

ADDIS ABABA UNIVERSITY

FACULTY OF MEDICINE

SCHOOL OF PUBLIC HEALTH

Assessment of patterns of utilization and quality of
Emergency Obstetric Care services in South West
Shoa Zone of Oromia Regional State, Ethiopia

Investigator: - Tilahun Diriba

Advisor :-Professor Mesganaw Fantahun

July 11, 2011

ADDIS ABABA

Assessment of patterns of utilization and quality
of Emergency Obstetric Care services in South
West Shoa Zone Oromia Regional State,
Ethiopia

To be submitted to SPH –AAU for partial
fulfillment of master thesis

July 11, 2011

ADDIS ABABA

Acknowledgements

First and foremost I offer my sincerest gratitude to my advisor, Professor Mesganaw Fantahun, who has supported me throughout my thesis with his patience and knowledge whilst allowing me the room to work in my own way. I attribute the level of my Masters degree to his encouragement and effort and without him this thesis, too, would not have been completed or written.

I acknowledge the SPH-AAU for its giving me the opportunity and financial support to do this thesis.

I would like to thank Oromia regional health bureau, especially, Woliso special town health office for supporting, encouraging and paying me monthly salary to pursue this degree.

Finally, I would like to acknowledge all health facilities, where data were collected, in Southwest Shoa zone and participants for their cooperation.

Table of Content

page

Acknowledgement

List of figures

Lists of tables

Abstract -----	0
1 Background -----	1
1.1 Statement of the problems-----	2
1.2 Rationale of the study-----	2
2. Literature review -----	3
2.1 Availability of EmOC-----	4
2.2 Utilization of EmOC-----	4-5
2.3 Quality of EmOC services-----	5
3. Objectives-----	6
4. Methods-----	7
4.1 Study area-----	7
4.2 Study design-----	7-8
4.3 Record review-----	8
4.4 Sample size-----	8-9
4.5 Data management and analysis-----	10
4.6 Ethical considerations-----	10
4.7 Study result-----	11-22
5 Discussion-----	23-26
6 Recommendations-----	26
7 References-----	27-28

List of figures	page
Figure 1: Frequency of health centers in which each signal function Was performed in 2010, South West Shoa	11
Figure 2: Availability of minimum BEmOC supply and drugs to implement Signal functions at 12 health centers in South West Shoa zone, 2010	12
Figure 3: percentage of diagnosis /causes of admission to CEmOC facility, Southwest Shoa, 2010	16

List of table	page
Table 1: Reasons why signal functions were not performed in 12 health centers by respondents who said no, South West Shoa, 2010	13
Table 2: Age distributions of obstetric patients at CEmOC facility, Southwest Shoa, 2010	14
Table 3: Met need for EmOC and crude direct obstetric case fatality rate at CEmOC facility, south West Shoa, 2010	15
Table 4: Diagnosis and treatment by cesarean section at CEmOC facility, South West Shoa zone, 2010	21
Table 5: Frequency of maternal death due to direct obstetric complications at CEmOC facility, South West Shoa zone, 2010	22

Acronyms

AAU- Addis Ababa University

ANC- Antenatal care

APH- Ant partum Hemorrhage

BEmOC -Basic Emergency Obstetric Care

CEmOC -Comprehensive Emergency Obstetric Care

C/S- Cesarean Section

EmOC- Emergency Obstetric Care

E and C-Evacuation and Curettage

EOC- Essential Obstetric Care

MCH -Maternal and Child Health

MDG -Millennium Development Goals

MPS-Make pregnancy safe

MVA -Manual Vacuum Aspiration

UNFPA -United Nation Population Fund

PIH- Pregnancy Induced Hypertension

PPH -Postpartum Hemorrhage

WHO -World Health Organization

Abstract

Background: Though one way of reducing maternal deaths, is by improving the availability, accessibility and use of services for the treatment of obstetric complications that arise during pregnancy and childbirth; still, few facilities are providing the services. 80% of women are dying from direct emergency obstetrics complications.

Objectives: To assess the availability, patterns of utilization and quality of emergency obstetric care services in health facilities as a measure of progress towards maternal mortality reduction and set a base line for the zone.

Methods: A cross-sectional institution based survey was conducted in 12 districts of South West Shoa zone of Oromia regional state. Twelve health centers and one hospital were involved in the study. EmOC facilities` data of one year(January1, 2010-December30, 2010)were obtained by reviewing obstetric,gynecological and surgical log book. Clients and key informatics were interviewed

Results : There was one comprehensive emergency obstetric care (CEmOC) facility per 1,088,06 in the zone. 562 obstetric complication cases were served in CEmOC facility. 413(80%) of cases were direct obstetric complications which make the met need for EMOC 6.6% in the zone with the highest for urban (22.4%) where the CEmOC is founded and the lowest 0.72% for rural district . Among 41,346 estimated deliveries 447 (1.08%) were c/s deliveries;298(66.7%) were due to absolute maternal indications. The crude direct obstetric case fatality rate was 14(3.39%) and the causes were: uterine ruptue,PIH, hemmorehge(APH and PPH),obstructed labor,and purepureal sepsis in which each cases account for 4(28.6%),3(21.4%),3(21.4%),2(14.3%),and 2(14.3%) respectively.

Conclusion and Recommendations: Majority of women are inaccessible to EmOC or life saving services.Although they utilize the EmOC facility through different difficulties, they encounter startiling facility obstetric case fatality.The supportive supervision list lacks EmOC services. Patients (sepsis and PIH cases) complained high waiting time before adimission. There fore,maternal health should not be only political agenda, and quality EmOC services should be available at reasonable place and time. Further studies on emergency obstetric services starting from health personel pre service training to community level is mandatory

1. Background

One way of reducing maternal deaths, is by improving the availability, accessibility and use of services for the treatment of obstetric complications that arise during pregnancy and childbirth. These services are collectively known as emergency obstetric care. Based on functionality and ability to provide life saving emergency obstetric procedures, a health facility can be classified either basic or comprehensive emergency obstetric facilities. Basic EmOC facilities expected to provide the following seven services; administration of parental antibiotic, parental uterotonic drugs, parental anti convalescents for pre-eclampsia, manual removal of retained placenta, removal of retained products of conception, assisted vaginal delivery and basic resuscitation of newborn. Comprehensive EmOC facilities expected to provide caesarean section and blood transfusion in addition to those services provided by basic EmOC facilities (3). These life saving services should be started at least at health center level.

More than half million maternal death worldwide, 99% of them in developing countries (86% in Africa and Asia) further more for each maternal death there is an estimate of 30 disabilities related to pregnancy per year (1). Etiologically, maternal deaths are classified as direct and indirect causes. About 80% of maternal deaths worldwide are due to hemorrhage, sepsis, unsafe abortion, obstructed labor and pregnancy induced hypertension (1, 2). In Ethiopia set up, the five direct common causes of maternal deaths were abortion complications, puerperal sepsis, uterine rupture, post partum hemorrhage and eclampsia (3, 5). According to EDHS 2000 and 2005, the estimated maternal mortality rates of Ethiopia were 871/100,000 and 673/100,000 live births respectively (5).

1.1 Statement of the problem

Providing EmOC, services to the population in need are an endeavor that is highly important to reduce maternal deaths. Therefore, health facilities are expected to provide the service per standard accordingly. However, studies in different countries showed that the way the facility supposed to function and what it does is quite different. In some countries certain signal functions are virtually missing due to they are not included in pre service training of health personnel or national treatment protocols (2). As yet, only one national survey in 2008 have been carried out to assess how/what obstetric complications are really are managed at health center level in Ethiopia and the authorities do not have sufficient data to make affirm decision as to whether health facilities can provide the service or not.

1.2 Rationale of the study

Maternal mortality rate in developing countries including Ethiopia remains one of the highest in the world. Because reducing maternal mortality has become at the top of health and development agenda. To achieve the international commitments, locally conducted studies are essential to establish and maintain effective and result oriented initiatives (4). Therefore, it is important to asses if;

- ✓ There are enough facilities providing EmOC
- ✓ The existing facilities are providing EmOC
- ✓ The facilities are well distributed
- ✓ The quality of services is adequate

This paper explores the current emergency obstetric care services status, provides appropriate foundation for evidence-based program, and services actions in Southwest Shoa zone, Oromia regional state, Ethiopia

2. Literature review of the study

The 1987 Safe Motherhood Conference in Nairobi, Kenya, is the first time when the international health community has clearly given an attention on deaths of women due to complication of pregnancy or childbirth. The second and the great movement which propagated through different conferences in different countries was set in 1990 by UN sponsorship at UN headquarters. It is the world summit for children with seven major goals which was organized by UNICEF. One of the seven major goals is the reduction of maternal mortality by half between 1990 and the year 2000. This goal had been reminded again; in the 1994 ICPD, Cairo, Egypt, in the 1995 Fourth World Conference on Women in Beijing, China, and the `Nairobi 10 years On` in Sri Lanka in 1997. The 2000 world summit with the eight-millennium development goals; on the fifth goal, the international community has again committed itself to reduce maternal mortality by 3/4th between 1990 and 2015.

In 2007, the 20th anniversary of the launching of the Safe Motherhood Initiative and the Women Deliver Conference in London, England, at which calls were made for renewed commitment, programs and monitoring (3). Finally, after 20 years the stakeholders, international and national scholars suggested that EmOC should be universally available and accessible, that all women should deliver their infants in the presence of professional, skilled birth attendant, and that these key services should be integrated into health system (2, 3). High quality emergency obstetric care is key tool to reduce maternal mortality and to achieve the MDGs, MMRs will need to decrease at a much faster rate in the future – especially in sub-Saharan Africa, where the annual decline has so far been approximately 0.1% in between 1990-2005 while 5.5% has been needed annually to achieve the goal(2).

Ethiopia, like many other developing countries, has gone through the various approaches to improve maternal health with the first organized effort, which made with the establishment of the Maternal and Child Health (MCH) Coordinating Office at the Ministry of Health in 1979(4). Since then different reforms has been carried out, for example; health sectors development programs of three phases with the recent 2005/6-2009/10, national reproductive health strategy 2006-2015 and the 2005 `essential health service package in Ethiopia` were the major movements in maternal mortality reduction strategies in Ethiopia.

2.1 Availability of EmOC

Emergency obstetric care as; it could be provided at health centers and district hospitals even health posts identify and facilitate referral services (9). Though this is a good willing, studies showed not all supposed facilities provide the services. A case study in Uganda in 2003, the need for EmOC was assessed, in order to provide the Government with background or drawing up an operational strategy to reduce maternal deaths. Within the health infrastructure plan in Uganda, district hospitals and health centers IV should be able to provide comprehensive EmOC. The assessment showed, however, that only 21 of the 32 hospitals assessed (65%) were comprehensive, while the other 11 functioned at the basic level. Of the 36 health centers IV visited, only two (6%) functioned at the comprehensive level and another two at the basic level. Health centers III theoretically provide basic EmOC, but only 5 (4%) of the 129 assessed functioned at their intended level. The results—particularly which signal functions were missing were used to prepare the annual plan for the sector-wide approach, which called for a national effort to improve EmOC (13). Other studies in Malawi, There were 1.6 comprehensive emergency obstetric care (CEmOC) facilities per 500,000 population and 0.8 basic emergency obstetric care (BEmOC) facilities per 125,000 populations. The researcher concluded that even if CEMOC facility was adequate, the distribution was unequal and left the rural community in access to the services

2.2 Utilization of EmOC

A study of national data for 1991–1992 in the United States, a country with low maternal mortality, showed total of 18 hospitalizations for obstetric and pregnancy loss per 100 births (14). These findings were confirmed by more recent data (15). Although the results vary, the technical consultation decided to maintain 15% as an average estimate of the frequency of serious direct complications for the purposes of estimating the need for EmOC. Other prospective study in India showed that 14.4% of deliveries were associated with serious complication (16). Similarly, two studies in Ethiopia by Comparative cross sectional study between urban and rural sets in north Gondar in 2002; among 1242 studied population 19%(236) experienced complication of labor and delivery of which only 32% were consulted health worker and the total institution delivery rate was 13.2% while it was 1.7% for rural

villages (11). The Community based prolonged labor cohort study in rural Butajira, Ethiopia; among cohort 1267 with only three loss follow up pregnant women 181 women experienced Prolonged labor of which only 8.8% got medical aid (referred to health centre). The outcome of pregnancy were; 2.4% abortion, 45/1000 prenatal death, two maternal death related PPH, 7.4% developed fever, 5.4% excessive vaginal bleeding and 1.7% had urinary incontinence (6).

The 2007, annual report of St. Luke catholic hospital and college of Nursing, southwest Shoa, Woliso indicated that 2213 women gave birth of which 42% were abnormal deliveries.

2.3 Quality of EMOC

Where maternal mortality is high, the rate of caesarean sections tends to be low, especially in rural areas. A recent review of global, regional and national rates of caesarean section showed that the lowest rate (3.5%) was in Africa; in the 49 least-developed countries, the rates ranged from 0.4% in Chad to 6% in Cape Verde (or an average of 2%) (17). Studies in Northern Ethiopia, Life saving Emergency obstetric care services was inaccessible to majority of the community providing that the need is high. The study indicated that the caesarean section rate was 1.5% whereas, among rural it was 0.9% (11) while the acceptable range is (5 % -15) (3)

Facility based, retrospective record review study in Black Lion teaching specialized referral hospital A.A, Ethiopia in 2002 indicated that the MMR for the hospital was 1107.5/100,000 live births and the direct cause of death accounts for 34(89.5%). Of the known five causes of obstetric death, Post abortion complication (28.9%), eclampsia (21.1%) and rupture uterus (15.8%) were the three leading cause of death. Similarly, 34 women diagnosed as having postpartum hemorrhage of which 44.1% were among those delivered at hospital (10) .Other record review study in Jimma specialized hospital the MMR was 888.5/100.000 live births.

From annual report of St. Luke`s hospital, seven (316/100,000 live births) maternal deaths were registered in 2007. The causes of deaths were: ruptured uterus, PPH after home delivery, complication of abortion and purpuriem sepsis after home delivery accounts for 3(42.9%), 1(12.5%), 1(12.5%) and 2(25%) respectively (7).

3. Objectives

General objective:

To determine the availability, utilization and quality of essential obstetric care services in health facilities of Southwest Shoa zone as a measure of progress towards maternal mortality reduction and provide relevant baseline information for future program formulation and evaluation.

Specific objectives:

1. To assess patterns of utilization of emergency obstetric care in southwest shoa zone
2. To assess quality of emergency obstetric care services in the existing emergency obstetric care facilities in Southwest Shoa zone
 - 2.1 To calculate facility base obstetric case fatality rate
 - 2.2 To calculate cesarean section rate
 - 2.3 To assess linkage of EmOC services to other maternity care.
 - 2.4 To assess availability of basic EmOC supplies and equipment

4. Methods

4.1 Study area: This study is carried out in southwest shoa administrative zone, Oromia regional state, Ethiopia. It is located at 114kms south of Addis Ababa. Administratively, the zone has 11 rural districts and 1 special urban district, which is the capital of the zone, Woliso town and 285 rural kebeles. In 2009/10, it had an estimate total population of 1,088,060.00 million of which 240,000.00 are women in reproductive age and 41,346.00 are pregnant. According to the 2009/10 annual plan it had 1 NGO hospital, 27 functional health centers, 114 health posts and 32 private clinics that making the primary Health service coverage (67.27%) in (2009/10).Economically, the livelihoods of population depend on traditional agricultural product.

4.2 Study design: Cross sectional facility based survey was conducted. This study(survey) design was preferred as it provides useful information and enables to develop hypothesis which targeted at emergency obstetric care service improvement with in short period of time. Recent last 12-month period record (January 1, 2010-December 31, 2010) was reviewed 13 health facilities(12 health centers and 1 hospital) in southwest shoa zone those were considered as providing EMOC by zonal health department were selected. Name of health facilities with their corresponding districts were obtained from zonal health department planning office. Inclusion criteria for facilities were; the facility that providing EOC services and known to the zone health department family health officer as possibly providing it. 34 Health posts were included in this study because provision of essential obstetric care: antenatal, delivery, postnatal cares, use of partograph, early identification and referral can reduce complications and death as well as it indicates integration of services (3).

Lists of health professionals with their job description/assignment and educational status were used as a sampling frame. Zonal and districts family health team as well as health facilities` health officers, midwifery, nurses and community health extension workers were interviewed.

The inclusion criteria were: those having certificate for health extension workers, diploma and above for health centers and hospitals staffs who are currently recruited and working at least for 3 months. However, nurses, health officers, physician who have served for less than 3 months as well as professionals with more than 3 months working experience but do not have direct relationships with maternity care were excluded.

EmOC clients who visited EmOC facilities during the study period for different pregnancy related cases were included to assess their feeling to ward EmOC services

4.3 Record review: Even if, women in reproductive age group in southwest shoa zone were the reference populations for this study and all pregnant women on labor and delivery process and purpuriem of less than 42 days were the source populations. However, only those visited EmOC facilities for obstetric complication and delivery from January 1, 2010-December 31, 2010 were considered as study unit. Delivery log book, gynecological and maternity ward registration book, female surgical and medical ward admission & discharge registration book and surgical log book were reviewed

4.4 Sample size:

In this study, WHO UNICEF and UNFPA criteria, which were developed in 1992 and re-edited in 1997 and revised in 2006 for the area (sub national), were used as standard. <<The number of EOC facilities to be reviewed in the area will be; if there are 25 or fewer comprehensive EOC, all will be studied. But if more than 25 a subset as many as possible but the number should represent at least 30% and not less than 20 for basic EOC if 100 facilities or fewer all should be studied and if above 100 a subset of but not less than 30% will be studied(3)>>. The zone was purposively selected among the 17 zones in the region. Hence, in order to represent the zone and in line with the requirements of the international guidelines by joint UNICEF, WHO and UNFPA 12 health centers, one hospital and 30% of health posts are included in this study. Even though health posts are not expected to provide `signal functions`, for the sake of birth preparedness and complication readiness planning as well as for early complications detection during labor and delivery, they are included in the study.

$$N=1 \text{ hospital}+12 \text{ health centers}+34 \text{ health posts} =47$$

Sampling procedures: Steps,

Selection of health posts; two-stage sampling method

1. All districts in the zone were listed alphabetically with their total health posts
2. The health posts were listed alphabetically under their corresponding districts.

➤ 30% of health posts at zonal level were selected i.e., $.3 * 114 = 34$ health posts.

3. Each health post at each district was assigned with consecutive number starting with number one for the first list at each district.

4. The studied health posts were selected by simple random sampling; lottery method until the desired sample size was reached.

Selection of Health workers for interview

Health workers, who are working for family health department at zonal and district level, were the study subjects. At facility level, priority was given to those assigned to maternity care and those have taken special training on maternity services or essential obstetric care. Note; in a place where more than one professional, for example; two health officer at health center, three midwifery nurses in delivery ward of hospital, two health extension workers at health post ...then lottery method were used. In case of mixed staff in a team, that is midwifery and other nurses then purposively midwifery was interviewed. However, in absence of midwifery one who had been assigned to the maternity care services were used.

Data collection process: Standard questionnaires of WHO UNICEF & UNFPA for assessments of availability, use and quality of EmOC facilities were employed. It was tested and used in different countries including Ethiopia (care Ethiopia in Oromia regional state) (3). Mix of data collection: Thus, entailed collection of both quantitative and qualitative data and review of records using structured and semi-structured questionnaires to meet the objectives of the study were employed. Oromfa version questionnaires were used to collect data from health extension workers and patients.

4.5. Data management and analysis

Six nurse data collectors and two midwife supervisors were recruited and trained on the technique of data collection for 03 days. Moreover, practical exercise was carried out on the tool at Woliso health center before field visits for one day. The supervisors and PI checked the completeness and consistence of the questionnaire at the facility level and made correction at daily base. Unique id number was given to each question. Moreover, the variables were coded and codebook was used.

Analysis: Data entry and analysis were carried out using computer EPI INFO soft ware statistical package. Descriptive statistics; percentage, tables and graph were employed by using excel Microsoft ware. Measures (variables) in dependent variables; districts, facilities, health workers, age and address as well as outcome variables; Obstetric case fatality rate, Caesarean section rate were calculated. Facilities were classified whether they met the standards prescribed for basic EmOC if satisfies 7 signal functions and comprehensive EmOC 9 signal functions. Crew crossing the structured questionnaires (dichotomous response scale, yes/no) and in depth interview in assessing performance of signal functions with checklists of the availability of supplies, drugs and equipment were used.

4.6 Ethical considerations

The study was conducted after IRB of AAU approved and award me ethical clearance. Permission letters from Oromia regional health bureau and other health offices at all level was obtained. Willingness of the respondents was ensured by their respected informed consent. The structured consent was in regional working language, `Afan Oromo` and English accordingly. Pre counseling services at privacy was provided at appropriate time when the client or/and family were not under stress as well as confidentiality and rights of the client were maintained to prevent risks. For the sake of ethics, scientific merits and obtaining willingness of the respondents, the name of the investigator, the objective of the study, procedures, risks and benefits of the study were informed to the respondents. The right and confidentiality of all participants and organization were fully protected by giving codes to name of an individual during data entry and report. Anonymity was maintained for all reviewed records.

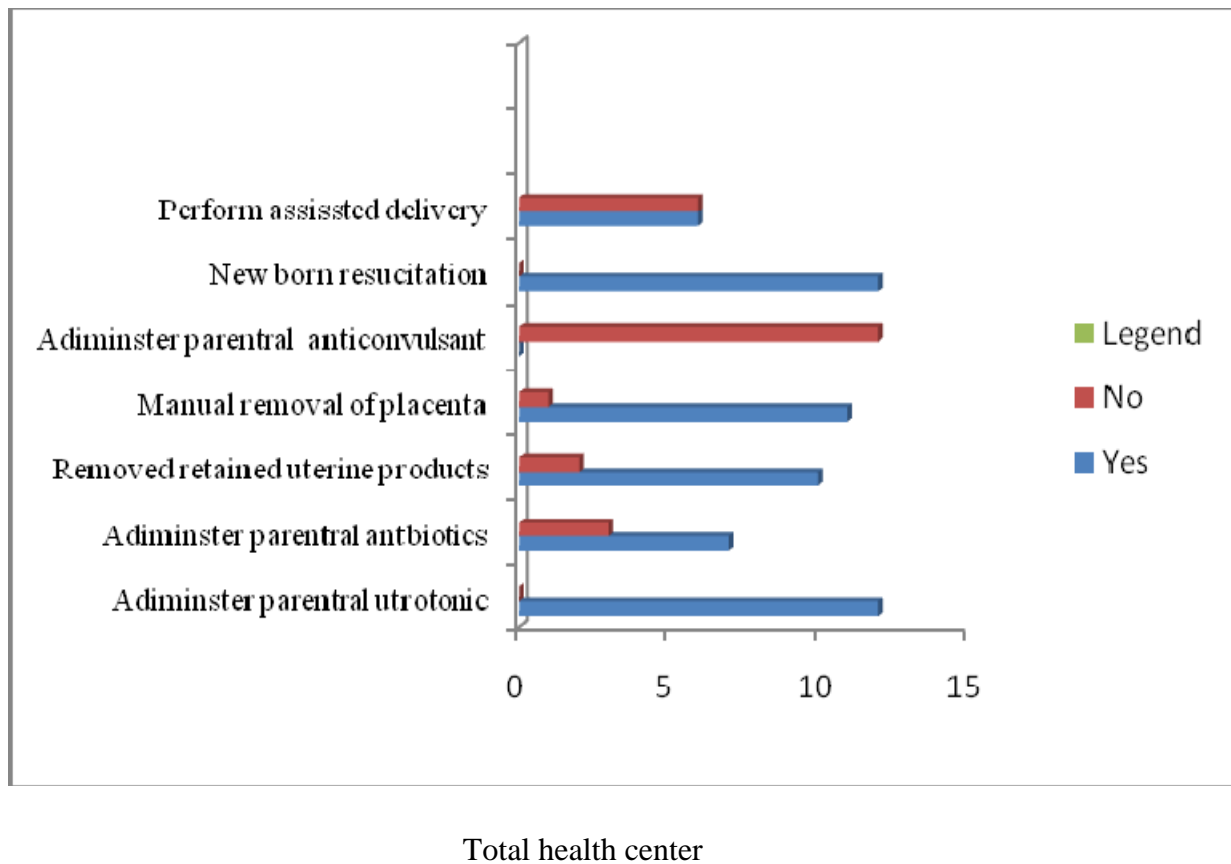
5. Result and Discussion

5.1 Availability of EMOC facilities

5.1.1 Availability of basic EMOC facility

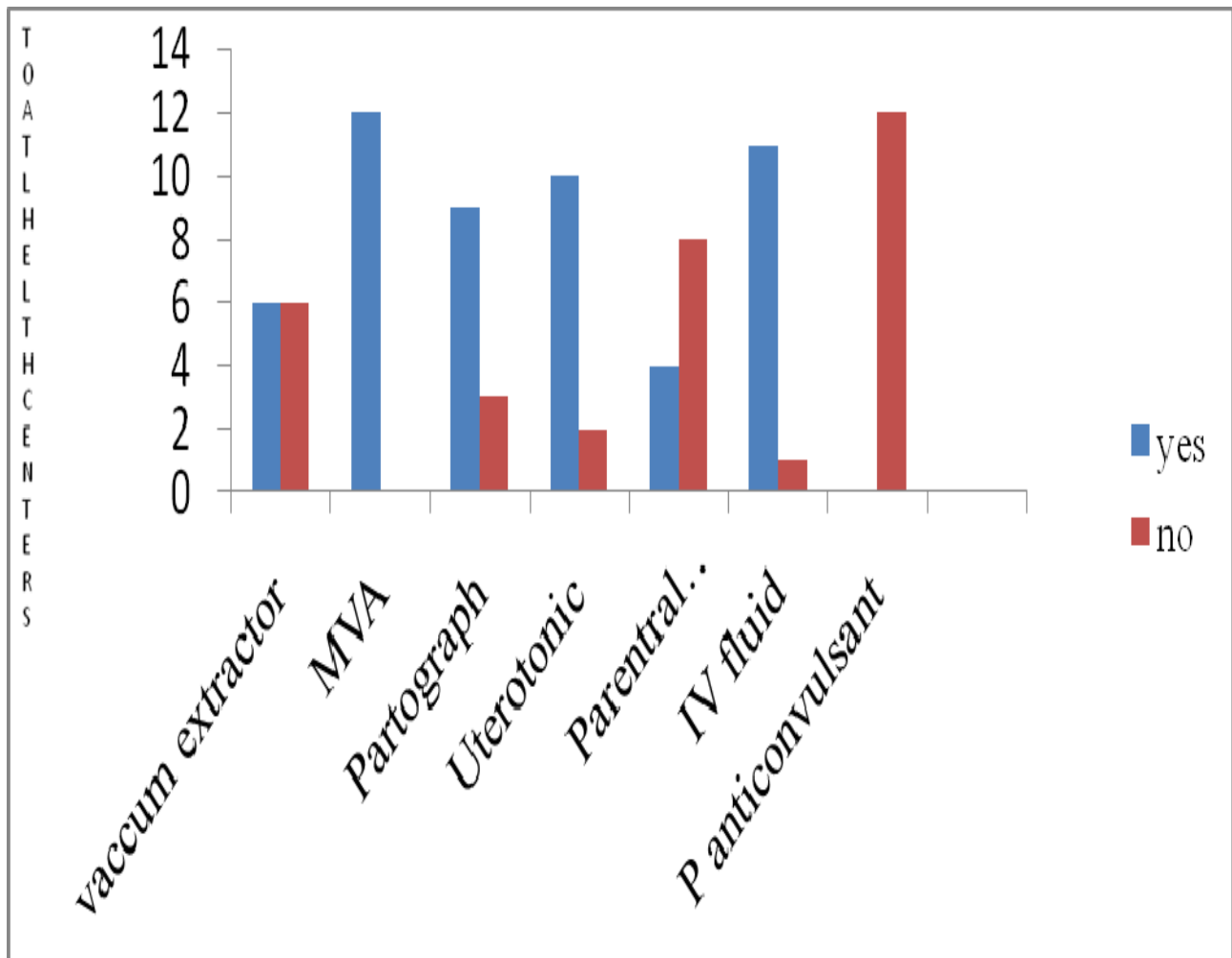
In this study, twelve health centers were assessed to determine the availability, patterns of utilizations and quality of EMOC. Basic signal functions: parenteral uterotonic, manual removal of placenta, removal of retained uterine products, parental antibiotics and assisted deliveries were provided by 12, 11,10,7 and 6 health centers respectively. However, none of health centers were providing all signal functions.

Figure1, Frequency of health centers in which each signal function was performed in 2010, South West Shoa



The minimum supply and drugs needed to implement EMOC were observed and checked in the health centers. The results showed all 12 health centers had MVA kit and parental anticonvulsant (diazepam), 10 health centers had parenteral oxytocine, 6 health centers had vacuum extractor, and 4 health centers had parental antibiotics mainly Ampicilline and Genatamicne.

Figure2, Availability of minimum BEMOC supply and drugs to implement signal functions at 12 health centers in South West Shoa zone, 2010



EmOC supply and equipments

From each health centers one respondent was asked why all signal functions were not performed. Among 12 respondents 11 were not administering parental anticonvulsant due to; policy issue, supply and drugs, training and no indications account for 5, 4, 1 and 1 respectively. Six respondents didn't conduct assisted delivery due to lack of vacuum extractor and 5 respondents didn't administer parental antibiotics (three due to lack of supply and drugs the rest two due to training and absence of indication).

Table 1, Reasons why signal functions were not performed in 12 health centers by respondents who said no, South West Shoa, 2010

Signal functions	Reasons				total
	No indications	Lack of EmOC Supply and drugs	Policy issue	Training	
Parenteral antibiotics(No=5)	1(20%)	3(60%)	0	1(20%)	5(100%)
Assisted delivery(No=6)	0	6(100%)	0	0	6(100%)
Manual removal of placenta(No=1)	0	0	1(100%)	0	1(100%)
Removal of retained products(No=2)	0	2(100%)	0	0	2(100%)
Parenteral anticonvulsants(No=11)	1(9.1%)	4(36.6%)	5(45.5%)	1(9.1%)	11(100%)

5.1.2 Availability of CEmOC facility

In this survey, one non governmental CEmOC Hospital is available. It services for 1,088,060 populations

5.2 Patterns of utilization of EmOC

In this survey, from January 1, 2010-December 31, 2010, 562 obstetric cases were served at CEmOC facility with the leading in age group of 19-29 which accounts for 363 (64.6 %). Residentially, 114 (19.6%) cases were from Woliso town. Concerning causes of admission as obstetric complications, among 562 cases 234(41.6%) were due to obstructed labor followed by previous c/s 74(13.2%). Nevertheless, of the total admissions, 413 (80%) of cases were the five direct obstetric complications: obstructed labor, hemorrhage (APH and PPH), PIH, puerperal sepsis, rupture uterus and abortion complications account for 234(56.6%), 69(16.7%), 39(9.4%), 28(6.8%), 22(5.3%) 21(5.1%) respectively.

Table2. Age distributions of obstetric patients at CEmOC facility, Southwest Shoa, 2010

Age group	Frequency	Percent
15 – 19	97	17.3%
20 – 24	184	32.7%
25 – 29	179	31.9%
30 – 34	68	12.1%
35 – 39	30	5.3%
40 – 44	3	0.5%
45 – 49	1	0.2%
Total	562	100.0%

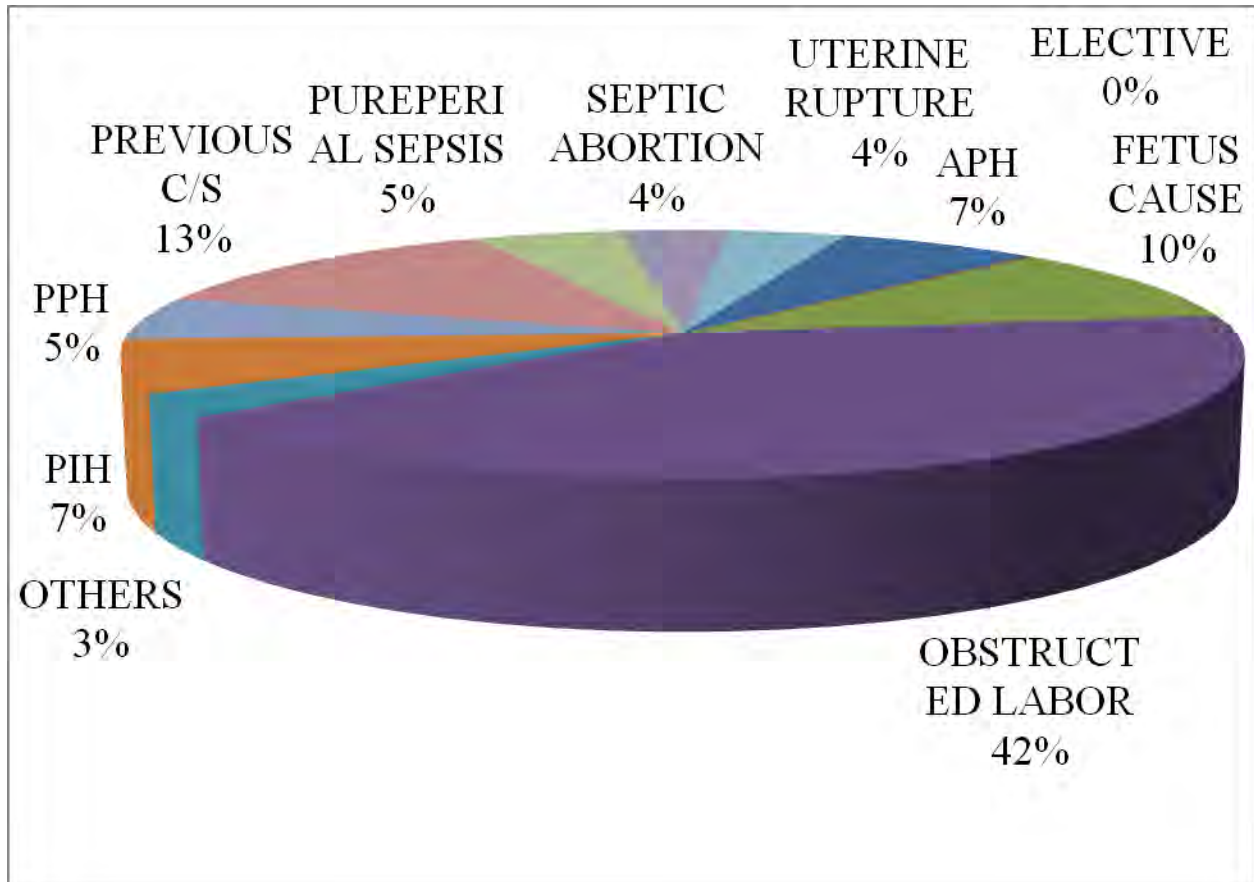
Table 3, Met need for EMOC and crude direct obstetric case fatality rate, South West Shoa, 2010

S.N	Woreda	(A) Total pop. **	(B)=A*3.8% Expected delivery ** (3.8%)	(C)=B*15% Expected pregnancy complication s (15%) ***	(D) Total observed obstetric cases	(E) Observed Direct cause of obstetric complicati ons	(F) Obser ved death	(G)=E/C *100% met need for EmOC	(H)=F/14 *100% direct obstetric case fatality rate
1	Ameya	134125	5097	764.5125	67	51	3	6.67	5.88
2	Becho	84031	3193	478.9767	41	30	0	6.26	0
3	Dawo	88605	3367	505.0485	29	23	2	4.55	8.70
4	Ilu	74120	2817	422.484	30	21	1	4.97	4.76
5	Goro	85609	3253	487.9713	53	43	3	8.81	6.98
6	Kersa	95119	3615	542.1783	7	4	0	0.73	0
7	Saden sodo	85176	3237	485.5032	46	34	1	7.00	2.94
8	Sodo dachi	45419	1726	258.8883	12	11	0	4.25	0
9	Tole	68561	2605	390.7977	10	7	0	1.79	0
10	Woliso u	54397	2067	310.0629	114	75	0	24.19	0
11	Woliso r	153578	5836	875.3946	85	65	2	7.43	3.08
12	Wonchi	119320	4534	680.124	68	49	2	7.20	4.08
13	Total	1088060	41346	6201.942	562	413	14	6.66	3.39

Source, **south west shoa zone, ZHD 2002 annual planning, and
 ***WHO/UNICEF, EmOC monitoring and evaluation, 2009

Figure 3, Diagnosis /causes of admission to CEmOC facility, 2010

N=562



5.3 Quality of EmOC

In this study, 12 administrative level MCH focal persons, 12 service providers, 30 clients, and 34 health extension workers were interviewed to assess quality of EmOC. Registration books were reviewed to assess the c/s rate and direct obstetric fatality rate of the CEmOC facility.

Twelve family health key informatics or MCH focal persons: one from zonal health department the rest from districts involved in self administers questionnaire and interview. All were responded that they performed supportive supervision for their respected health facilities in which four of them quarterly while seven of them conducted the supervision twice a year. But

none of them used check list which focused on EmOC and made neither verbal nor written feedback to the supervisee. All (12) of them were asked to list the EmOC signal functions. only 3(25%) individuals mentioned 5 signal functions(c/s, blood transfusion, assisted delivery, removal of retained uterine products and using oxytocine) and nine of them defined EmOC as only providing c/s and blood transfusion as well as their expectation also EMOC could be provided at hospital level alone.

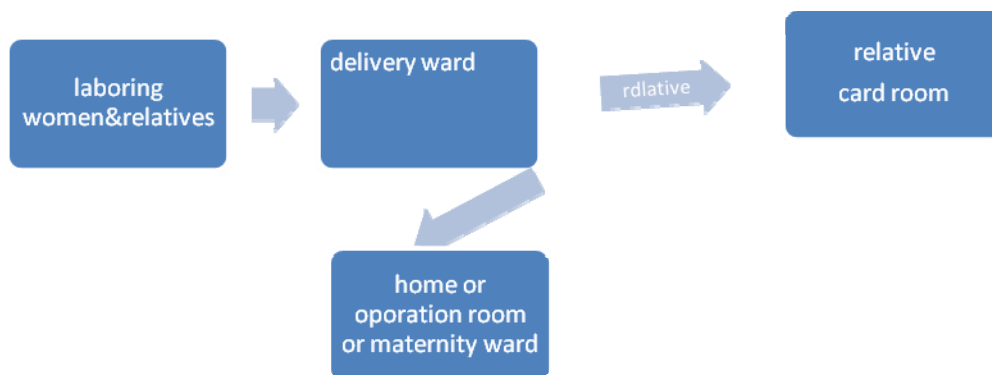
Twelve service providers (four health officers, and 8 mid wives) from 12 health centers responded that theoretically they knew all signal functions and administered oxytocine after delivery to manage PPH. All were trained in managing abortion care but they manage only abortion with out complication because of fear of further complications and lack of parental antibiotic in case of sepsis. Once they diagnose pre-eclampsia /eclampsia, obstructed labor and APH they refer it to the next level only one health center (Taji) used to registration book for obstetric complications and referral; obstetric complications data were not available at other health centers.

Thirty four health extension workers were interviewed about community level EMOC service for linkage of the service and early referral of cases to EmOC facility. Twenty attended normal delivery but fourteen of them did not attend yet in at least two years of their working experience. Pertaining to identifying obstructed /prolonged labor by using WHO partograph and early referral of patients; none of them used partograph. The admission criteria to attend normal delivery at health post for all health extension workers were mother history and lower abdominal pain. In general, all of them responded that they do not have standard criteria to diagnose and refer obstetric complications except providing health education. Twenty eight respondents answered that they took training on safe and clean delivery for 3 weeks at near by health centers. One respondent responded that <<we, HEWs, are not lucky in providing delivery services because mothers prefer either home delivery or health centers and beyond. They are true and wise enough! At health post it is too difficult to provide safe and clean delivery, because no water to clean equipment and no light at night to attend delivery”.

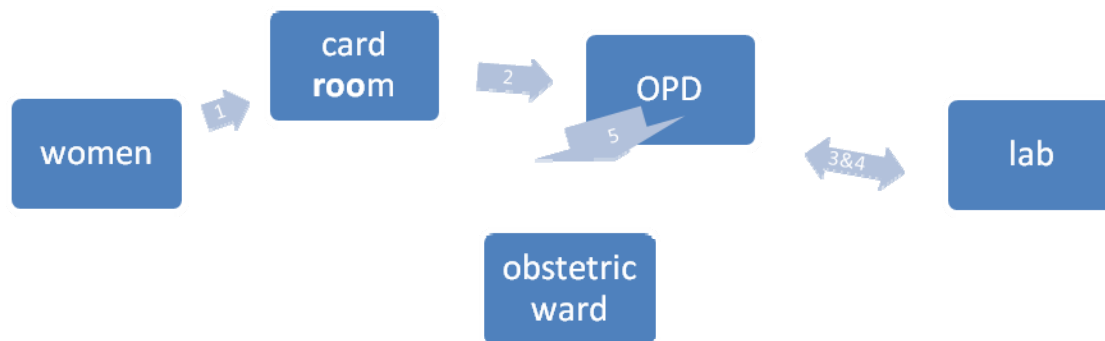
Thirty clients at CEmOC facility were interviewed for quality of services. Twenty-four clients were from out side the town where the hospital was founded while the rest 6 were from urban center. Eighteen clients were postoperative delivery, three abortions, two PIH, four puerperal

sepsis and three APH. All 30(100%) were satisfied with: privacy, interpersonal communication, getting all service or drugs at facility, and competence of professionals. However, 12 clients were dissatisfied with average waiting time before getting admission services. Moreover, one respondent provided her suggestions as “what if immediately we get the service just like during labor and delivery at separate room before admission. I gave birth here; at that time, the hospital guard let me take delivery ward by my relatives where I got all service. Nevertheless, after two weeks of my discharge, I developed generalized fever and abdominal distension. I returned back, the situation was not similar as of labor and delivery. I was made wait turn at card room then after I was seen at one class there and was sent to laboratory, in the afternoon I collected laboratory results and made to be admitted here”. The observed and reported by patients’ flow chart at CEMOC facility indicated below;

Case1, once laboring woman gate in to the hospital compound, she is immediately referred to delivery ward. Either her relatives or ward nurse withdraw card to her from medical registration room. She gets final decision at delivery ward.



Case2, Emergency obstetric cases (puerperal sepsis, preeclampsia and abortion): once she enters in to hospital compound, she confines to waiting area until she withdraws card from main registration unit. She waits her turn at adult out patient department .after being examined, out patient department`s physician sends her to laboratory room. After revisiting the out patient department`s physician, she is admitted.



Concerning cesarean section deliveries and direct obstetric case fatality rate; of 562 cases, cesarean sections were performed for 447 cases excluding 18 leparatomy and 6 hysterectomies. In this study the estimated proportion of cesarean sections delivery and met need for EmOC in the zone were $(447/41346*100\%)$ 1.08% and $(413/6201*100\%)$ 6.66% respectively.

Table 4, Diagnosis and treatment by cesarean section, South West Shoa zone, 2010

Diagnosis or causes for admission And treatment with cesarean section	Frequency	Percent
APH	32	7.2%
ELECTIVE	1	0.2%
FETUSE CAUSE	57	12.8%
OBSTRUCTED LABOR	231	51.7%
OTHERS	17	3.8%
PIH	29	6.5%
PPH	3	0.7%
PREVIOUS C/S	74	16.6%
UTERINE RUPTURE	3	0.7%
TOTAL	447	100.0%

During the study period 14 mothers died from direct obstetric cause; Uterine rupture 4(28.1%) ,PIH 3(21.4%), hemorrhage (APH and PPH) 3(21.4%) sepsis 2(14.3% but no death from abortion 0(0%) the crude direct Obstetric case fatality rate at the facility is $14/413*100\%(3.39\%)$

Table5. Frequency of maternal death due to direct obstetric complications, South West Shoa zone, 2010

CAUSES OF DEATH	Frequency	Percent
APH	1	7.1%
OBSTRUCTED LABOR	2	14.3%
PIH	3	21.4%
PPH	2	14.3%
PUREPERIAL SEPSIS	2	14.3%
SEPTIC ABORTION	0	0.0%
UTERINE RUPTURE	4	28.6%
Total	14	100.0%

6. Discussion

Even if, all health centers (12) are expected to provide basic emergency obstetric care and all women are advised to give birth at health institutions, but none of the health centers are providing complete set of signal functions. This is not comparable with other survey. In country where the coverage was said to be low; in Uganda in 2003, among the theoretically expected health centers to provide BEmOC 4% of them were providing the services (18). In this study, as indicated above only parenteral oxytocine and new born resuscitation services are provided at all health centers. On the other hand, parenteral administration of anticonvulsant is the neglected emergency obstetric services at all surveyed health centers.

Service providers reason out why they didn't provide the services: Majority (91.7%) out of 12 respondents are not performing parenteral administration of anti convulsion due to policy issue (45.5%) and lack of drug and supply 36%. Similarly, due to lack of supply and drugs 50% and 25% of respondents respectively do not perform assisted delivery using vacuum extractor and administer parenteral antibiotics. This result coincides with MPS survey result in Ethiopia in 2005 showed that 32.2% of respondents were frustrated from shortage of supply and drugs to manage obstetric complications. In general, the availability EmOC is low when compared with WHO standards (>5:500,000population), Or Five or more EmOC facility per five hundred population of which, one should be CEmOC facility (3).There fore, at least two CEmOC and eight BEmOC are needed to satisfy the WHO recommendation.

Pertaining to patterns of utilizations of EmOC, 562 obstetric cases with mean age of 26.5 \pm 5.6 were registered. Among these 562 registered cases 413(80%) were due to five major direct obstetric complications. Based on the estimation of WHO/UNICEF, 15% of pregnancies end up with complications. Hence, in this survey, 6201 emergency obstetric complications are expected. However, only 413 were served for direct emergency obstetrics. Thus, the met need for EmOC at the zone is (6.66%). This result is concurrent with other prospective –population base study in six western African countries (6%) (3) And other study in `prolonged labor in rural Ethiopia: community based study, among 181(15%) prolonged labor only 8.8% referred to hospital (6). other survey at four regions of Ethiopia the met need for complication were <4 % There fore, the

met need for EmOC is low when compared with the standard i.e. it must be $\geq 100\%$ (3). One can observe that still majority of obstetric cases are not accessible to EmOC services.

Residentially, urban are the most utilizes of EmOC facility. As indicated above majority 114(22.4%) of cases are from Woliso town where the services is the nearest to and the rest were from out side the town. A study in northern Ethiopia (11) urban were more utilizes EmOC facility than rural for life-saving treatment. As well as 2005, EDHS showed that majority of institution delivers were from urban. This might reflect inequity in getting service at reasonable geographical location.

Concerning quality of services, this study categorized quality in to integration of services from the grass root i.e. community level by HEWS to ZHD, patients satisfactions at the EmOC facility, service process using cesarean sections rate and service output using obstetric case fatality rate.

Accordingly, EmOC was poorly integrated to safe motherhood services at all level. MCH focal persons at zonal as well as at woreda level don't include signal functions or EmOC to their supervision checklist majority family health focal persons (75%) defined EmOC as if it were c/s and blood transfusion alone and EmOC service is only possible at hospital level. Similarly, at the community level 34 HEWs did not know what EmOC is? , and they did not use any standard criteria or WHO partograph to early diagnosis & referral of obstructed labor as well as for tracing obstetric complications.

Patients' satisfaction to EMOC services: almost all patients were satisfied with the CEmOC facility services i.e. in availability of ordered drugs at the facility, interpersonal communication, privacy and professional competency of the facility's staff. However, PIH and puerperal sepsis cases were complaining of prolonged average waiting time before getting admission services. As indicated at diagram above, intra facility patients flow is different among obstetric emergency cases. Only women in labor and delivery are considered as an emergency and get special care starting from the hospital gate. Nevertheless, other emergency obstetric cases (puerperal sepsis, PIH and septic abortion) are admitted to ward via out patient department process. This is well explained by one who gave birth at hospital and revisited it for sepsis after two weeks of delivery. She was happy with direct admission to ward and cooperation of hospital staffs starting

from guard. But, she claimed fault about long waiting time before admission for sepsis. If this condition is relieved; in addition to patients' satisfaction, it is possible to reduce institution obstetric case fatality rate by reducing average waiting time and reducing the time interval between admission and starting treatment. As evidence, In the university hospital of Zaria, Nigeria, the interval between admission and treatment was reduced by 57% (from 3.7 to 1.6 hours) between 1990 and 1995. During this time, the case fatality rate (combining direct and indirect causes) decreased by 21%, from 14% to 11% (6). In this study, based on the above facts obstetric complications are fairly integrated to safe motherhood services; patients wait long time unnecessarily to get services.

Service quality related to cesarean sections rate and direct obstetric case fatality rate: the life saving obstetric procedures; cesarean section, laparotomy and hysterectomy were performed for 447, 18 and 6 patients respectively. The proportion of cesarean section to total expected births in the zone is 447(1.08%) while the WHO standard is 5%-15 % (3). This result is similar with community based study in Northern Ethiopia (11) and EDHS 2005. This implies that still majority of women are inaccessible to life saving obstetric surgery.

Pertaining to direct obstetric fatality rate; as indicated above 14 deaths were registered which made the direct obstetric case fatality rate $(14/413 \times 100)$ or 3.4%. This rate is high when compared with the WHO standard (<1%). Uterine rupture is the leading cause of death 4 (29%) followed by PIH 3 (22%) and hemorrhage 3 (22%). Although the met need for EMOC is low, the case fatality rate among utilizes is high. Unless, this condition is improved, problems may persist.

No death was registered from abortion complications; it is unique when compared to other hospital based studies. This could be due to revised national abortion law and high coverage of abortion services at all health centers and accessibility of family planning services. The first two causes of death are comparable with study in Black lion Hospital.

In conclusion, this study shows that there are serious challenges facing delivering mothers in south west shoa zone. Despite regular policy updates and efforts to improve service delivery, the number of either BEmOC or CEmOC facilities is not adequate in the zone. Or still majority of women don't have an access to life saving emergency obstetric care and dying from preventable obstetric complications. Though, the NGO hospital tried all of its bests including maternity waiting shelter, the use of services was below the standard. Moreover, among utilizes the obstetric case fatality rate is alarming.

7. Recommendations:

There has to be routine monitoring mechanisms of EmOC services by using appropriate indicators. And, EmOC services should be integrated to other safe mother hood services at all level of health institutions. Similarly, appropriate case definitions and management protocol at all health centers should be in place accordingly

There is a need for further assessment of pre-service training, policy and other possible barriers to implement EmOC services. At facility level, Strong triage is mandatory, and all EmOC cases should get services with in reasonable time and place.

References

- 1 Royston Erica, A.S., ed. Preventive maternal death, 1989, Geneva
- 2 WHO.UNICEF. UNFPA and The World Bank, Maternal mortality in 2005: estimates developed by WHO, UNICEF, UNFPA, and the World Bank, 2007; Geneva
- 3 W.L.C.-i.-P.D. monitoring emergency obstetric care: a handbook. 2009: France
- 4 Berhane, Y., D.H. Mariam, and H. Kloos, eds. The epidemiology and ecology of health and Disease in Ethiopia, 3rd ed. 2005, Ethiopia
- 5 EDHS 2005: Addis Ababa, Ethiopia and Calverton, Maryland, USA
- 6 Berhane, Y., Women`s Health and reproductive outcome in rural Ethiopia.2000, Umea
- 7 2007 Annual Report of St. Luke Catholic Hospital and College of Nursing: Woliso
- 8 WHO, UNICEF and UNFPA, Guidelines for Monitoring the Availability and Use of Obstetric Services, October 1997: New York, USA
- 9 FMOH, Essential health services package for Ethiopia. 2005;Addis Ababa, Ethiopia
- 10 Berhan Yifru, A.A., Emergency obstetric performance with emphasis on operative delivery outcomes: Does it reflect on the quality of care? The Ethiopian Journal Of Health Development, 2004. 18(2): p. 96-106.
- 11 Nigussie Mesfin, H.D., Mitike Getnet, Assessment of safe delivery service utilization among women of childbearing age in north Gondar zone, North West Ethiopia. The Ethiopian Journal of Health Development, 2004 18(3): p. 145-152

12. Engender Health, *Quality improvement for emergency obstetric care tool book*. 2003: New York, USA
13. Orinda V et al. A sector-wide approach to emergency obstetric care in Uganda, *International Journal of Gynecology and Obstetrics*, 2005, 91(3):285-291.
14. Bennett TA et al. Pregnancy associated hospitalizations in the United States in 1991 and 1992: A comprehensive view of maternal morbidity. *American Journal of Obstetrics and Gynecology*, 1998, 178(2):346-354.
15. Ali M et al. Emergency obstetric care in Pakistan: Potential for reduced maternal mortality through improved basic emergency obstetric care services and access. *International Journal of Gynecology and Obstetrics*, 2005,91(1):105
16. Bang RA et al. Maternal morbidity during labor and the purpuriem in rural homes and the need for medical attention: A prospective observational study in Gadchiroli,India. *British Journal of Obstetrics and Gynecology*, 2004, 111(3):231-238.116.
17. Deneux-Tharoux C et al. Post partum maternal mortality and caesarean delivery, *Obstetrics and Gynecology*, 2006,108 (3 Part 1):541-548.

STUDY INFORMATION SHEET

Investigator: Tilahun Diriba: School of public health, Addis Ababa University, medical faculty
I am a Masters student in Reproductive health at school of public health AAU-medical faculty.
As part of this degree, I am undertaking a research project leading to a thesis.

The project I am undertaking is assessing the availability, utilization and quality of emergency obstetric care services in southwest shoa zone.

A cross-sectional institution based survey will be conducted in 12 districts of South West Shoa zone of Oromia region. Delivery, gynecological and obstetric ward and surgical registration log books will be reviewed. In depth interviewe, semi-structured and structured questionarie will be employed. The purpose of this study is to determine patterns of utilization and quality of care and to explore factors that affect provision of emmergency obstetric care services.

Should any participants feel the need to withdraw from the project, they may do so without question at any time before the data is analyzed. Just let me know at the time. There is no direct benefit for you as a participant. However, the information from this study will eventually help the concerned bodies to better understand the level of availability, utilization, and quality of emergency obstetric care services and to make decision and take its part to improve emergency obstetric care to reduce maternal mortality.

It is envisaged that the questionnaire will take about half of an hour to complete.

Confidentiality will be provided to the fullest extent possible by law. Responses collected will form the basis of my research project and be put in to a written report on an anonymous basis. It will not be possible for you to be identified personally. Only grouped responses will be presented in this report.

If you have any questions or would like to receive further information about the project, please contact me at phone 0911 54 59 51

IRB, phone 011555 33178 AAU-SPH

TILAHUN DIRIBA

SIGNATURE-----

ODEEFANNOO QORANNOO

Qorataa: Xilaahuun Diriiibaa : Mana barumisaa Fayyaa Hawassa, Yunivarstii Addis Ababaatti damee yaalaa. Anni, yunivarstii Addis Ababaa damee yaalaatti ,barataa fayyaa wal-hormaata digrii lammaffaatii. Haluuma ulaagaa digrii kanatiin waraqaa qo`annoo eebaafi ta`u hojacha jira. Qorannooni kunis ammamtaa,fayyadamaa fi qulqulinaa tajaajila muddaa ulfaan wal-qabatuu Godina Shawaa Kibaa lixaa xinxaaluuf.

Qorannoon kuun yeroo tokkof aanaallee kudha lammaa keessatti gageefama. Haali adeemsa qorannos; galmmeewwan da`umsaa,tajaajilaa ciischa dibeewwan sala hormaattatii fi dhibaa da`umsaa akkasmummas galmeen tajaajila baqaqsanni hodhuu ni qayabatama. Gaafleen kan akka gaafi fii deebii afaanii fi waraqaa irratti kan qophayee hirmaatootafii ni dhiyaata. Kaayoon qorannoo kana fayyadamiinaa fi qulquliina tajaajila mudaa ulfaa baruu fi gufuuwwan tajaajila mudda ulfaa addan bassuf.

Qorannoo kana irratti hirmachuuf fedhii keessan guutu ni barbachiisa. Akkasummas yeroo barbaadan eeyyama tokko malee addan kuttufs mirgaa guutu ni qabdu . Hirmaana keesaniif fayyaddamnii kalatiin argatan hinjiru.Haa ta`u malee, odeefannoon qo`annoo kana irra argamu nammoonni tajaajila muddaa ulfaa akka hubannoo ga`aa qabataniif fi du`atti hadholii irrisuu irratti akka gahe issanii bahanu ni gargara.

Hicitiin hirmatoota gutumaan gututii haala seera jiruun eegamadha. Deebiwwan keessan bu`ura qo`annoo kootitti, innis haala hin beekamneen gaabasa keessatti bareefama. Tuutaan waan baraa`ee gabafamuuf eenyumaa keessan addan baasuun hindanda`amu.

Qo`annoon kun ulagaa digrii lammaafa gutuun isaa edda dhugomeen booda kutaa mana dubisaa ni ta`a.

Qo`annoo kana ilaalichisee gaafii kamiyyu yoo qabataan akkasumas odeefannoo dabalataa yoobarbadaan lakkoofsa bilblaa armman gaditiin na`argachuu ni dandeesu,

Kaan koo 0911 54 59 51 Kan bordii instituutii qo`annoo AAU-MF,SPH

INFORMED CONSENT FORM

I have been given and have understood an explanation of this research project.

I have had an opportunity to ask questions and have them answered to my satisfaction.

I understand that I may Withdraw myself (or any information I have provided) from this project (before data collection and analysis is complete) without having to give reasons or without penalty of any sort.

I understand that any information I provide will be kept confidential to the researcher and the supervisor the published results will not use my name, and that no opinions will be attributed to me in any way that will identify me.

I agree to take part in this research

Signed-----

Name of participant-----

Date-----

Guca waliigaltee

Qabiyeen qo`annoo kana natti himamee naaf galeetti jira. Caraan akkan barbadetti gaafii gaafadhuu fi deebii debsuu danda`u naaf keenameti jira. Yeroon barbadee osoon sababii hindhiyessin akkaan addabii tokkoo malee hirmaana koo addan kutu hubadheera. Jechoon koo hundinuu akka iciitiin qabamus hubadheera. Qoratoonis maxansaaf akka maqaa koo itti hin fadamnee fi yadiin kamiyyuu akka naan adda basee hin ibsineedha.

Qo`annoo kana irratti hirmachuuf fedhii koo ta`uu ni ibsa

Malatoo-----

Maqaa hirmaataa-----

Guyyaa-----

GENERAL: for data collectors and supervisors

Interviewer arranges for a private setting to conduct interview.

Questionnaire ID #	
Name of Zone/district <ul style="list-style-type: none">• total population of district• crude birth rate	
Name of health facility <ul style="list-style-type: none">• tel. number• type and• owner ship	
Date of data collection	
Name of data collector	
Signature	
Name of supervisor	
Signature	

EmOC signal functions

Answer the following questions about EmOC signal functions by reviewing facility registers, through observation interviewing health workers in the maternity ward and other departments. Record whether the function has been performed in the past 3 months, and if not, why it has not been performed.

Performance of signal functions

Ask and check if no, ask the reason among the listed five alternatives and others.

(1) Administer parenteral antibiotics 0. No 1. Yes

a. Training issues

b. Supplies, equipment, drugs issue

c. Management issue

d. Policy issues

e. No indication

(2) Administer uterotonic drugs (e.g. parenteral oxytocine, ergometrin, and misoprostol)

0. No 1. Yes

a. Training issues

b. Supplies, equipment, drugs issue

c. Management issue

d. Policy issues

e. No indication

(3) Administer parenteral Anticonvulsants for pre-eclampsia and eclampsia (e.g. magnesium sulfate)

0. No 1. Yes

a. Training issues

b. Supplies, equipment, drugs issue

c. Management issue

d. Policy issues

e. No indication

(4) Perform manual removal of placenta 0. No 1. Yes

a. Training issues

b. Supplies, equipment, drugs issue

c. Management issue

d. Policy issues

e. No indication

(5) Perform removal of retained products (e.g. manual vacuum aspiration, dilation and curettage)

0. No 1. Yes

a. Training issues

b. Supplies, equipment, drugs issue

c. Management issue

d. Policy issues

e. No indication

(6) Perform assisted vaginal delivery (e.g. vacuum extraction, forceps delivery)

0. No 1. Yes

a. Training issues

b. Supplies, equipment, drugs issue

c. Management issue

d. Policy issues

e. No indication

(7) Perform newborn resuscitation

(E.g. with bag and mask)

0. No 1. Yes

a. Training issues

b. Supplies, equipment, drugs issue

c. Management issue

d. Policy issues

e. No indication

(8) Perform blood transfusion 0. No 1. Yes

a. Training issues

b. Supplies, equipment, drugs issue

c. Management issue

d. Policy issues

e. No indication

(9) Perform surgery (e.g. caesarean section)

0. No 1. Yes

a. Training issues

b. Supplies, equipment, drugs issue

c. Management issue

d. Policy issues

e. No indication

2. Check list

1.Are all of the following available in labor &delivery room/maternity ward for 24 hrs,7days a week	Yes	NO
✓ Examination table		
✓ Adjustable light		
✓ Blood pressure apparatus &stethoscope		
✓ fete scope		
✓ speculum		
✓ vacuum ✓ MVA kits, E&C sets ✓ Suction machine ✓ Ambu bag ✓ Partogram ✓ Weight scale adult/baby		
2.are all the following basic obstetric drugs according to the national drug policy available 24hrs,7 days/week		
✓ Analgesics (paracetamol, pethidine...)		
✓ Anesthetic (general, local)		
✓ Anticonvulsants (magnesium saliphate, diazepam		
✓ Anti hypertensive (hydralazine...)		
✓ Uterotonic (oxytocine, ergometrine)		
✓ Parentral antibiotics(ampiclline,genatamicne,metrindazole		
3.Emmergency supply		
✓ Adhesive tape		
✓ Antiseptic solution		
✓ Iv fluid, iv sets		
✓ Water for injection		

✓ Suturing needles, chromic gut 3.0 and 2.0		
✓ Surgical glove		
4. instruments-processing		
✓ Working autoclave		
✓ Deep utility sinks and running water		
✓ Brushes		
✓ Detergents		
✓ Chlorine		
✓ basins		
✓ Utility glove		

3. Record review for delivery logbook

Reg.NO	Age	address	parity	ANC	Ges.age	Mod.delivery

4. Record review for obstetric complications

Reg.NO	age	address	parity	Cause of admission	Out come

3. client/family interview

Name ----- age----- parity-----ANC history-yes/no , Date of admission-----

1. What was the medical problem that brought you to this facility? What happened to you before you came to here?
2. What made you come to this particular facility?
3. How did you get here? (What means of transport did you use?)
4. What happened from the time you first arrived at the hospital gate to the time you first saw health workers
5. How long did you wait before seeing health worker for the first time?
 - a. Do you think this wait acceptable or too long?
 - b. If it was too long, please explain
6. After you saw health worker for the first time, how long did you wait before someone gave you medical treatment for the problem?
 - a. Do you think this wait acceptable or too long?
 - b. If it was too long, please explain
7. When you were being examined, did the health worker explain to you what he or she was doing and why?
8. Do you feel you received enough information about your condition and about what the health worker was doing?
9. Have you been given information about what to do once you leave the facility regarding
 - a. How to take care of yourself at home? Yes/No
 - b. What to do if your condition gets worse? Yes/No
 - c. What follow up is needed? Yes/No
10. Where the medication and supplies you needed available at the facility? Yes/No
If not, what happened? Did this delay your treatment at all?
11. Do you feel your privacy was respected by the staff? Yes/No, please explain
12. How did the facility staff treat you? Please explain
13. Did you feel that staff respected your opinion? Did the staff listen to your suggestions or opinions if you made them? please explain

14. Are you satisfied with care you received?

15. What do you like best about this hospital?

16. What suggestions do you have for improvement?

17. Is there anything else you would like us to know about your experience here?

For administrative (WorHO head , vice or MCH focal person)

Name of health institution-----

Name of interviewer-----age -----sex-----position-----

1. Are all your health facilities providing maternity services? No/yes

2. If yes, what are the services that the health centers provided?

3. Have you heard about EmOC? NO/YES

3.1 If yes, what is emergency obstetric care?

3.2 Is EmOC provided in your health centers? No/yes

3.3 If yes, please list the services that are provided as an emergency for obstetrics in your health centers/hospitals

- a.
- b.
- c.
- d.
- e.
- f.
- g.
- h.
- i.

4. Do you supervise the health centers in your catchment area? No/yes if yes, how frequents?

5. If yes, is your supervision checklist included EmOC? No/yes, check the previous checklist.

6. How do you evaluate maternity health care services (indicator)

7. Please, give any suggestions/ comment about emergency obstetric care services

HEALTH POST

Note for interviewer please, interview her at private setting

Name of district-----Name of health post-----

Name of interviewer-----, sex-----age-----year of working experience-----

1. Did you attend normal delivery? No/yes if yes

1.1. What are your criteria to admit laboring mother to deliver at your health post?

List

1.2. How did you follow labor until delivery?

1.3 For how long do you follow labor until delivery in your health post(average hours)

1.3. Did you refer laboring mother to near by health center? yes/no

1.4. What are your criteria to refer? list

2. Do you know WHO partograph? No/yes if yes

2.1 where did you heard or learns (pre service training, on job training, colloquies or other)

2.2 Did you ever use partograph?

3. Have you heard about emergency obstetric care ,1,no 2,yes

If yes,

3.1. Please, give at list three examples

- a. -
- b. -
- c. --

3.2 How do you response to any obstetric complications?

4. Checklists

Ser no	variables	Yes/no
1	partograph	
2	Delivery bed	
3	B/P apparatus with stet scope	
4	thermometer	
5	Surgical glove	
6	Disposable glove	
7	Fetoscope	
8	Instrument processing	
	Basin(3)	
	chlorine	
	Heavy duty glove	
	Clean water	
9	Delivery sets	
10	Possible light source at night	