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## Original article

# Reasons for referrals and time spent from referring sites to arrival at Tikur Anbessa Hospital in emergency obstetric: A prospective study

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## Abstact

**Background:** Problems associated with emergency obstetrics referrals often cause serous life threatening conditions.

**Objective:** The objective was to determine the reasons and conditions in emergency obstetrics referrals and the time spent in the process of referral.

**Methods:** A prospective study was conducted in a Federal Referral and University Teaching Hospital (Tikur Anbesa Hospital) in Addis Ababa. The data were collected from the referral notes and by interviewing.

**Results:** The Hospital had received 496 emergency referrals of which 459(92.5%) were from within Addis Ababa city and 37(7.5%) from outside. A mean delay time from arrival at referring sites to arrival at Tikur Anbessa Hospital was four and half-hours (two hours 48 minutes at referring site plus one hour and 42 minutes of referral-arrival interval). In 86% of cases, the reasons for referral were non-medical.

**Conclusion:** Referrals from hospitals within the city were mainly for non-medical reasons and late. These referring hospitals can render themselves an effective obstetric care if conditions are improved. [Ethiop. J. Health Dev. 2001;15(1):17-23]

## Introduction

Referral systems instituted without appropriate protocols that indicate when, where and how to refer and transfer patient are bound to face problems during implementation because of disagreement between hospitals and delivery center-staff management (1). Moreover, ensuring access to medical treatment in case of obstetric complication needs to consider "time" factor because the onset of the problem and initiation of appropriate management makes a difference to the final outcome. For some of the complications like severe hemorrhage, a few minutes matter to save life, while for others, hours or even days may be tolerable but with the prognosis getting worse as time elapses (2). In view of the poor prediction of antenatal risk assessment (3,4), the best way of reducing maternal and neonatal morbidity and mortality is anticipation of possible occurrence of emergency obstetrics situations and to be prepared to recognize early and refer timely. Delay in the decision to look for medical care by the patient and her relatives are influenced by their perception of the quality of management and humane approach in the health institutions. Minimizing the causes of delays to emergency obstetric care significantly decrease maternal and neonatal morbidity and mortality. The delays occur at the following three levels (1):

- Delay in seeking medical care which is influenced by factors like socio-cultural, accessibility and perception or previous experiences about the health facility(ies).
- Delay in reaching the health facility after decision is made due to lack of communication and transportation.

- Delay in receiving appropriate care at the health facility due to staff insensitivity, lack of appropriate resources or poor organizational setups that is not conducive for emergency care.

In obstetric emergencies, malfunctions at anyone level may cost lives and need to be addressed seriously. Establishing effective referral system include educating the community about danger signs during pregnancy, labor and puerperium; improving access to emergency care units; upgrading the peripheral facilities to provide a better care nearer to the community; and improving emergency management capability for obstetric complications in existing referral facilities.

In Ethiopia, obstetric conditions are very bad and the majority of cases these deaths are preventable (58) Cost effective interventions are feasible and the technology exists even within the limited resources available. Among other measures to reduce serous morbidity and mortality is institute a good emergency obstetric referral system (6). Establishment of a good referral system needs to have agreed goals, objective, standard protocols, performance targets and regular review sessions (9). It requires the essential functional links with referral centers and delivery units. Referral notes that accompany the patient should contain detailed information to the referral center and back.

Since the last two years, Addis Ababa administration health bureau was trying to implement a referral system in the city. However, some obstetric referrals to Tikur Anbessa hospital are still late and in poor clinical conditions. The objective of this study was thus to determine the reasons and conditions of emergency obstetric referrals. The study also attempted to see time spent at the referring health unit, how the patients and relatives were transported and time spent to reach Tikur Anbessa Hospital after referral. It is considered to be the major part of third delay model.

## Methods

Obstetric and Gynecology Department of Faculty of medicine located at Tikur Anbessa federal referral hospital accepts and manages obstetric emergency patients (referred or not). The department is the main training unit of the faculty for both undergraduate medical students and residents in Obstetric and Gynecology with about 50 beds for Obstetrics including delivery couches. This prospective study was conducted from June 21 to September 21/1999 (for 3 months). The study populations were all obstetric patients whose gestational age was 28 or more weeks from last normal menstrual period until a week after delivery and who came to Tikur Anbessa hospital carrying emergency referral note from other health institutions.

A questionnaire consisting of questions related to patient's identity, reasons and conditions of referral were prepared and filled by on duty and managing residents. Time spent in the process of referral at various stages was also estimated and recorded. The arrival time was recorded at Tikur Anbessa referral registration room. The duration of stay at referring health institution was estimated by the patients in most cases and by relatives in few. The information was obtained primarily from the referral note. When the required information is not available on the referral form, patients were interviewed after proper explanation and obtaining verbal consent. All, except five referred, patients were managed in Tikur Anbessa Hospital following routine procedure for obstetric emergency cases. The data were entered daily into Epi Info version 6 computer program. The same program was used for analysis.

## Results

Four hundred and ninety-six (496) emergency obstetrics patients with referral note were seen by the hospital during the study period. Four hundred and eighteen (84.3%) of the referrals were directly addressed to Tikur Anbessa Hospital. About 13% were addressed "To any other hospital". Four

hundred fifty-nine (93%) of them were referred in labor. Table 1 showed the sociodemographic characteristics of the referred patients. Their age ranged from 15 to 41 years with a mean of 25.6 years. The age range between 20 and 34 years accounted for 82% of the referrals. The teen age group and those above 35 years were 10 and 9 percent respectively. By occupation 335(67.5%) were housewives and 68(13.7%) were office workers. Two hundred and seventy-one (54.7%) were nullipara and 25(5.0%) were grand para.

Table 2 illustrates that 459 (92.5%) of the referrals were from health institutions within Addis Ababa and 37 (7.5%) from outside. About 96% of the Addis Ababa referrals were from the four government hospitals while the rest were from Health centers and private institutions. Debrezeit hospital accounted for 73% (27/37) of the referrals from outside Addis Ababa. Among the total 496 referral forms, general practitioners filled 209 (42.1%), residents 84 (17%), interns 76 (15%)

and the rest by other health workers. Obstetric first aid was given to 27 (5.4%) patients at referring health institutions. The referring health institution contacted Tikur Anbessa Hospital before sending 5 (1%) patients and health personnel accompanied the same number of patients. Lack of skilled manpower was 31% of which anesthetist accounted for 92% of the problem. Shortage of beds for admission and supply materials accounted for 32% of which 85% were claimed to be due to lack of beds to admit. Operation rooms related reasons were 17%. The non-functioning Operation Room without specific reason is predominant. Other reasons like "for better management" were 68 (13.7%), and for 22 (4.4%) no reason for referral was mentioned. The two common reasons for referrals that make more than 55% were lack of beds and anesthetists - both of about equal contribution. (Table 3).

Referral within one hour accounted to 61.9% (284/459) where as 10.5% (48/459) were referred after more than six hours in the referring health institutions within Addis Ababa. The mean was two hours and 37 minutes. Those from out of Addis Ababa, 68% stayed more than 6 hours in the referring health institutions. The referral-arrival time interval ranged from 15 minutes to 66 hours with a mean of 1 hour and 42 minutes.

The main means of transportation from the referring health institution to Tikur Anbessa Hospital was taxi for 321/448 (72%) of the city patients, while 23/37 (62%) of the outsiders used buses. Ambulances were used by 4.5% of patients

## Discussion

Most of the causes of maternal and perinatal mortality and morbidity are known to be preventable through properly organized primary health care and appropriate and accessible referral facilities (10). Improvement of emergency treatment for obstetric complications in existing hospitals is crucial in minimizing perinatal morbidity and mortality. The national referral policy (11) indicated that all health institutions should handle emergency conditions. Tikur Anbessa hospital as a tertiary care level is expected to accept referrals from other hospitals for a better medical care. However, the hospital being a training center for both undergraduates and postgraduates medical education shall expose the trainees to the normal and abnormal (complicated) conditions. Thus, the hospital acts as both primary and tertiary health care institution.

This study showed that many hospitals in Addis Ababa are unable to treat common obstetric complications round the clock because of lack of resources/supplies. About one third of the reasons for referrals were stated to be due to lack of skilled manpower and shortage of supplies including shortage of beds for admission. These hospitals were supposed to provide comprehensive Emergency Obstetric

Care (EOC) services but were not able to function as such. Survey performed in district hospitals of Bangladesh in 1993 revealed similar finding, where 30% of the hospitals supposed to render comprehensive EOC were found functioning as Basic EOC facilities (12). Although the geographical distribution of EOC facilities is in favor of the urban dwellers in developing country clinics and hospitals may not always satisfy needs in emergency situations (10).

Timely provision of emergency obstetric care is important and delay is a mortal enemy to both mothers and fetus/ neonates. If the consequence is to be averted, a sequence of activities needs to be accomplished within the limited time (13). In this study, the mean time lapse between the patient presentation to the referring health institution and arrival at Tikur Anbessa Hospital was 4 hours and 30 minutes of which about two-third of the time was spent at the health institutions. This does not include the possible arrival-management initiation delay in Tikur Anbessa Hospital. Some of the emergency obstetric conditions like post-partum hemorrhage can kill women in less than one hour (14), therefore, time factor is very essential in all emergency condition but much more so in obstetrics were saving two lives without damage is the goal. Making necessary arrangements like securing beds by communicating and informing the hospital before referral, provision of transportation for those who have no fast means and health professional company was minimally practiced.

The objective of establishing a referral system was to render best medical care by skilled person at appropriate time but the study showed that almost all referrals from other hospitals (86%) are due to administrative problems mainly shortages of resources (skilled manpower and supplies). All hospitals that can render comprehensive obstetric care must have a favorable environment to work and shortage of resources (human or material) mitigated to prevent maternal and fetal/neonatal morbidity and morbidity. All hospitals especially labor wards must have access to 24 hours telephone line and fastambulance service to communicate and arrange for the smooth transfer of patients before referral when believed it is necessary for better and specialized care of the mother or neonate or both. Health personnel must also be accountable for their action in case of negligence and strict observance of professional discipline must not be forgotten. It calls for better attendance and quick decision, fast transportation means for emergency obstetric patients at the referring end. To this effect, active supervision and monitoring to ensure the functionality of the referral system, and regular consultation with the health institutions would help to improve the situation in Addis Ababa. Since large bulk of referrals were for non-medical reasons, appropriate measures to alleviate resource constraints in the referring institutions may make a difference in health related indicators in the city (15).

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## Tables

Table 1: **Emergency obstetric referrals: Socio- demographic characteristics of patients (TAH,**

**June-August 1999)**

| | Number | Percent |
|---|---|---|
| Age distribution | | |
| 15 - 19 | 47 | 9.5 |
| 20 - 24 | 145 | 29.2 |
| 25 - 29 | 190 | 38.3 |
| 30 - 34 | 72 | 14.5 |
| 35 - 39 | 37 | 7.5 |
| 40 - 41 | 5 | 1.0 |
| Occupation | | |
| Housewife | 335 | 67.5 |
| Office worker | 68 | 13.7 |
| Merchant | 10 | 2.0 |
| Daily laborer | 11 | 2.2 |
| Jobless | 5 | 1.0 |
| Students | 9 | 1.8 |
| Not record | 58 | 11.7 |
| Parity | | |
| 0 | 271 | 54.7 |
| 1-4 | 200 | 40.3 |
| 5+ | 25 | 5.0 |

Table 2: **Emergency obstetric referrals: referring health institutions within and outside of Addis Ababa (TAH, June - August/1999)**

| Referring area | Type of Health Institutions | | Freq. | % for health units | % for referring area |
|---|---|---|---|---|---|
| within Addis Ababa | Hospitals | GMH | 205 | 41.4 | |
| | | ZMH | 141 | 28.5 | |
| | | Yekatit Hospital | 83 | 16.7 | |
| | | STP | 11 | 2.2 | |
| | H.C. and Private Health Institutions | | 19 | 3.8 | |
| | Total referrals from Addis Ababa | | 459 | | 92.5 |

| | | | | | |
|---|---|---|---|---|---|
| Outside of Addis Ababa | Hospitals | Debrezeit Hospital<br><br>Others | 27<br><br>4 | 5.4<br><br>0.8 | |
| | HC. and clinincs | | 6 | 1.2 | |
| | Total referrals from Outside Addis Ababa | | 37 | | 7.5 |
| Total referral | | | 496 | 100 | 100 |

GMH = Gandi Memorial Hospital, ZMH = Zewditu Memorial Hospital

STP = Saint Paul's Hospital, H.C. = Health Center

Table 3: **Emergency referrals: Stated reasons to refer (TAH, June-August 1999)**

| **Stated Reasons** | | **Frequency** | **Percent** | **Percent** |
|---|---|---|---|---|
| Shortage of empty bed | | 135 | 27.2 | 27.2 |
| Lack of skilled Manpower | Anesthetist | 140 | 28.2 | 30.6 |
| | Ob-gyn* specialist | 9 | 1.8 | |
| | Scrub nurse | 3 | 0.6 | |
| Operation Room (OR) related | OR not functional (no specific reason) | 60 | 12.1 | 17.3 |
| | OR occupied | 8 | 1.6 | |
| | OR fumigation | 5 | 1.0 | |
| | No oxygen | 13 | 2.6 | |
| Labor ward not functional (no specific reason) | | 22 | 4.4 | 4.4 |
| Both OR and labor ward related shortage of materials | No light | 1 | 0.2 | 2.0 |
| | No water | 4 | 0.8 | |
| | No gloves | 5 | 1.0 | |
| Other reasons | Better management | 68 | 13.7 | 18.3 |
| | Uncooperative patient | 1 | 0.2 | |
| | No stated reason | 22 | 4.4 | |
| Total | | 496 | 100 | |

This table total is 99.8%: it should be corrected to be 100.0%

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Table 4: **Emergency obstetric referrals' duration of stay at the referring institution, and referral - arrival time interval (TAH, June - august/1999)**

| | Frequency | | | |
|---|---|---|---|---|
| | **Within Addis Ababa** | **Outside Addis Ababa** | **Percent** | **Cum. (%)** |
| Duration of stay at referring health institution (N=462) | | | | |
| Up to 1 Hour | 284 | 0 | 61.5 | 61.5 |
| Up to 2 hours | 48 | 1 | 10.6 | 72.1 |
| Up to 3 hours | 25 | 1 | 5.6 | 77.7 |
| Up to 4 hours | 9 | 2 | 2.4 | 80.1 |
| Up to 5 hours | 6 | 3 | 1.9 | 82.0 |
| Up to 6 hours | 5 | 5 | 2.2 | 84.2 |
| >6 hours up to 4 days and 3 hours | 48 | 25 | 15.8 | 100.0 |
| Total | 425 | 37 | 100.0 | |
| Referral-arrival time interval (N=390*) | | | | |
| Up to 1 hour | 269 | 2 | 69.5 | 69.5 |
| Up to 2 hours | 66 | 9 | 19.2 | 88.7 |
| Up to 3 hours | 9 | 6 | 3.8 | 92.5 |
| Up to 4 hours | 5 | 2 | 1.8 | 94.3 |

| | | | | |
|---|---|---|---|---|
| Up to 5 hours | 3 | 1 | 1.0 | 95.3 |
| Up to 6 hours | 2 | 1 | 0.8 | 96.1 |
| Above 6 hours up to 2 days and 18 hours | 7 | 8 | 3.9 | 100 |
| Total | 361 | 29 | 100 | |

*: Referral time was not stated for the rest (116)

## Figures

## References


1. Maine D. Safe Motherhood Programs: Options and Issues. New York: Center for Population and Family Health, Columbia University 1991;5-7.
2. Maine D, Wardlaw TM, Ward VM, McCarthy J, Birnbaum A, Akalin MZ, Brown EJ. Guidelines for Monitoring the Availability and Use of Obstetric Services. UNICEF, WHO, UNFPA. 1997;28-31.
3. McDonagh M. "Is Antenatal Care Effective in reducing Maternal Mortality?" Health Policy and Planning. 1996;11(1):1-15.
4. Rooney C. Antenatal care and maternal Health: how effective is it? WHO.Geneva. WHO/MSM/92.4. 1992;10-18.
5. WHO/UNICEF. Revised 1990 Estimates of Maternal Mortality. 1996. (WHO/ FRH/MSM/ 96.11; UNICEF/PLN/96.1).
6. WHO, World Bank. Maternal Health around the World (wall Chart).Maternal and Newborn Health/ Safe Motherhood Division of Reproductive Health. 1997.
7. Population Reference Bureau (PRB). Women of our world (wall chart). 1998.
8. Kwast BE, et al. Epidemiology of Maternal Mortality in Addis Ababa: A Community-Based Study. Ethiopian Medical Journal, 1985:23:7-16.
9. WHO. Mother- Baby Package: A roadmap for Implementation in countries. Geneva: Division of Family Health, 1993. /94.11; 30.
10. Fathalla M, Harrison KA, Kwast BE. Essential elements of obstetric care at first referral level. WHO publication 1991;5.11. MOH. National Hospitals Referral system guideline. 1996;1.
12. Mostafa G, Ali Haque, Y. A review of the Emergency Obstetric Care Functions of Selected Facilities in Bangladesh. UNICEF, 1993;6-7.
13. WHO. Care of Mother and Baby at the Health Center: Practical Guide. Maternal Health & Safe Motherhood Program Division of Family Health Organization. 1994. (WHO/FHE/MSM/94.2); 4.
14. Maine D. Studying Maternal Mortality in Developing countries: A Guidebook: Rates and Causes. Geneva, WHO, 1987;3.
15. Health Information Processing & Documentation Team. Health and Health related indicators. Federal Democratic Republic of Ethiopia. Ministry of Health, Jan. 1998;4.