours. Medicine supplied by UNHCR, UNICEF kit, UNFPA kit, while others are purchased. NO ARV drugs, patients are referred to General hospital. 5 incubators and one Radiant warmer available but lack of Oxygen supply and training issue make these redundant. Currently being used as baby cots. No newborn resuscitation equipment available (Ambu bag and mask). Infection prevention measures reasonably maintained but could be improved further specially hand washing and safe disposal of hospital wastes. A hygienic condition in post op cases is a bit neglected. No technical or clinical guidelines for technical staff or managers. Incinerator available for hospital waste disposal.</p>
<p>Facility Data for Indicators: Deliveries number and types Post abortion Care and Family Planning Obstetric complications and referrals Maternal deaths due to obstetric causes</p>	<p>Facility is quite careless in recording the number, and type of the deliveries. The outcome of mothers and babies as well as referral cases not recorded. No evidence of facility based deliveries could be found.</p>	<p>Facility record is not kept at all. Only one register for all the services provided at the HC. No proper and up to date record of number and type of the deliveries, the outcome of mothers and babies as well as referral cases</p>	<p>Very poor data recording and management. Only one register for all sorts of services. C-Section files are blank without patients' notes. Partograph not used at all. On an average there have been 2-4 stillbirth cases every month. No thoughts given to look in to the reasons and do</p>

Newborn Outcomes (for Facility Births) Quality of Registry Data			follow up. No written notes found on the file of maternal death following C-section. Strong need of monitoring and supervision of staff work in the maternity unit, completing and maintaining the patient records and files.
BEmONC Signal Functions and other Essential Services: 1. Parenteral antibiotics 2. Administer uterotonics drugs 3. Parenteral Anticonvulsants 4. Manual Removal of Placenta 5. Removal of Retained Products 6. Assisted Vaginal Delivery 7. Newborn Resuscitation 8. Other MN Health-related services	None of the BEmONC signal functions are performed at this facility due to supply, training and HR issues. Only oral Ergometrine tablets are given to post delivered mothers.	Only first 3 BEmONC signal functions are performed while others are not carried out due to HR, training, supply and infrastructure issues. AMTSL, Partograph use are not practiced, - training required. Cases are referred to hospital for PMTCT and ARVs	8 out of 9 CEmONC signal functions are performed but without maintaining any record. Neonatal resuscitation is lacking due to non-availability of Ambu bag and mask. No neonatal care for low birth weight or premature babies.
Partograph Review	Partograph not used due to training and supply issues.	Partograph not used due to training and supply issues.	Partograph is not used, not considered as mandatory. In the beginning of assessment the gynaecologist clearly assured about usage of partograph by all the clinical staff. However, upon personal visit and physical check, this turned out to be totally misleading. The partograph is not practiced at all; even staff is trained in this tool.

<p>Provider Knowledge and Competency for Maternal and Newborn Care Guided Interview for Newborn Resuscitation</p>	<p>Only 6 facility based deliveries were conducted by the M/W who has one year post qualification experience. No knowledge of focussed ANC and AMTSL, however, reasonable understanding of high risk pregnancies, labour management and immediate newborn care. No skills to manage removal of retained placenta or the products of conception. All cases of unsafe abortions are referred to hospital due to skills and management issues. Partograph usage is totally ignored.</p>	<p>The M/W an intelligent lady, has good knowledge of MNH care and high risk pregnancies, labour management and immediate newborn care, however, it is not practiced due to space limitation. Perhaps the motivation is a contributing factor. There is need of capacity building in NBC and NBR.</p>	<p>Providers have reasonably good knowledge and skills for MNH care, however, this knowledge is not put in to practice - time constraints, lack of motivation. and ignorance are the main factors. No attention is given to focussed ANC, PNC, AMTSL, Partograph usage, Neonatal resuscitation. Reasonable understanding of high risk pregnancies, labour management and immediate newborn care. .Limited knowledge of focussed ANC and AMTSL. Skills to fill-in Partograph is also limited</p>
<p>Review of Caesarean Section Delivery</p>	<p>Not Applicable</p>	<p>Not Applicable</p>	<p>It was really difficult to dig out the information from the record. Review of two C-section cases did not give any information as basic data was missing. Files do not provide any information except patient's name, age and town of residence. No pre or post-operative notes, no indication of surgery. Complete ignorance on part of medical staff.</p>
<p>Maternal Death/Audit Review</p>	<p>No facility based maternal death since past one year</p>	<p>Maternal death review/audit is not carried out. One mother died of PPH after the delivery conducted by the TBA at HC during night time. She could not manage the bleeding. Doctor and M/W supposed to be on call, never showed up to assist the TBA.</p>	<p>No system to record, review or audit of maternal death. There were two maternal deaths since July 2011 however, the cause was not recorded. One died during surgery and the file for other could not be found... Information obtained from the main register of the maternity ward and oral interview with staff and their re-call information</p>
<p>Cost recovery and Cost Sharing</p>	<p>All services are currently free of charges.</p>	<p>All services are currently free of charges, hence no cost sharing and cost recovery is considered at this stage. Support is received from the PMWDO NGO</p>	<p>The fee charged for various clinical and surgical services is used towards running cost of the hospital.</p>

<p>Recommendations:</p>	<ol style="list-style-type: none"> 1) To make it as 24/7 BEmONC facility major interventions are needed in terms of internal renovation/change over, provision of electric supply, more staff positions, HR development, skills and capacity building and performance based incentives to staff to enhance facility utilization by the community. 2) Training for community mobilization and awareness creation is essential to increase utilization of facility based services. 3) Major improvement is needed in infection prevention measures especially in the delivery room and PN ward. 	<ol style="list-style-type: none"> 1. The facility needs major interventions convert is as 24/7 BEmONC. 2. It is not worth renovating the existing building due to its poor construction. 3. New building needs to be constructed with complete comprehensive maternity unit running water and electric supply. Good sites available in nearby area. 4. HR development, skills and capacity building in management of EmONC and BMR 5. Performance based incentives to staff to enhance facility utilization by the community. 6. Training for community mobilization and awareness creation is essential to increase utilization of facility based services 	<ol style="list-style-type: none"> 1. Supply Oxygen and training to use the available incubators. 2. Skill development and capacity building of facility staff in focused ANC, AMTSL, Partograph usage, infection prevention etc. 3. Availability of evidence based technical guidance material and tools for clinical staff and managers. 4. Maintain proper and up to date facility data for indicators (registers, reports, books and death review etc.) 5. In-charge of facility and of maternity ward to monitor and supervise the work of medical and technical work ensuring complete and up to date patient record card and files. Not to miss out partograph as well. 6. Good monitoring and supervision is required to use extra loads of supplies and equipment. 7. Blood bank services need to be established
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