OBSTETRIC REFERRALS AT SAINT PAUL'S HOSPITAL MILLENNIUM MEDICAL COLLEGE (SPHMMC): PRE-REFERRAL CARE AND APPROPRIATENESS

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ABSTRACT

BACKGROUND: Referrals between health care facilities is crucial in emergency obstetrics care to ensure appropriate level of care to women and newborns. The timely decision and appropriate pre-referral care will significantly affect maternal and perinatal outcome.

OBJECTIVE: The aim of our study was to assess the pre referral care and referral appropriateness of mothers referred to SPHMMC.

METHODS: A cross sectional study was conducted that involved all mothers referred to SPHMMC for obstetric emergency from January 25 to March 5, 2017. They were interviewed at emergency department and the pre-referral care given and the process of patient transfer was assessed using a structured tool. Data was entered cleaned and analyzed using SPSS Version 22. Descriptive statistics and Pearson correlation was used to present results assess the relationship between referral and arrival diagnosis.

RESULT: A total of 1080 mothers were transferred to SPHMMC from BEmONC centers during the study period. Majority of clients 718(65.5%) were from outside Addis Ababa and 362 (33.5%) of clients were from Addis Ababa. Prolonged labor, PROM, PIH and abortions constitute the top referral diagnosis accounting for 21.8%, 16.5%, 10.4% &9.9% in that order.

Two thirds (68.6%) of the clients were transferred without prior notifications to the hospital. Most (96.5%) of those patients transferred with prolonged or obstructed labor were transferred without attachment of their Partograph. With regards to the intervention provided at referring health facility 170 (72.3%) of prolonged/obstructed labors were transferred without intravenous access line; 90 (75.4%) of patients with premature rupture of fetal membranes were not given antibiotics before referral, 89 (79.5%) of preeclampsia/eclampsia cases were not provided with magnesium sulphate as seizure prophylaxis and of those laboring mothers diagnosed to have fetal distress on referral, 45 (60.8%) were referred without securing intravenous line for resuscitation.

CONCLUSION AND RECOMMENDATIONS: We found that most clients were coming from non-catchment health facilities without prior notification. In the majority of cases essential pre-referral care were not initiated at the referring facilities for those women with obstetric complications. BEmONC facilities need to be strengthened to offer the required medical interventions to save lives at the site and during transfer of patients.

KEY WORDs: BEmONC, CEmONC, SPHMMC, Ethiopia.

(Ethiopian Journal of Reproductive Health; 2019; 11;2:10-16)

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INTRODUCTION

A referral system is the judicious transfer of patients from one care provider to another provider or level of care. Referrals between health care facilities are important in low-resource settings, particularly in maternal and child health, to transfer pregnant patients to the appropriate level of obstetric care1-3.

Maternal mortality continues to be a problem largely for poor women in low- and middle-income countries (LMICs) 2. Given that most maternal deaths occur during labour, delivery and the first 24 hours post-partum, an effective intra partum care strategy including emergency obstetric and newborn care (EmONC) services has been identified as a priority to reduce maternal deaths3-4.

Effective referral services are central to a program which aims to provide emergency obstetric care to save lives. It is known that reductions in maternal mortality and morbidity are not possible without an effective referral system for obstetric complications5. The capacity of different tiers of public sector health facilities in Ethiopia to function as EmOC facilities is varied, with some being Comprehensive emergency obstetric and newborn care (CEmONC) facilities, while others function as Basic emergency obstetric and newborn care (BEmONC) levels.

Given this variation, it is important that an effective referral system is in place to facilitate essential first line management at the first facility a mother attends, and efficient transfer to higher level care facilities when complications may necessitate. A dysfunctional referral system can contribute to a poor program impact on maternal and neonatal mortality outcomes. Referral can only be justified if the referral facility provides a reasonable level quality of care5. This study was conducted to assess the pre referral care and referral appropriateness of mothers referred to SPHMMC which is one of the tertiary referral hospitals in Addis Ababa.

METHODS AND MATERIALS: A cross sectional study design that employs interview and abstraction-based data collection was used. The study was done from August 2016 to March 30, 2017. Data collection was done from January 25 to March 5, 2017. Consecutive emergency obstetric cases referred to SPHMMC were taken for the whole one month. A total of 1080 patients presented to SPHMMC emergency obstetric unit in the specified time period and consenting to participate were interviewed. They were interviewed and their charts were reviewed and followed until discharge from the hospital for maternal and neonatal outcomes to be included in the second part of the study to be analyzed. Patients with lost charts, missed referrals and having prenatal care at SPHMMC and admitted to the ward electively were excluded from the study. Mid wife Nurses were trained, and data was collected using structured questionnaire. Data were collected on socio demographic characteristics, address of the participants, referring health facility, reason for referral, prior notification to the hospital, means of transportation on referral to SPHMMC, referral diagnosis, investigations done, treatments given before and during transfer, condition of the patient on arrival, arrival diagnosis and treatments given at SPHMMC. Data entry was also done side by side. The investigators were supervising the data collection process on daily basis.

The data were analyzed using the statistical package for social sciences (SPSS) version 22 computer software. Frequencies and cross tabulations were used to summarize descriptive statistics and, tables and graphs were used for data presentation. Ethical clearance was obtained from the institutional review board of SPHMMC.

RESULTS:

During the study period a total of 1080 obstetric patients were referred to the obstetric emergency unit. Among these 827(77.6%) were managed at SPHMMC hospital and 253(23.4%) patients were referred out due to reasons mostly lack of space. The mean age of the participants was 25.5±4.4; the youngest was 16 and the oldest 40 yrs.

Of the total referrals; 65.5% were from outside Addis Ababa mostly from surrounding Oromia region and 33.5% of clients were from Addis Ababa mostly from catchment health centers. Burayu and Sebeta are the two leading referring centers accounting for 16.2% and 15.5% of the total referrals respectively.

Basic investigations (blood group, HGB &HIV) were documented in the referral paper for 60% of clients. With this regard non-catchment BEmONC centers performed significantly better than the catchment centers (p-value<0.001).

Some sort of treatment given were mentioned on the referral paper for 75.6% clients. 75.6% of clients were transferred to SPHMMC in less than 1hr. The average time taken to transfer the patients was 1.98±.71hrs.

97.8% of laboring mothers in active phase of first stage were transferred without attachment of partograph. It is attached for 9.4% &1.1% of those from catchments and non-catchment centers respectively.

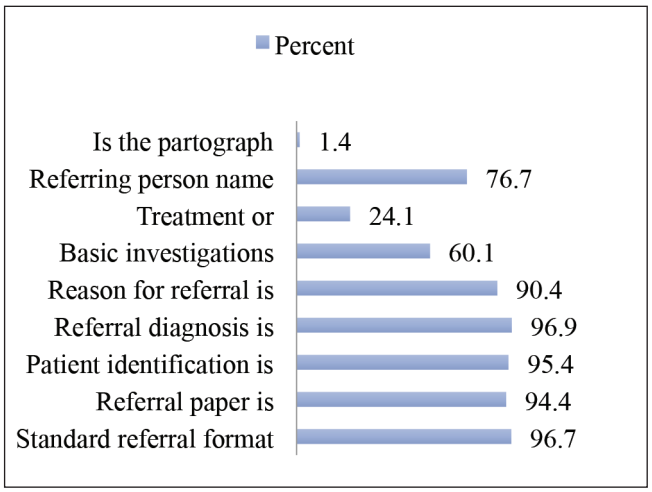

Figure 1. Referral form completeness of women referred to SPHMMC, Ethiopia

As shown in table 1, majority of the clients were referred due to lack of CEmONC and limited capacity of the health facility.

Table 1: Facility reason for referral of the patient

Reasons for referral	Frequency	Percent
Lack of blood	15	1.4
Lack of drugs and supplies	60	5.6
Lack of health personnel	22	2.0
No OR	19	1.8
Non-functioning OR	3	0.3
Beyond the capacity of health facility (no CEmONC)	944	87.4
Neonatal care is not available	10	0.9
Other	7	0.6

Only 339 (31.4%) of referrals were sent to SPHMMC with prior notification. 71.3% & 1.1% of the referred cases were sent with prior notification to the hospital from catchment and non-catchment health facilities respectively. 821(76%) of the patients were transferred to SPHMMC by public ambulances from the health facilities. However, 677(63%) of the ambulances had no resuscitation facilities.

Table 2: Mode of transportation of patients referred to SPHMMC

Modes of transportation	Frequency	Percent
Ambulance with resuscitation facilities	144	13.3
Ambulance without resuscitation facilities	677	62.7
Private vehicle	223	20.6
Own vehicle	36	3.3
Total	1080	100.0

The top 4 referral diagnosis were; prolonged /obstructed labor, premature rupture of the fetal membrane, PIH and abortion in that order. This is shown in table 3.

Table 3: Referral Diagnosis of patients coming referred to SPHMMC

Referral diagnosis	Frequency	Percent
Prolonged or Obstructed labor	235	21.8
Fetal distress	74	6.9
Severe Anemia	2	0.2
PIH/ Eclampsia	112	10.4
Abortion & related complications	107	9.9
Retained placenta	6	0.6
Fetal Malposition	56	5.2
APH	23	2.1
PPH	21	1.9
Septic patient	2	0.2
IUFD	15	1.4
Preterm labor	32	3.0
PROM	178	16.5
Ectopic pregnancy	7	0.6
Post term	83	7.7
Active first stage of labor	16	1.5
Previous Scar	14	1.3
Oligohydramnios	17	1.6
Twins Pregnancy	14	1.3
Other Diagnosis	66	6.1

Matching the referral diagnosis and intervention provided at referring health facility; 170 (72.3%) of prolonged/obstructed labors were transferred without intravenous access line; 90 (75.4%) of patients with premature rupture of fetal membranes were not given antibiotics before referral, 89 (79.5%) of preeclampsia/ eclampsia cases were not provided with magnesium sulphate as seizure prophylaxis, those laboring mothers diagnosed to have fetal distress on referral 45 (60.8%) were referred without securing intravenous line for resuscitation & 4 (57%) of ectopic pregnancies were referred without intravenous line access. This is shown in figure 2 below.

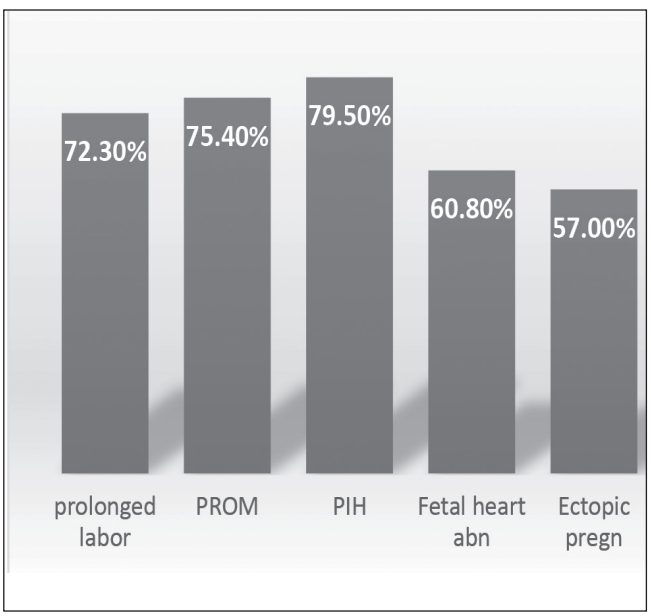

Figure 2: Proportions of referred patients not provided with the required intervention from referring BEmONC facility.

Table 4: Diagnosis on arrival to SPHMMC of clients (n=1080)

Arrival diagnosis	Frequency	Percent
Prolonged or Obstructed labor	426	39.4
Fetal distress	29	2.7
Severe Anemia	3	.3
PIH/ Eclampsia	130	12.0
Abortion & related complications	111	10.3
Retained placenta	11	1.0
PROM	143	13.2
Preterm labor	26	2.4
APH	28	2.6
PPH	15	1.4
Septic patient	1	.1
IUFD	17	1.6
Ectopic pregnancy	10	.9
Post term	44	4.1
Normal 3rd TM pregnancy	15	1.4
Oligohydramnios	10	.9
Hyperemesis	7	.6
False labor	7	.6
Others	47	4.4

The referral and arrival diagnosis correlates well (r=0.39, p=0.01). The majority of referrals were for delivery services 608 (80%). And of those gave birth at SPHMMC 77.3 % of them delivered by SVD; of which 71% were conducted at emergency obstetric unit.

Table 5: Mode of delivery of clients delivered at SPHMMC (n=608)

Modes of delivery	Frequency	Percent
SVD	470	77.3
Assisted breech delivery	5	0.8
Vacuum delivery	27	4.4
Forceps delivery	21	3.5
Cesarean section	85	14.0

DISCUSSION

This study shows that high numbers of referrals are made to the hospital beyond the managing its capacity which is shown by the high rate of referral out from the hospital due to lack of space to accommodate those referred in patients. This study also showed high numbers of delivery conducted at emergency obstetric unit.

In this study most referrals were from non-catchment BEmONC facility mostly from Burayu and Sebeta areas. These two centers are 15 and 20kms away from Addis Ababa. This delays the transfer and management of critical patients especially during the working hours due to high traffic jams in the streets of the capital. The high number of referrals from these two sites indicate that there is high demand for obstetric services and urges the concerned health bureau should avail CEmONC facilities in these areas so that cases benefit from better access and relieved from financial stresses[1,5].

Most referred mothers were for delivery services. The fact that most births were attended vaginally and most of them conducted at emergency outpatient unit indicating eminent delivery on referral of cases, may show lack of confidence to triage patients for referral by providers at BEmONC centers. All abortions were managed by MVA uterine evacuation. Attending normal delivery and uterine evacuation are the core BEmONC signal functions of the health centers which was found deficient in this study. Unavailability of CEmONC facility in the vicinity creates lack of confidence to the providers to keep laboring mothers at the centers. This is also shown in the study done by Austin et al in southern region of the country6. The above findings direct for the need of continuous support in the form of training, mentoring and supervision to providers at these specific sites and strengthening BEmONC facilities. In long run this study also directs for the need of CEmONC facility around these areas according to WHO and FMOH of Ethiopia standards[1,2,5,7,8].

The good thing shown by this study is that the referral recordings were well documented on the transfer of the patients and most referred mothers were transferred by ambulances and accompanying health professionals and this should be encouraged and continued[9,10].

The other gap identified in this study was the non-attachment of labor follow up chart partograph with the referral paper especially for those laboring mothers in active stage of labor. This may indicate some reluctance to use partograph for labor follow. WHO and FMOHE stressed on the utilization of partograph is one quality indicator of BEmONC services. It gives a summary of

progress of labor which is helpful for receiving facility for the next plan of management[1-4].

This study showed reason for referral of majority of the cases is due to limited capacity of the referring facility mainly unavailability of the CEmONC services in the centers and lack of drugs and supplies. This also directs to the need for well-equipped CEmONC facility in these specific areas.

Pre referral communication to the hospital was low as it is also a common problem seen in other studies[6, 7]. Most patients were referred to SPHMMC without notification and resulted in high referrals out from SPHHMMC posing tremendous stress on the staffs, the hospital and the patients in looking for space in other CEmONC facilities to accept those patients. Good numbers of BEmONC centers are sending patients without communication which needs more efforts to bring all centers refer patients with prior notification so that patient care is facilitated. Communication is also crucial for the referring health facility to get feedback and buffer the knowledge and skill with the hospital skilled providers[7].

In this study the top referral diagnosis were labor abnormalities, premature ruptures of the fetal membrane, hypertensive disorders of pregnancy and abortion in that order. These are the major reasons of referral for facilities lacking CEmONC services which is also a finding in other studies[8-10]. Obstetric complications like obstructed labor and PIH were missed more often by the health center providers while fetal distress & post term pregnancy diagnosis were over inflated when matched with the arrival diagnosis at SPHMMC. This study also showed there is low level of performing the seven BEmONC signal function by the providers in the referring health facilities which is shown by low levels of the needed interventions made to those referrals who need some medications according to FMoH guideline and WHO set standard for transfer of patients from one facility to another facility[1-3]. Pre referral interventions were quite below the minimum expectations. IV access was opened in less than one third of patients with prolonged/obstructed labour and antibiotics started in about 3% of the cases. In about 2/3rd of patients with PIH, there was no intervention. Those with APH were also managed sub optimally. All these show a significant deficiency in delivering BEmONC signal functions before referral. The possible reasons may be diverse, but the problem needs to be addressed seriously to reduce maternal and neonatal morbidity and mortality. Gap of knowledge in providing care were also reported in other studies. Need for supportive supervision may improve these services[6,7,11]. The relatively good practice observed in this study is the access to the central circulation in patients with PPH (88%). But this is expected to be 100%, it should be improved.

CONCLUSIONS AND RECOMMENDATIONS

There was high referral of obstetric emergencies beyond the managing capacity of the hospital. Most referrals to SPHMMC were from non-catchment health centers where continuous coaching and support is not available. Referral paper contents were deficient in having ANC follow up investigations, partograph when necessary

Abnormalities of labor, premature rupture of the fetal membrane, hypertensive disorders of pregnancy and abortion are the main reason for referrals of patients which shows more demand of CEmONC facilities particularly at surrounding health facility especially for Burayu and Sebeta area. As there was suboptimal performance of the BEmONC signal functions, linkage should be created between the referring BEmONC and SPHMMC for mentoring and giving continuous support and feedback for the centers.

FUNDING

St. Paul's Hospital Millennium Medical College has funded this research.

CONFLICT OF INTEREST

The authors declare no conflict of interest for this study

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