

**Current Practices and Problems Encountered in Emergency
Obstetric Care in Rural Areas of Central Myanmar**

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Complications during pregnancy and childbirth are a leading cause of mortality among reproductive age women in Myanmar. There is little documented experience of the emergency obstetric care (EmOC) and problems encountered at first-level maternal care services in rural areas where MMR (136 per 100,000 live births) is higher than national average. Cross-sectional descriptive study using quantitative and qualitative methods was conducted at Myingyan and Kyaukpadaung townships in Mandalay Region. One hundred and nine midwives (MW), 2 township medical officers, 4 health assistants, 12 under-one mothers, 8 community key informants participated. Majority of midwives (MW) were providing antenatal care services to average 1 to 10 women monthly. One MW attended five deliveries per month in average. Referral rate was 27% of deliveries. Compliance rate of the referral was 71%. Most of maternal deaths occurred during deliveries at home and nearly half were attended by skilled attendants or traditional birth attendants or both post-partum hemorrhage and eclampsia caused two-third of all deaths. Most frequently faced emergency obstetric problems were abnormal foetal position and obstructed labour and PPH. Most frequent referrals were with obstetric history of primigravida (60%), elderly gravida (38%) and multiparity (23%). Common obstetric emergencies were prolong labour (45%), eclampsia (27%) and obstructed labour (22%). Thirty percent of MWs who had experienced of emergency problem could not provide some BEmOC services such as oxytocin injection, manual removal of retained placenta and mucous suction for neonate although they perceived they should provide those services. The existing maternal referral system in rural areas needs to be more effective for timeliness and good compliance. MWs' Basic EmOC skill in rural areas should be improved by strengthening training, guidance and supervision.

Key words: Emergency obstetric care, Rural, Referral

INTRODUCTION

Complications during pregnancy and childbirth are a leading cause of death and disability among reproductive age women in developing countries.¹ In Myanmar, Maternal Mortality Ratio (MMR) remains high with national average of 94 and 136 deaths per 100,000 live births in urban and rural areas, respectively. One important intervention to reduce MMR is improving access, utilization and quality of services for the management of delivery and complications.² Enhancing access to skilled

care during and after childbirth is a key strategy for reducing maternal mortality.³

The 2005 World Health Report recommended provision of professional but de-medicalised care midwife-led birthing centres located close to people's homes.⁴ Thus, professionally trained midwives are an important human resource for rendering maternal health care, especially in under-served primary care settings. A functioning

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referral system and back-up hospital care are vital components of successful maternity care programmes.⁵

Service guidelines have been developed for use by skilled attendants working in primary care settings^{6, 7} and their knowledge and skills have been studied and assessed.⁸ In 2011, the Ministry of Health issued training guidelines allowing midwives to initiate emergency care independently before referral. However, there is little documented experience of the implementation of such guidance by first-level maternal care services, especially as to how midwives recognize, manage and refer for treatment of complications. Findings could be supportive for the maternal health programme with the highlights on BHSs' need on ground situation of managing emergency obstetric problems.

In view of the above, this study was carried out with the objectives of exploring current EmOC practices carried out by basic health staff in rural areas and finding out problems encountered in current EmOC activities of BHSs.

MATERIALS AND METHODS

It was a cross-sectional, descriptive study using qualitative method. Myingyan and Kyaukpadaung townships in Mandalay Region were selected with the purpose of relatively high maternal morbidity and mortality rates in the region. Study populations were midwives who have at least one-year service duration at the selected health center, Township Medical Officers, community key informants and women who have experienced of child birth within last one year in the study area. Sampling was made with purpose of having directly related to the child births in respective area and key person for information.

Two MWs for each of 3 types of strata (i.e. age older and younger than 30 years, service duration longer and shorter than 5 years and location more far and nearer to

hospital about 2 hours traveling time) were considered. Thus, 8 MWs in each township were selected with the criteria. One TMO in each township was requested for interview. Regarding community key informant, one person each for administrative authority, religious person, school teacher, and auxiliary midwife having 4 persons from each township were selected. Two women each who had birth at home with AMW birth, at home with MW, and referred to hospital having 6 women in each township were selected. In-depth interview (IDI) and key informant interview (KII) method were used. Content analysis was made.

The study was carried out strictly following ethical guidelines of Ethics Review Committee of Department of Medical Research.

RESULTS

Background of midwives in the study areas

There was a total of 109 MWs who participated in two study townships. Age, total service and service in the recent post were 37.5 ± 0.1 years, 12.1 ± 9.7 years and 7.6 ± 7.4 years, respectively. Average number of pregnant women recently booked for antenatal care per MW was 22 ± 14 .

Monthly provided average AN care women per MW was 12 ± 9 . One MW was attending 5 ± 4 deliveries per month in average (Fig. 1). Majority of MWs had provided antenatal (AN) care for average 1 to 10 women

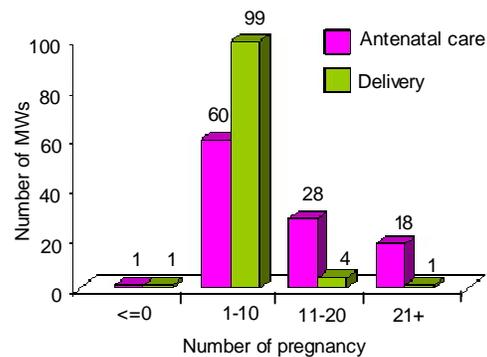


Fig. 1. Obstetric workload of MWs in study areas

monthly. Similarly, most of MWs attended average 1 to 10 deliveries per month. Home delivery rate was 54%. Referral rate was 27% of their deliveries. Compliance to the referral was found 71% of referred cases.

Emergency cases that were experienced by MWs

Most frequent problems experienced in their delivery practices were abnormal foetal presentation (70%), obstructed labour (63%) and antepartum or postpartum haemorrhage (36%). Six percent of MWs had experienced of maternal death in their areas and 36% had heard about the incidence of maternal death in their region. Only 10% of respondents reported that those maternal death cases did not take antenatal care (ANC) (Table 1).

Table 1. Antenatal care taken by the maternal death cases

ANC practice of the maternal death case	Frequency	Percent of cases (n=39)
No ANC	4	10.3
ANC at health center	29	74.4
ANC at clinic	8	20.5
ANC at hospital	8	20.5

ANC=Antenatal care

Most of the cases took ANC mostly (74%) at health center. According to the response, 42% of cases of maternal death had attended by MW or TBA or both during the delivery. Those maternal death incidences happened mostly at home (82%), mode of delivery was vaginal delivery (79%) and condition of baby was alive after birth (69%). However, regarding the mode of delivery and condition of baby 15% and 23% of respondents did not mention the status. Most of the death (36%) was due to postpartum hemorrhage (PPH). Secondly, it was due to preeclampsia (PE) or eclampsia (28%).

Current practices in obstetric emergencies

Majority of problem cases (93%) attended by MWs were referred to higher centers. However, 11% of problem cases did not comply the referral. During the last year, 76% of MWs reported they had problem cases and referred them to higher centers.

Of those cases which needed referral, 87% were home deliveries most frequent referral cases had obstetric history of primigravida (60%), elderly gravida (38%) and multiparity (23%) (Table 2).

Table 2. Obstetric history of the emergency cases which were referred (n=77)

Obstetric history of the emergency case	Responses (n=163) n (%)	n=77 (%)
Multiparity	18(11)	23.4
Elderly gravida	29(17.8)	37.7
Primigravida	46(28.2)	59.7
Previous CS	24(14.7)	31.2
Bad obstetric history	8(4.9)	10.4
Bad medical history	10(6.1)	13
Twin pregnancy	17(10.4)	22.1
Other	11(6.7)	14.3

Prolong labour, PE and obstructed labour were reported as common obstetric emergency problems for referred cares in the area (45%, 27% and 22%, respectively). Most of emergency cases (92%) were referred to the hospital (Table 3).

Table 3. Emergency problems encountered during the delivery of the referred cases (n=77)

Emergency problem encountered during the delivery	Frequency	(%)
APH	5	6
Bleeding during delivery	8	10
PPH	7	9
PE	21	27
Prolong labour	35	45
Obstructed labour	17	22
Maternal distress	7	9

APH=Antepartum haemorrhage

PPH=Postpartum hemorrhage

PE=Preeclampsia

Table 4. Ability to practice emergency care services by MWs in their areas (n=60)

Ability to manage	Frequency	(%)
Vaginal examination	44	73.3
Catheterization	22	36.7
Uterine massage	11	18.3
Removal of blood clot	18	30.0
Oxytocin injection	8	13.3
Control cord placental removal	15	25.0
Antibiotics injection	14	23.3
Magnesium sulphate medication	8	13.3
Antihypertensive medication	18	30.0
Infusion of IV solution	16	26.7
Medication for cervical dilatation	6	10.0
Mucous suction for babe	13	21.7
Mouth-to-mouth respiration to baby	13	21.7

Problems encountered in EmOC practice

About 30% of MWs who had experienced of emergency problem perceived they should provide relevant EmOC services on those cases. However, not all those MWs could perform those EmOC services especially vaginal examination, oxytocin injection, control cord traction for removal of placenta and mucous suction from babe's throat. Reason for not able to conduct was lack of equipment and capacity (Table 4).

Findings from in-depth interviews

Findings from in-depth interview with midwives (MW)

MWs noticed that the main cause of denial for referral by clients was economic problem. Although the client did not comply the referral, MWs did not abandon the client without any necessary services. Some of BHS helped for transportation but some could not manage for it. Some MWs accompanied the clients during the referral, but some could not. Many MWs stated they communicated with other organizations which are helping the mothers for financial and other necessary aids. For those cases who denied the referral, there were few things for MWs to do necessary action. They made reporting to RHC, communication with local volunteers and medical care as much as possible. Some MWs stated they could not continue care services for those cases since the problem was out of their capacity and actually need to go a referral center. There were some comments on cause of maternal death in the regions. There were transportation difficulties, lack of SBA in the accessible place and due to management of untrained birth attendants.

MWs could manage emergency obstetric problems before referring to higher center. Management of preeclampsia with magnesium sulphate injection, intravenous infusion and mucous suction for neonate were carried out. It also means that they could find

the obstetric problem as an emergency and know that it needs to do something in correct way before referral. Proper antenatal care, health education about obstetric emergency problems to community and clients, and commodities including medicines and equipment were essential for MWs to prevent maternal morbidity and mortality in rural setting.

Findings from in-depth interview with Township Medical Officers (TMO)

TMOs stated there were some mismanagement of AMWs especially injection oxytocin. Some obstetric emergency cases were managed by TBA and AMW before the management of MWs. If MWs found those cases lately, they usually referred instead of attending delivery. TMOs said MWs usually gave intravenous infusion before referral. Two cases were memorized by TMO. The first one is about referral too late to reach the hospital for life saving measures. Another one is a case of undiagnosed foetal abnormality which could save the life of baby if they could be delivered by Cesarean Section.

Findings from in-depth interview with Health Assistants

They observed that obstetric emergency which mostly referred to higher centers from the regions were primigravida, multiparity, PE, elderly pregnancy, abnormal presentation and bleeding PV. There were three kinds of care service provided by BHS for referral cases. Those services were arrangement of transportation, coordination with local administrative authorities and local organizations and medical cover on the way to higher center. One case of maternal death experienced was probably due to uterine rupture. Inaccessibility to SBA, accessibility to unskilled attendant, mismanagement of quack and late referral contributed to this incident. To prevent maternal morbidity, effective health education, proper antenatal care and proper referral were suggested by HAs.

Findings from in-depth interview with mothers

Mother expressed that about 60% of their deliveries were at home. Home delivery was also preferred mainly due to friendliness of environment, having relatives near and easy access to MWs. Most of mothers formally received care services from SBA during their labour pain such as abdominal examination, measurement of blood pressure, vaginal examination and some kind of injection and sometimes infusion of drip bottle. Some deliveries had been referred and went to hospital for further management. Mothers also perceived that they should have plan before labour pain start. Their plan should include good nutrition, packing accessories, and plan for transportation to town. Home delivery was preferred if there was no problem observed in antenatal care and if they have accessible to SBA.

Key informant interview findings

They had noticed that 80% of deliveries were at home/village. On average, there was about 10-12 deliveries annually in their village. Home delivery was preferred due to economic reason, accessibility to SBA at the village, no obstetric problem observed, and lastly convenience and cultural norm. Hospital/institutional delivery were chosen only when they were diagnosed as problem case. They believed that obstetric problems were due to poor health status of mother during pregnancy.

DISCUSSION

About ten AN cases and 5 delivery attendances per month were manageable for a MW. Twenty-seven percent referral rate with 71% compliance rate indicates strengthening MWs' capacity to manage obstetric emergencies such as PPH and eclampsia would be helpful for safemotherhood in rural areas. Some MWs communicated with locally accessible organizations for financial and other necessary aids which

were main reasons for denial of referrals. However, financial aids alone could not solve problem of incompliance of referral because, there were other alternative birth attendants who make clients to have false security upon their risk like in Tanzania.⁹ Some AMWs, TBAs and quacks were conducting improper management during their attendance in delivery such as injection oxytocin, excessive fundal pressure, repeated unsterile vaginal examination and sometimes putting foreign object into the vagina. Some obstetric emergency cases were managed by TBA and AMW prior to MWs. It may lead the cases delay to reach higher level well-equipped health care facilities. Consequently, situation are worsening for MWs to provide prior emergency lifesaving management beyond their capacity. Most frequent problems such as abnormal foetal presentation and obstructed labour need to be referred. Lives of emergency obstetric cases due to bleeding could also be saved by emergency care performing oxytocin injection, manual removal of placenta, intravenous infusion and effective referral.

The referral system included counselling, arranging transport, accompanying women, facilitating admission and supporting inpatient care, and led to higher referral compliance rates. The functional referral system is thus important in backing-up antenatal, labour and delivery, and postnatal services in the primary level. The referral compliance was not too low compared to other areas. A study in Tanzania showed that compliance rate was 37% for women referred due to demographic risks and more than 50% among women in the groups referred due to other risks.¹⁰ Compliance with referral was higher for maternal conditions than fetal conditions. In India, 72% of referrals complied.¹¹

Maternal morbidity and mortality could be prevented by effective health education, proper antenatal care and proper referral. Effective referral for obstetric emergencies should be in standard way. Establishing

a referral network to facilitate transport and communication from the community to the health centre and between the health centre and the hospital is essential and should have systematic and in sustained fashion with good supervision especially in rural remote areas. Delay referral of mothers and newborns need to be overcome by community-based or innovative intervention.¹² Arrangement of transportation, coordination with local administrative authorities and local organizations and medical cover for the client on the way to higher center were important for effective referral. Some of BHS helped for transportation but some could not perform BEmOC services. Some MWs accompanied with clients during the referral, but some could not. The solution is effective referral system. A well-functioning referral system will; maximize efficiency of the health system, strengthen lower-level facilities and improve capacity for decision-making, create opportunities for balanced distribution of resources, promote linkages across the different levels of care and finally ensure that care is provided at the lowest possible cost.¹³

While oxytocin is the first-line drug for the Active Management Third Stage Labour (AMTSL), MWs and AMWs do not have official permission to administer oxytocin; most health personnel do not have experience and confidence to administer magnesium sulphate for the management of hypertensive disorders in pregnancy.¹⁴ Some MWs have confidence to perform management of preeclampsia with magnesium sulphate injection, intravenous infusion and mucous suction for neonate in emergency situation before referral. However, many health care settings are still concerned that they are not legally covered for administration of these functions and so will not perform the related services. There is inconsistent support for the administrative order that approves strengthening midwives as SBAs. While efforts of the DOH are directed to promote deliveries within facilities, having women deliver with a midwife who is not trained to provide

the full range of SBA functions will compromise maternal survival. On the other hand, there are reports of some midwives in private practice who manage cases more aggressively than their competencies allow. In addition, several hospital-level providers claim that women are referred too late to higher-level facilities. In rural areas where a midwife is the only health care provider, a woman delivering at a facility still may not have access to lifesaving care because of the limitations in the range of competencies.¹⁵ There are significant issues with provider competence and confidence in the correct use of MgSO₄. MgSO₄ is the first-line drug of choice for prevention of and managing PE/E.¹⁶

In Myanmar, Ministry of Health also points out that EmOC facilities are needed to be strengthened.¹² It is important to know how many of MWs could not perform which kind of emergency care. They may need training for some common basic emergency care. The assessment of skill and competency for performing those BEmOC services by MWs would help programme manager for review of curriculum and planning of necessary on-job training programme.

Although institutional delivery practice is being promoted in Myanmar, home delivery was still preferred by clients mainly due to friendliness of environment, having relatives around and especially if there were easy access to MWs or birth attendants they relied on. Without any problem noted at antenatal period, and with accessibility to any kind of birth attendants whether skilled or unskilled, they will not think of and plan for institutional delivery. However, community practice of birth plan including financial matters and transportation matter should be exercised in coordination with providers, volunteers and authorities in rural areas.

Conclusion

The existing maternal referral system in rural areas needs to be more effective in compliance. There are gaps in competency

of midwives to handle EmOC. Referral system is also not effective. There is also need of strengthening birth preparedness and complication readiness to improve compliance for clients who need comprehensive emergency care. MWs in rural areas need to be improved about their skill and competency in performing BEmOC services. Concurrently, there should be policy and guidance of programme to encourage BHS for lifesaving measures.

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REFERENCES

1. High-level event on the Millennium Development Goals, *Fact Sheet*. United Nations Headquarters, New York, 25 September 2008.
2. Ministry of Health. Health in Myanmar, 2010.
3. Kowalewski M & Jahn A. Health professionals for maternity services: Experiences on covering the population with quality maternal care. V De Brouwere & W Van Lerberghe, Editors. *Safe Motherhood Strategies: A Review of the Evidence*, ITG Press, Antwerp, 2001.
4. Skilled professional care: At birth and afterwards. In: *World Health Report 2005: Make every mother and child count*, WHO, Geneva, 2005.
5. Murray SF & Pearson SC. Maternity referral systems in developing countries: Current knowledge and future research needs. *Social Science and Medicine* 2006; 61: 2205-2215.
6. World Health Organization, Integrated management of pregnancy and childbirth. Pregnancy, childbirth, postpartum and newborn care: A guide for essential practice, WHO Department of Reproductive Health and Research, Geneva, 2003.
7. Government of India. Guidelines for skilled attendance at antenatal and delivery care for ANMs and LHV's, Ministry of Health and Family Welfare, GOI, New Delhi, 2005.
8. Ramarao S, Caleb L & Khan ME, *et al*. Safer maternal health in rural Uttar Pradesh: Do primary health services contribute? *Health Policy and Planning* 2001; 16(3): 256-263.
9. Yagusa DV, Mubyazi GM & Masatu M. Involving traditional birth attendants in emergency obstetric care in Tanzania: Policy implications of a study of their knowledge and practices in Kigoma Rural District. *International Journal for Equity in Health* 2013; 12: 83.
10. Pembe AB, Carlstedt A, Urassa DP, Lindmark G, Nyström L & Darj E. Effectiveness of maternal referral system in a rural setting: A case study from Rufiji district, Tanzania. *BMC Health Services Research* 2010; 3(10): 326.
11. Iyengar K & Iyengar SD. Emergency obstetric care and referral: Experience of two midwife-led health centres in rural Rajasthan, India. *Reproductive Health Matters* 2009; 17(33): 9-20.
12. Ministry of Health, Health in Myanmar, 2014.
13. Kenya Health Sector Referral Implementation Guidelines, 2014.
14. UNFPA. Report on Situation Analysis of Population and Development, Reproductive Health and Gender in Myanmar, July 2010.
15. USAID. Postpartum family planning, prevention of postpartum hemorrhage and management of pre-eclampsia/eclampsia: MCHIP assessment report on current practices in the Philippines. August 15, 2012.
16. WHO. Recommendations for prevention and treatment of pre-eclampsia and eclampsia, 2011.