

PATTERN, MATERNAL AND PERINATAL OUTCOME OF INSTITUTIONAL REFERRAL CASES AT MIZAN AMAN GENERAL HOSPITAL, SOUTHWEST ETHIOPIA



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REFERAL CASES AT MIZAN AMAN GENERAL HOSPITAL**

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ABSTRACT

Background: Every two minute, one maternal death occur somewhere in the developing world. Every year over half a million woman die during pregnancy and following childbirth. Almost three-quarters of maternal deaths are due to direct causes, clustered around the time of labour and delivery, and are preventable with timely access to skilled emergency obstetric care. An estimated 15% of all pregnancies will encounter complications; 7% will be serious enough to require referral to a higher level of care. The first referral level is defined as district or sub-district hospital, to which a woman at high risk is referred prenatally or sent for emergency obstetric care. So, linking the different levels of care was an essential element of primary health care (PHC) from the very beginning.

Objectives:-the study was try to identify the pattern, maternal and perinatal outcomes of institutional referral at Mizan Aman general hospital

Methods: Facility based retrospective study was conducted at Mizan Aman General Hospital ,Mizan Aman town, Ethiopia from June 1 2013 to June 12014G.C. All referral cases in the specified time were included in the study. Secondary data was collected using structured checklists by trained data collectors. The collected data was checked for its completeness, entered, edited, cleaned and the mean, mode, proportion, percentage & variance of different variables analyzed by SPSS.

Results: In this study most of the studied groups age fall under the category 18-35 (96 %). Out of all data scrutinized obstetric referral cases prolonged labor (40%), fetal distress (16%), PROM (16%) and IUFD (8%) comes in the first line of referring reasons. Unlike the frontiers, while the others like, previous CS history (6%) CPD (4%), PIH (4%) in a descending order are the less likely referring reasons in the locality of Aman-Mizan General Hospital. Besides, among 450 cases referred to Aman-Mizan general hospital from nearby health facility during one year period with this finding revealed, the utilization of pantograph were seen as low as 80%. Of all the cases, undertaken as professional intervention, Spontaneous vaginal delivery (SVD) takes the first place scoring 252(56%). While, vacuum delivery 18 cases (4%) forceps 46 cases (10.2%), hysterectomy 10 (2.2%) destructive delivery 9 (2%) cesarean section 115 (25.6%) methods were used accordingly. In this study only two (0.44%) of maternal death were caused by PPH. Though there is improved ANC and delivery care PPH still pose great threat to maternal mortality.

Conclusion and recommendations: The most frequent referral case during this study period were prolonged labor, fetal distress, PROM and IUFD and there were two (.22) maternal and 36(18%) perinatal death. Almost half referral and hospital diagnosis is in agreement. Early referral, a well linked feedback and skilled care during antenatal, labour and delivery put as recommendation.

Key words: referral, prolonged labor, fetal distress, cesarean section, hysterectomy.

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Acronyms and Abbreviations

ANC	Antenatal Care
APGAR	Appearance, Pulse Rate, Grimace, Activity And Respiratory Rate.
CS	Cesarean Section
CSA	Central Statistics Association
CPD	Cephalo Pelvic Disproportion
EDHS	Ethiopian Demographic Health Survey
Emoc	Emergency Obstetric Care
ERCS	Ethiopian Red Cross Society
FGAE	Family Guidance Association Of Ethiopia
GA	Gestational Age
GC	Gregorian Calendar
GYN	Gynecology
HCT	Hematocrite
HIV	Human Immune Deficiency Virus
ICU	Intensive Care Unite
IEOS	Integrated Emergency Obstetrics And Surgery
LNMP	Last Normal Menstrual Period
LUSTCS	Lower Uterine Segment Cesarean Section
NGO	Non Governmental Organization
NICU	Neonatal Intensive Care Unit
PMR	Per Natal Mortality Rate
VBAC	Vaginal Birth After Cesarean Section
WHO	World Health Organization
PROM	Premature Rupture Of Membrane
MAGH	Mizan Aman General Hospital
APH	AntePartumHemorrhage

CHAPTER.1. INTRODUCTION

1.1 Background

Every two minute, one maternal death occur somewhere in the developing world. Every year over half a million woman die during pregnancy and following childbirth. Maternal mortality is a tip of iceberg. For every maternal death, there are 20_30 woman who suffers sever morbidity.(1)

Almost three-quarters of maternal deaths are due to direct causes, clustered around the time of labour and delivery, and are preventable with timely access to skilled emergency obstetric care. (EmOC)[1].An estimated 15% of all pregnancies will encounter complications; 7% will be serious enough to require referral to a higher level of care (2)

The term referral is used in different ways: for instance, it is used to indicate the advice of a health worker to attend a higher-level health unit, whether followed or not. Here we use the term referral for any upwards movement of health care seeking individuals in the health system (Figure.1). There are many ways to do this with respect to pathway, timing and urgency. Thus, we can categorize referrals in pregnancy and childbirth as (1) institutional or self-referral, depending on the involvement of first line services; (2) antenatal, delivery or postnatal referral; and (3) elective or emergency referral [3].

The first referral level is defined as district or sub-district hospital, to which a woman at high risk is referred prenatally or sent for emergency obstetric care, and where the following essential services should be available: (1) surgical obstetrics, (2) anesthesia, (3) medical treatment, (4) blood replacement, (5) manual procedures and monitoring labor, (6) management of women at high risk, (7) family planning support and (8) neonatal special care . Most countries have different types of first line facilities (e.g. dispensary, health post, basic health unit) or intermediate levels of care; however, in practical terms these provide usually similar levels of maternity care and are not qualified to manage obstetric complications adequately [4].

So, linking the different levels of care was an essential element of primary health care (PHC) from the very beginning. The referral system was meant to complement the PHC principle of treating patients as close to their homes as possible at the lowest level of care with the needed expertise (5). As emphasized by the (WHO 1994), this back-up function of referral is of particular importance in pregnancy and childbirth, as a range of potentially life-threatening complications require management and skills that are only available at higher levels of care.

1.2 Statement of the Problem

Among the Millennium Development Goals, achieving the goal for maternal health (MDG5) poses the greatest challenge in Sub-Saharan Africa, to which Ethiopia contributes considerably. It has been reported that Ethiopia is one of the six countries that contribute about 50% of the maternal deaths; the others being India, Nigeria, Pakistan, Afghanistan and the Democratic Republic of Congo. Maternal mortality (MM) is mostly affecting the developing countries. Forty-seven percent of global MM occurred in Africa, with the highest rate in sub-Saharan countries. Ethiopia has designed a number of policies and strategies to improve maternal and reproductive health [7].

A publication in the Lancet on global maternal mortality trends provides more optimistic figures for Ethiopia both in terms of decline in maternal mortality ratio [MMR = 590 (358 – 932)] and improvement of rank among sub-Saharan African countries (28 out of 46 countries in the list, in 2008) [7]. The 2010 maternal mortality rate per 100,000 live births for Ethiopia was 470(8).

Ethiopia is one of the countries which have the highest number of maternal mortality in the world [9]. From these, half a million women die as a result of pregnancy and child birth each year (10).

The commonest cause of maternal death are Obstructed labor, Hemorrhage, pregnancy induced hypertension, Sepsis and unsafe abortion. One essential element of primary health care is maternal and child health which includes skilled assistance during pregnancy and child birth [11].

All women need to be able to reach emergency care in a timely way if they develop a complication during labor. However, globally it is estimated that 80% of rural women and 25% of urban women who need a life-saving obstetric intervention fail to receive it. To change this, women must have access to good quality health services, within a health system that functions effectively from the community to the first line health facility and to the facility able to provide comprehensive EmOC. Women, their families and communities also need to understand and value the services available (12).

The referral system is an essential component of district health system, it is particularly important in pregnancy care and child birth for providing access to emergency obstetric care in the first line facilities. However, referral patterns, as reported from referral hospital in developing countries show that the actual use of a referral system for obstetric care is inversely related to professional need assessment (13). In spite of formal referral systems have been proposed as a strategy to improve access to secondary care.

Little is known about referral patterns in Ethiopia, despite access to health care being a key health service problem (14) and referral being an integral part of the Primary Health Care (PHC) model (15). The implementation of referral systems can be problematic, sometimes leading to overloading of hospitals with inappropriate referrals (16). Conversely poor compliance with the referral can lead to under-use of secondary care by those in greatest need [17].

Interventions to improve access and use of the referral system target different elements of the referral chain. Priority should be given to the quality of obstetric care at referral level and this need to be monitored and improved.

To reduce maternal mortality and morbidity at the same time delivery quality health service a hospital should know the cases and complications referred to its facility and management constraints during service delivery. This is what most hospitals in Ethiopia fail to address and at the same time the proper linkage with the different referring center with supportive feedback is important not to overload the facility with inappropriate referral and to deliver proper care at each facility with its proper ability of care giving and made clients get the proper care at their immediate vicinity.

In this study the experience of laboring mother referral and gaps identified and more effective actions will be objectively recommended in providing a clinical practice based on scientific evidence and proper referral system care.

1.3 Significance of the study

In general maternal & neonatal morbidity and mortality in developing countries especially in Sub-Saharan country are very high. Ethiopia as a member of sub Saharan African countries contributes a huge number in maternal & neonatal morbidity and mortality; to reduce this and to achieve the millennium development goal the country works hard in a multi directional way. This includes the accessibility of comprehensive obstetric care in health institutions-; In order to achieve this a good referral pattern and proper linkage of health facilities at different level should be available.

Hospitals should have base line audit of referred cases to their facility at the same time their outcome in their management in order to assess the progress through time for further study and intervention. There is no study conducted at Mizan Aman General Hospital to evaluate cases referred to labor ward and their outcome. Therefore, it is important to do this research to provide background data for further study and forward some recommendations based on the findings.

CHAPTER.2. LITERATURE REVIEW

The term referral is used in different ways: For instance, it is used to indicate the advice of a health worker to attend a higher-level health unit, whether followed or not. Here we use the term referral for any upwards movement of health care seeking individuals in the health system (Figure). There are many ways to do this with respect to pathway, timing and urgency. Thus, we can categorize referrals in pregnancy and childbirth as (1) institutional or self-referral, depending on the involvement of first line services; (2) antenatal, delivery or postnatal referral; and (3) elective or emergency referral [3].

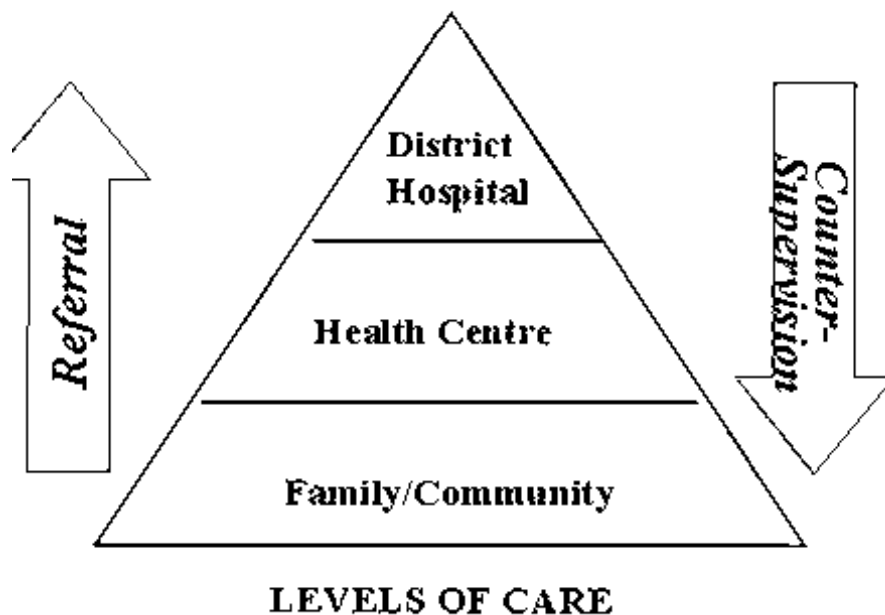


Figure 1. The health care pyramid at district level [Adapted from the Mother-Baby Package (WHO 1994)].

The following data on pregnancy-related referral in Tanzania provide an overview of levels and categories of referral in a rural African district (20). Based on the analysis of 415 hospital maternity in-patients, the following referral pattern was observed (values as percentage of all maternity admissions; percentage of expected birth in the catchment area in brackets):

- Self-referral 70% of all maternity admissions (15% of all expected births) vs. institutional referral 30% (6%)
- Referral for delivery 84% (18%) vs. antenatal referral 16% (3%)
- Elective referral (including referral for general safety reasons) 98, 8% (20, 8%) vs. emergency referrals 1, 2% (0,3%). Similar observations have been reported from a rural district in Nepal (21) and Burkina Faso with population-based rates of emergency referrals of 0,4% and 0,7% respectively(22).Reports from a teaching hospital in Ghana 82% self referrals and 2% emergencies referrals among hospital deliveries (23). A high proportion of self referrals (80%) have also been observed in Kenya (1996). Thus, self-referral for delivery - often without specific medical reason - is the most common mode of referral, while institutional referral is less frequent and emergency referral is very rare. From a professional point of view, this skewed referral pattern results in an inappropriate use of referral level care by by-passers of first line services. Measures such as disincentives (e.g. fees) for self-referrals and incentives for institutional referrals have been suggested (1988), but are problematic in the context of informed decision making [9].

In the study conducted in Angola on audit of referral cases in two different times the total number of births and referrals respectively admitted to hospitals during the two study periods are in 1996 from May to June in sambizanga 629, 50 (7.4%),palanca 331, 13 (3.8%) ,cazenga 1,483, 335(18.4%), from december1998 to febrwary1999 sambizanga 465, 41 (8.1%) palanca 156, 17 (9.8%)cazenga 1,131, 371 (24.7%) respectively. Mean age was 24.1 years in both periods of the study. Young women, primiparas and grand multiparas women are among categories usually regarded at high risk of pregnancy complications. Women <20 years of age constituted36%,primiparous women 43% and grand multiparas women (_ 4 previous births)32% in the first period. The corresponding figures in second period were 29%, 40% and 22% respectively [24].

In a study conducted in one of university hospital in India includes total of 1750 cases referred from rural areas were admitted 87.6% of cases (1533 cases) were in the age group of 15-30 years & 12.40% (217 cases)were in the age group of above 31 years of age . Out of 1750 cases 33.53% were primiparas, 49.79% (i.e. 775 cases) were multiparas , While grand multiparas forming high risk group were 16.68% (i.e. 292 cases) in the referred cases. Majority of cases 96.68% belonged

to low socioeconomic status while 3.32% (i.e. 58cases) belong to middle group. Majority of cases 80.4% (i.e. 1407) were illiterate with 16.51% educated and 3.08% graduate [25].

The following data indicates reason of referral. In Angola on audit of referral cases done in two different time at the same hospital shows reasons for referral of obstetric emergencies in Luanda during two periods of referral Prolonged labor 45 (28.7%) in 1996 and 28 (29.2%) in 1998/9 Haemorrhage 23(14.6%) in 1996, 11(11.4%) in 1998/9, previous CS 16(10.2%) in 1996 and 7(7.3%) in 1998/9, hypertension/preeclampsia 28(17.8%) in 1996, 13(13.5%) in 1998/9, no abnormal presentation and fever in 1996 but 3(3.1%) mal presentation and 2(2.1%) fever in 1998/9 no fetal distress in 1998/9 but 3(1.9%) in 1996, no PROM in 1996 but 7(7.3%) in 1998/9 and in 1996, 37(23.6%) not specified and 16(16.7%) in 1998/9 not specified, in 1996, 5(3.2%) has no adequate data (15). In both periods the most common reason for referral is prolonged labor. Post-maturity and high blood pressure were the commonest reasons for referral. Actual complications of pregnancy were much more common reasons for referral than risk factors (e. parity). Only one referral mentioned anemia despite anemia prevalence of 78% in women of reproductive age [24]. So this shows us patients with prolonged labor, post maturity and high blood pressure need special attention and also referring centers may need professional training since the study didn't mention whether the referral diagnosis match the diagnosis at the referred center.

The most common case were obstetric 1283(73.31%) followed by abortion and related causes 183(10.46%). medical and related causes 284(16.22%) in a study conducted in one of the university of India. Out of 1750 majority 97.3% were unbooked. [25]

Concerning the outcome after referral Caesarean sections were performed in 17 out of the 156 cases giving a rate of 10.9 per 100 patients (95 % CI 6.5 to 16.9). There were 10 per natal deaths amongst the 71 recorded deliveries representing a per natal mortality rate of 141 per 1,000 total births (95% CI 70 to 244) [24].

In the first period Caesarean section (CS) was performed in 13% of referred cases uterotonic treatment was used in 15% and vacuum extraction in 2%. The corresponding figures for the second period were 30%, 24% and 4%, respectively. Only the difference in CS is statistically significant ($p < 0.005$). The proportion of referred women who were left with neither medical evaluation nor treatment mentioned in the patients' records decreased from 45% in the first period to 27% in the second ($p = 0.007$). The quality of pantographs differed to the advantage of the SPPs when

compared to the overburdened delivery wards of the hospitals at both periods of the study. The poor pantographs quality of hospitals disclosed at the audit initiated further education in the proper use of pantographs. This was reflected in the second period with a significant increase in quality over time at both levels. In the first period there were 27 deaths among the traced 157 referrals, giving an over-all case fatality rate of 17.8%. In the second period no maternal death was registered. Fetal outcome was not addressed properly in the first period. In the second period, there were eleven stillbirths (12.0%) [24].

In a study conducted in India indicates among the 466 women referred to the obstetric unit in the CMCH, 234 (50.2%) had a normal vaginal delivery, 92 (19.7%) had operative vaginal deliveries including forceps and vacuum extraction, and 122 (26.2%) women underwent caesarean section (Table II). Forty-one (8.8%) babies had APGAR scores of <8. There were 17 (3.6%) stillbirths and one early neonatal death. Many stillbirths were complicated by pregnancy-induced hypertension, intrauterine growth retardation and congenital anomalies. There were no maternal deaths among the referred patients. Some outcomes could not be ascertained due to missing records (26).

In another study conducted in one of university hospital of India .Type of Interference required vaginal delivery 629, 35.94% Forceps 30, 1.71% Internal Podalic Version with Breech Extraction 16, 0.91 Lower Segment Caesarean Section 616, 35.2% Caesarean Hysterectomy 30, 1.71%. Repair of rent in Lowe Uterine Segment 16, 0.91%Manual Removal of Placenta 26, 1.41% Suction &Evacuation 177, 10.11%. Laparotomy 36, 2.05%.Miscellaneous 174, 9.22%.LSCS rates are higher in referred cases[22].Maternal mortality higher in referred cases.(23) Maternal mortality rate is 5.37% i.e. there were 94 deaths out of 1750 cases and maximum mortality were due to toxemia followed by postpartum hemorrhage and sepsis & most of deaths occurs within 24 hours of admission[25].

In Nigeria the maternal deaths 59,000 annually rank second to Indians 17,000 & out of this figure it is estimated that Maternal deaths due to PPH is 20% with 1000 maternal death per 100,000 live birth (27). Per natal mortality rate of 50.78% (i.e. 682 per natal deaths were those indicating a much higher per natal mortality rate among referred cases).So this show us especial attention should be given to referral cases in an effort taken place to reduce maternal mortality and morbidity.

CHAPTER.3.OBJECTIVE

3.1 General objective

The objective of this study was to evaluate pattern, maternal and perinatal outcome of institutional referral cases at Mizan Aman General Hospital

3.2 Specific objective

- 1 .To identify the pattern of referral case
2. To determine the ratio of different referral cases
3. To determine the referring health center and hospital diagnosis agreement and linkage of the hospital and the referring health centers
4. To identify the most intervention taken place
5. To evaluate maternal outcome
6. To evaluate perinatal outcome

CHAPTER.4. STUDY METHODS AND MATERIAL

4.1. The study area and period:

The study was conducted at Mizan Aman General Hospital from June 1, 2013 to June 1, 2014 G.C, in Mizan Aman town, SNNPR, Southwest Ethiopia, which is about 574 kilometers from Addis Ababa. The zone has 33 health centers which are government owned, and Mizan Aman General Hospital which is used as general hospital and owned and run by the Government (Mizan Aman Town health Administration Office, 2011). The total population of the Bench Maji zone is 760,314; of which 381,449 are males and 378,865 are Females. The hospital gives a general service for different parts of the zone. The average delivery service in a month in 2011 was about 100(26) The MAGH was established in 1979 E.C and it is the only general hospital in the zone that service for many peoples. It has 136 beds. The Hospital has labor and delivery room which give services for parturient mother. The room operates with multidisciplinary staffs (Gynecologist, surgical officers students, midwives and clinical nurse) through all the days of weeks. The services are provided free of charge for all laboring mother.

4.2. Study design

Institutional based retrospective cross sectional study design that was employ quantitative method supported by observational, document and content analysis qualitative method was employed.

4.3. Population

4.3.1. Source population

The source population was all pregnant women who come to Mizan Aman hospital labour ward.

4.3.2 Study population

The study population was all pregnant women cases who come with referral paper to Mizan Aman General Hospital labor ward from June 1 2013 to June 1 2014 fulfilling inclusion criteria.

4.4 Inclusion and exclusion criteria

4.4.1 Inclusion

The records of all pregnant women who come with referral paper within specified study period were included.

4.4.2 Exclusion

All self referral and institutional referral out of specified study period

4.5 Sample size determination and sampling technique

4.5.1 Sample Size

The sample size for the study was 450 pregnant women who are admitted to labour ward after being referred from health facility within specified period.

4.6. Variable

4.6.1. The dependent variables

The possible fetomaternal outcome of cases managed after referral

4.6.2 Independent variable

-Age

-Gravidity/Parity

-APGAR score

-High workload of labour attendants

-Mode of delivery (e.g. instrumental delivery)

-Labour attendants

-professionals involved at admission of cases

4.7. Data collection instrument and pretesting

The data for the study was collected using pre-tested structured checklists which have socio-demographic variables, obstetric history and the outcome of patient and maternal and neonatal outcome. The questionnaire was prepared in English. Before the actual data collection, the questionnaire was tested on 5% of the total study that come with referral during study period.

4.8. Data collection procedure

After the number and card numbers of institutional obstetric referral cases in the study period identified from patient card room data was collected from patient record cards (charts), registration books, referral paper and anesthesia charts available by structured checklists using trained data collectors and duplicated data was treated according to its importance to the paper in the way not against the ethical consideration of the institution and clients and the suitable one was selected.

4.9. Data processing and analysis

The collected data was checked for its completeness, entered using epidata and exported to SPSS-16 database program for analysis after edition. Frequency distributions of both dependent and independent variables were worked out with dummy table and the association between independent and dependent variables was computed using chi square. To determine factors for referral patient management outcome multivariable binomial logistic regressions was used. A 95 % confidence interval and 5% level of precision were utilized to check for association between variables. Finally, the data was described and presented using tables and charts.

4.10. Ethical considerations

Letter of ethical clearance was obtained from Research Ethical Committee of Jimma University and from the coordinator of integrated emergency obstetrics and surgery and submitted to the hospital administration to get permission to use client charts and different records. Client charts returned back after data collection. Client information used only for the study purpose and name of clients were not used.

4.11. Data quality assurance

To keep the quality of data detail trainings given for data collectors, day to day activities during data collection; supervised and evaluated errors was corrected by the investigator before the following day activity. And to have good quality health professionals was involved in data collection using structured checklists.

4.12. Limitations of the study

Since the study is based on secondary data, some information's may not be complete. The study was not showing long term complications as long as such information was not being available in the records.

4.13. Definition of technical terms

Gestational age- is calculated from the LNMP or fundal height that was documented on the card, if not from the duration of amenorrhea documented from mothers recall & is rounded to the nearest weeks. Amenorrhea of 9 months was taken as 37-42 weeks gestation for all mothers.

Birth weight- is taken from the record in delivery note & it is rounded to the nearest two decimals in kg & categorized according to the standard classification.

Cesarean section – delivery of the fetus, membrane and placenta after 28 weeks of gestation by opening of abdomen and uterus.

Gravidity: - the total number of pregnancies includes abortion, ectopic pregnancy and any other pregnancies. (twin pregnancies considered as one pregnancy).

Parity: - number of deliveries after 28 weeks of gestation including IUFD and still birth (abortion, ectopic pregnancies and etc are not included).

GA: - duration of pregnancy in weeks.

Prolonged labor- And a labor lasting >18 hours

Obstructed labor- is failure of descent of fetal presenting part in maternal birth canal for mechanical reasons despite the presence of adequate uterine contractions

Ante partum hemorrhage-Genital tract bleeding from 28th week of gestation till delivery of the fetus

Post partum hemorrhage- Excessive bleeding following delivery (>500 ml in vaginal delivery, >1000 ml in CD and twin vaginal deliveries, >1500 ml following cesarean hysterectomy) or a drop in Hct > 10% from baseline or derangement in vital sign following bleeding after delivery.

Premature rupture of membrane: is rupture of fetal membranes at least an hour before onset of labor

Antenatal care- is the health care given to a pregnant woman so as to ensure the birth of healthy baby with minimal health risk to the mother.

Intrauterine fetal death- is fetal death after 28 weeks of gestation but before the onset of labor. 2.

Preeclampsia: is primarily defined as gestational hypertension plus proteinuria

Eclampsia: The onset of convulsions in a woman with preeclampsia that cannot be attributed to other causes is termed eclampsia. The seizures are generalized and may appear before, during, or after labor

Anemia - hemoglobin concentration less than 11 gm/dl in the first and third trimesters and less than 10.5 gm/d in the second trimester.

4.14. Plan for dissemination of findings

The result of the study is presented to Jimma university community as part of IEOS thesis; and it was disseminated to JU College of public health and medical science, coordinating office of Integrated Emergency OBS and Surgery, Regional health bureau, Zonal health offices, to the targeted health facility and to NGOs working on this area. Further attempt was made to publish it on national and international scientific journals.

CHAPTER.5. RESULT

During the study period, there were a total of 1783 deliveries in MAGH and a total of 450 cases were referred from the surrounding health facility to Mizan Aman general hospital.

5.1. Socio-demographic and obstetric character

Most of them fall under the age category of 18-35 (96 %) (Table.1). Statistical test revealed those age group bears significant difference ($\alpha=5\%$).

Table 1 Age Group And Their Respective Frequency And Proportion Of Study Group In Aman-Mizan General Hospital, South West Ethiopian, 2014.

No	Age of study group		
	Age group	Frequency	Proportion
1	<,18	0	0
2	18-35	432	96
3	>35	18	4
		450	100

Around 48(10.67%) urban and 252(56%) rural woman follow ANC (table.2) & 90(20%) gravid one,306(68%) gravid 2_4,54(12%) are grand multiparas (>4)(table.3).Four hundred thirty two(96%) are singleton pregnancy and 18(4%) are twin pregnancy.

5.2 Fetomaternal status on referral

Most of the mothers 315(70%) in labor for<24 hour,99(22%) >24 hour and 36(8%) was not in labor during referral & among these one(.22%) was in shock. Thirty six(8%) was fetal heart beat absent. When we come to referral diagnosis,180 (40%) prolonged labor, 72 (16%)fetal distress,18(4%)CPD,9(2%)APH,72(16%) PROM, 27(6%) previous CS, 18 (4%) PIH, 9 (2%)mal presentation,36 (8%)IUFD. Two hundred and sixty one (58%) iv line secured during referral. And 387(86%) was referred by midwifery nurse,18 (4%) clinical nurse,36(8%) are health officers.(table.4).

Table 2 Residence Area and Antenatal Care Provided To Study Group In Aman-Mizan General Hospital, South West Ethiopian, 2014.

No	Residence area	Antenatal care (ANC)					
		booked		unbooked		Total	
		Frequency	Proportion	Frequency	Proportion	Frequency	Proportion
1	Urban	48	10.67	24	5.33	72	16
2	Rural	252	56	126	28	378	84
	Total	297	66	153	34.00	450	100

Table 3 Gravidity of Referral Cases To Aman-Mizan General Hospital, South West Ethiopian, 2014.

No	Gravida	Frequency	Proportion
1	1	90	20
2	2-4	306	68
3	>4	54	12
	Total	450	100

5.3. Fetal and maternal condition at admission

Most of the mothers 360(80%) were in labor for <24 hour, 90 (20%) >24 hour after admission. Among these 9(2%) was in shock, 90 (20%) was not in labor. Thirty six (8%) was fetal heart beat absent. When we come to admission diagnosis, 72 (15%) prolonged labor,90 (19%) fetal distress,28(6%) CPD, 16 (3%) OL, 81(17%) PROM, 27(6%) previous CS, 18 (4%) PIH,18 (4%) Malpresentation, 36 (8%) IUFD, 10 (2%) uterine rupture, 9 (2%) twin pregnancy, 63 (14%) others . Three hundred and fourteen (69.78%) IV line secured during admission. And 288 (64%) was admitted by IEOS,162(36%) are midwifery nurses(table.4). Three hundred and thirty labor was followed by partograph fig.2.Two hundred and fifty two gave birth by SVD, 18 vacume delivery, 46 forceps, 115 CS, 10 destructive.fig.1

Table 4 Maternal and Fetal Status Of Referral Cases In Aman-Mizan General Hospital, South West Ethiopian, 2014.

Maternal and	Status	Referral cases	Admitted cases
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fetal status					
		Frequency	Proportion	Frequency	Proportion
Pregnancy	1. Single	432	96.00	432	96.00
	2. Twin	18	4.00	18	4.00
	Sub total	450	100.00	450	100.00
Duration of labor	1. <24	315	70.00	360	80.00
	2. >24	99	22.00	90	20.00
	3. Not in labor	36	8.00	0	0.00
	Sub total	450	100.00	450	100.00
Fetal heart beat 1	1. 100-180	369	82.00	45	10.00
	2. >180	45	10.00	369	82.00
	3. Not present	36	8.00	36	8.00
	Sub total	450	100.00	450	100.00
Fetal heart beat 2	1. 100-180	17	94.44	17	94.44
	2. >180	1	5.56	1	5.56
	3. Not present	0	0.00	0	0.00
	Sub total	18	100.00	18	100.00
Maternal status	1. In labor	377	83.78	351	78.00
	2. In shock	1	0.22	9	2.00
	3. Stable	72	16.00	90	20.00
	Sub total	450	100	450	100
Diagnosis	1. Prolonged labor	180	40.00	72	16.00
	2. Fetal distress	72	16.00	90	20.00
	3. CPD	18	4.00	28	6.22
	4. OL	0	0.00	16	3.56
	5. APH	9	2.00	0	0.00
	6. PPH	0	0.00	0	0.00
	7. PROM	72	16.00	81	18.00
	8. Previous CS	27	6.00	27	6.00
	9. PIH	18	4.00	18	4.00
	10. Mal presentation	9	2.00	18	4.00
	11. IUFD	36	8.00	36	8.00
	12. Others	9	2.00	63	14.00

	13. Uterine rupture	0	0.00	10	2.22
	14. Multiple pregnancy	0	0.00	9	2.00
	Sub total	450	100	450	100
Referral care	1. Others	9	2.00	314	69.78
	2. None	180	40.00	27	6.00
	3. IV line secured	261	58.00	109	24.22
	Sub total	450	100.00	450	100.00
Referring professional	1. Mid wife	387	86.00	162	36.00
	2. Clinical nurse	18	4.00	0	0.00
	3. health officer/GP	36	8.00	0	0.00
	4. IEOS	0	2.00	288	64.00
	5. Gynecologist	0	0.00	0	0.00
	others	9	0.00	0	0.00
	Sub total	450	100.00		100.00

Source of secondary data:

IUFD: intrauterine fetal death, CPD: cephalopelvic disproportion, OL: obstructed labor, APH: antepartum hemorrhage, PIH: pregnancy induced hypertension, PPH: postpartum hemorrhage, PROM: premature rupture of membrane, CS; cesarean section, IEOS: integrated emergency obstetric and surgery.

Fig 2. Mode of delivery in Mizan Aman General Hospital South West Ethiopia, 2014. 19

Fig 3. Labor flow by pantograph in Mizan Aman General Hospital South West Ethiopia, 2014. 19

5.4. Maternal outcome

Among 450 mothers receive care after referral 7(1.55%) blood transfused & there were 2(0.44%) maternal death. There are 10(2.22%) postpartum hemorrhage (table.5).

Table 5. post partum complication and fetal outcome *in Mizan Aman General Hospital South West Ethiopia, 2014. 20*

Fetal out come	Status		Frequency	Proportion
Postpartum complication				
	PPH		10	2.22
	Infection		0	0.00
	DVT		0	0.00
	Other		0	0.00
Fetal outcome Of singleton and Twin A of twin pregnancy	Alive (APGAR score)	0<x<7	135	30.00
		>7	279	62.00
		0	36	8.00
	Live but referred	0	0	0
	Weight in KG	<1500gm	0	0
		500-2500gm	9	2
		1500-4000gm	414	92
		>4000gm	27	6
		Sub total	450	100
Fetal outcome Of twin B in Twin pregnancy	Alive (APGAR score)	<7	4	42.86
		>7	5	57.24
		0	0	0
		Sub total	9	100
	Live but referred	0	0	0
	Dead	0	0	0
	Weight in KG	<1500gm	2	22.22
		1500-2500 gm	4	44.44
		2500-4000 gm	3	33.33

		>4000gm	0	0
	Sub total		9	100

Table 6. Maternal outcome and blood transfusion status in Mizan Aman General Hospital South West Ethiopia, 2014.

Maternal out come	Status	Frequency	Proportion
Maternal out come	Alive	448	99.56
	Dead	2	0.44
	Sub total	450	100.00
Mother blood transfusion	Yes	7	1.55
	No	443	98.45
	Sub total	450	100.00

5.5.Fetal outcome

Among the babies delivered majority of 414(92%) fetal weight belongs to 2500gm-4000gm, 27(6%) >4000gm, 9(2%) 1500gm-2500gm & 279(67.39%) have APGAR score >7,135(32.61%) <7

Table 7. Cross tabulation of fetal outcome to referral duration of labor in Mizan Aman General Hospital South West Ethiopia, 2014. 21

Referral Duration of labor * Fetal outcome Cross tabulation							
		Fetal out come				Total	
		Alive		Dead			
		Frequency	Proportion %	Frequency	Proportion %	Frequency	Proportion %
Referral Duration of Labor	<24	315	70	0	0	70	70
	>24	62	13.78	36	8.22	22	22
	Not in labor	36	8	0	0	8	8
Total		413	97.78	91.78	8.22	450	100

5.6. diagnosis match

Among 450 cases referred only 244(54.22%) case have diagnosis agreement between referring health center and the hospital.(table.8)

Table 8.diagnosis agreement between referring health center and Mizan Aman General Hospital,South West Ethiopia,2014

DIAGNOSIS	MATCH	MISMACH
Prolonged labor	63	107
Fetal distress	54	18
CPD	1	17
OL	0	0
APH	0	9
PPH	0	0
PROM	72	0
Previous CS	18	9
PIH	18	18
Mal presentation	9	0
IUFD	9	9
Twin pregnancy	0	9
uterine rupture	0	10
subtotal	244	206

Source of secondary data:

IUFD:intrauterinefetaldeath,CPD:cephalopelvicdisproportion,OL:obstructedlabor,APH:antepartumhemorrhage,PIH:pregnancyinducedhypertention,PPH:postpartumhemorrhage,PROM:prematu reruptureofmembrane,CS;cesarean section,IEOS:integrated emergency obstetric and surgery.

CHAPTER.6. DISCUSSION

Improving obstetric care is one key factor for the achievement of the millennium development goals concerning maternal and child mortality. Many programs have been initiated with this objective in mind. Earlier studies of barriers to implementation of health policies, including plan to improve obstetric care, show that there is a major shortfalls in the provision and utilization of services in a developing country such as Ethiopia. The five most common causes of maternal mortality are hemorrhage, sepsis, unsafe abortion, hypertensive disorder and OL. This can be effectively prevented by attendance at delivery by trained personnel and achieved by proper linkage of different referral levels.

In this study most of the studied groups age fall under the category 18-35 (96 %). In a similar way one research revealed, 87.6% (Manisha Bakliwal, 2013) almost the same figure but what matters was the age category have some difference. While other study is not in line with those findings, while in favor of disclosing most of the age groups room around_60% age 25_34 (L. O. Omo-Aghoja.etal 2010). In totality, though different age category used almost they sound the same result.

Out of all data scrutinized in the current study among all obstetric referral cases prolonged labor (40%), fetal distress (16%), PROM (16%) and IUFD (8%) comes in the first line of referring reasons. Unlike the frontiers, while the others like, previous CS history (6%) CPD (4%), PIH (4%) in a descending order are the less likely referring reasons in the locality of Aman-Mizan general hospital. In line with the current study a research conducted by _ Dujardin et al., 1995 disclosed the most important reasons for referral of obstetric emergencies in Luanda were Prolonged labor 45 (28.7%) Haemorrhage23 (14.6%), previous CS 16(10.2%), hypertention /preeclampsia 28(17.8%), no abnormal presentation and fever. However, in others type of finding conducted in Nepal 1998 reveals that the most common reasons of referral were Post-maturity and high blood pressure. Besides, Actual complications of pregnancy were much more common reasons for referral than risk factors (e.g. parity). In addition to this, only one referral case mentioned anaemia despite anaemia prevalence of 78% in women of reproductive age. However those reasons are expected because, the available skilled man power, material and equipment availability and access to the health facility across the target area were different.

Among 450 cases referred to Aman-Mizan general hospital from nearby health facility during one year period with this finding revealed, the utilization of partograph were seen as low as 80%. Which is a nearly 80% cases, while according to ethical procedure of delivery were not followed precisely. So, this might decrease the quality of delivery care, which highly imparts to not effective

utilization of professional man power in the area. This may shadow the overall service delivery. Of all the cases, undertaken as professional intervention, Spontaneous vaginal delivery (SVD) takes the first place scoring 252(56%). While, vacuum delivery 18 cases (4%) forceps 46 cases (10.2%), hysterectomy 10 (2.2%) destructive delivery 9 (2%) cesarean section 115 (25.6%) methods were used accordingly. The results of this study were in line with the findings of Sapre, and Joshi, 1999 reported that the type of Interference undertaken includes, vaginal delivery 629(35.94%), Forceps 30 (1.71%), Internal Podalic Version with Breech Extraction 16 (0.91), Lower Segment Caesarean Section 616 (35.2%) and Caesarean Hysterectomy 30 (1.71%). Besides, Repair of tear in Lower Uterine Segment 16 (0.91%), Manual Removal of Placenta 26 (1.41%), Suction & Evacuation 177 (10.11%) and Laparotomy 36 (2.05%). Though there is some difference in some data because they also incorporate gynecologic cases.

In this study only two (0.44%) of maternal death were caused by PPH. Though there is improved ANC and delivery care PPH still pose great threat to maternal mortality. Also absence of well functioning blood bank exacerbate the condition because both mother died before they get blood transfusion and those blood transfused was rescued. Contrary to our result Pandit, 1992 reported higher maternal mortality rate which is 5.37% i.e. 94 deaths out of 1750 cases and maximum mortality were due to toxemia followed by postpartum hemorrhage and sepsis & most of deaths occur within 24 hours of admission. Thus the rate of maternal mortality in Mizan Aman Hospital is far better than the higher mortality rate reported by Pandit 1992. This might be due to especial consideration given to pregnant mother in an effort made to decrease maternal morbidity and mortality as a country level.

Among the babies delivered majority of 414(92%) fetal weight belongs to 2.5-4kg, & 279(67.39%) have APGAR score >7, 135(32.61%) <7. More fetal death was recorded in a mother in labor for more than 24hour during referral.

Concerning referral and admission diagnosis match, there is 54.22% match. This is in line to Fuber AS, 2002 which show 57% agreement between referring health worker and the hospital health worker diagnosis. In contrary to this Strand RT, 2009 reported only two cases diagnosis were not in agreement among 157 referrals. These may show knowledge and skill gaps of health worker of the referring health center. There is also no feedback mechanism to the referring unit concerning the diagnosis and issues related to patient care. Some of the referral paper also not filled properly and not legible. Partographs also not properly filled in some clients that may be due to workload on the midwives.

CHAPTER.7. CONCLUSION AND RECOMMENDATION

7.1. CONCLUSION

Based on the finding of this study the following conclusions are forwarded

1. The commonest reasons for referral of obstetric cases Mizan Aman General Hospital during this study period were prolonged labor, fetal distress, PROM and IUFD.
2. Of all the cases, undertaken in Mizan Aman General Hospital during this study period as professional intervention were, Spontaneous vaginal delivery (SVD) takes the first place. Followed

by vacuum delivery, forceps, hysterectomy, destructive delivery and cesarean section methods were used accordingly.

3. Almost half of the referral and admission diagnosis was not match, also there is no formal linkage between the referring health facility and Mizan Aman General Hospital
4. Post partum hemorrhage is the reason for maternal death.
5. There are significant perinatal death among the referral cases..

7.2. RECOMMENDATION

1. The nurse midwives should work on the basis of protocols which had clear guidelines on when to refer early to the next obstetric referral unit.
2. Continued supervision, a well linked and feedback on the outcome of referred cases is necessary.
3. A well functioning blood bank and neonatal ICU unit is necessary.
4. The midwives would need hands-on training and refresher classes at frequent intervals.

5. Skilled care during antenatal and labour and delivery is mandatory.
6. Referral cases need special attention.

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ANNEXES

JIMMA UNIVERSITY
COLLEGE OF PUBLIC HEALTH AND MEDICAL SCIENCES
POST GRADUATE COORDINATOR OFFICES
DEPARTMENT OF IEOS

Informed Consent:

My name is _____. I am serving as a data collector for a the study done on outcome of hypertensive disorders of pregnancy conducted in Mettu Karl referral hospital by MSC in integrated emergency surgery student of Jimma university. I would like to inform you that your participation are very essential not only for the successful accomplishment of the study but also to gather relevant information from maternal record which will be helpful in improving the outcome of hypertensive disorder of pregnancy. To ensure confidentiality, maternal name will not be recorded on the questionnaire.

Do you agree? A, YES N, NO

Name and Signature data collector-----

Supervisors name and signature-----

Annexe.1.checklists

These format will be designed as a data collection tool for a research done on evaluation of referral labor cases to Mizan Aman Hospital from June1, 2013-june1,2014

BACKGROUND INFORMATION

NO	QUESTIONS	OBTIONS	
1.	Stated Age In Year	<18	
		18-35	
		>35	
2	Residence		
		Urban	
		rural	
3	Referring Health Center	name	km

Obstetric history

2.1	gravidity		
		1	
		2-4	
		>4	
2.2	parity		
		0	
		1-4	
		5-6	
		>6	
2.3	Gestational age in week		
		28-34	
		34-37	
		>37	
2.4	Ante natal care follow	yes	no
2.5	the answer for question 2.4 is yes ,where	here	
		Referring HC	
		other	

2.6	How many times	1-4	>4

3. REFERRAL AND MOTHER STATUS ON REFERRAL

3.1	Pregnancy	singleton	
		twin	
3.2	Duration of labor	<24	
		>24	
		Not in labor	
		Not stated	

3.3	Fetal heart beat	100-180	
		>180	
		Not present	Not stated
3.4	If pregnancy is twin fhb for TB	<100	
		100-180	
		>180	
		Not present	Not stated
3.5	Maternal status		
		In labor	
		In shock	
		stable	
3.6	Referral diagnosis	Prolonged labor	
		Fetal distress	
		CPD	
		OL	
		APH	
		PPH	
		PROM	

		Previous CS	
		PIH	
		Mal presentation	
		IUFD	other
3.7	What's done before referral		
		Iv line secured	
		Other medication	
3.8	Referring professional		
		Mid wife nurse	
		Clinical nurse	
		Health officer	
		other	

4.ADMISION DIANOSIS & MANAGEMENT

4.1	Pregnancy		
		singleton	
		twin	
4.2	Fetal heart beat		
		<100	
		100-180	
		>180	
		Not present	Not stated
4.3	If twin fhb of TB		
		<100	
		100-180	
		>180	

		Not present	Not stated
4.4	General status of the mother		
		In labor	
		In shock	
		stable	
4.5	Diagnosis at admission		
		Fetal distress	
		CPD	
		OL	
		APH	
		PPH	
		PIH	
		PROM	
		MAL PRESENTATION	
		IUFD	OTHER
4.6	Profession diagnosed at admission		
		Mid wife	
		Clinical nurse	
		GP	
		IEOS	
		gynecologist	
4.7	Labor followed pantograph		
		yes	no
4.8	Medical care		
		Iv line secured	
		Anti hypertensive	
		Induction or augmentation	
4.9	Mode of delivery		
		SVD	

		vacuum	
		forceps	
		destructive	other
		CS	
4.10	Duration of labor in time		
		<24 hr	
		24-48hr	
		>48hr	

5. MATERNAL AND FETAL OUTCOME

5.1	Postpartum complication		
		PPH	
		infection	
		DVT	other
5.2	Fetal outcome		
		alive	
		Alive but referred to pediatric	
		dead	
5.3	If the answer for 5.2 is alive APGAR SCORE		
		<7	
		>7	
5.4	If twin delivery, TB		
		alive	
		Alive but referred to pediatric	
		dead	
5.5	If the answer for 5.4 is alive APGAR		

	SCORE		
		<7	
		>7	
5.6	Fetal weight in kg ,TA		
		<1.5	
		1.5-2.5	
		2.5-4	
		>4	
5.7	If fetal outcome is twin, weight TB		
		<1.5	
		1.5-2.5	
		2.5-4	
		>4	
5.8	Maternal outcome		
		alive	
		dead	
5.9	Did the mother blood transfused		
		yes	
		no	

Name and signature of data **collector**-----