Support to Maternal Emergency Referrals through the 3MDG Fund – A Life Saving Intervention

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Acknowledgements

We are very thankful to the Township Health Departments and Implementing Partners who carry out the emergency referral services in townships. It is through these lifesaving interventions and their careful reporting that the data for this article has become available. We hope that the information presented in this article can contribute towards improved programming, monitoring and future planning. We are also extremely grateful for our 3MDG Public Health and M&E colleagues for their insights and suggestions that support our article.

Lastly, we would like to express our gratitude to the 3MDG Fund donors who support critical health services including emergency child and maternal referrals and health system strengthening in townships in collaboration with Ministry of Health and its Implementing Partners.
Acronyms

3MDG  Three Millennium Development Goal Fund
BHS   Basic Health Staff
EmOC  Emergency obstetric care
GAVI HSS The GAVI Alliance health system strengthening
IPs   Implementing Partners
IHLD  Integrated Household Living Conditions Survey
JIMNCH Joint Initiative for Maternal, Newborn and Child Health
LSCS  Lower segment Caesarian section
MOH   Ministry of Health
MMR   Maternal Mortality Ratio
M&E   Monitoring and Evaluation
NGOs  Non-governmental organizations
ObGyn Obstetricians and Gynecologists
SRHCs Sub-rural Health Centers
THD   Township Health Department
TMO   Township Medical Officer
VHC   Village Health Committee
VHW   Voluntary Health Worker
VTHC  Village Tract Health Committee
WHO   World Health Organization
Introduction

Global evidence shows that the proportion of major direct obstetric complications throughout pregnancy, delivery and immediately postpartum is estimated to be 15% of expected births\(^1\). There are seven direct obstetric causes of maternal death, all of which can be successfully treated without loss of life in the great majority of cases with adequate obstetric services. These direct complications are: hemorrhage (antepartum or postpartum), prolonged/obstructed labor, postpartum sepsis, complications of abortion, pre-eclampsia/eclampsia, ectopic pregnancy, and ruptured uterus, and they account for about 85% of direct obstetric deaths. These complications occur suddenly, often without warning and become emergencies\(^2\). In developing countries, where infrastructure and geographical and transport challenges combined with poverty are significant barriers to health service uptake, the referral and transport of these emergencies is one of the key strategies to reducing maternal mortality.

The current estimate for the Maternal Mortality Ratio is 200 per 100,000 live births per year\(^3\). The Census 2014 report indicates higher under five child and infant mortality rates than the previous estimate and it is possible that the MMR is higher than this estimate.

In Myanmar where prior to 2013, drugs were not widely available or fully supplied to public health facilities, mothers who had emergency problems faced the cost of transport and for all the service costs incurred at the health facility. The out of pocket costs (OOP) that they faced were real barriers to accessing emergency care, in addition to those caused by the bad roads in remote areas, heavy monsoon rains that made any roads very difficult and the lack of transport. Assessments done in the first phase of the implementation of the GAVI Health Systems Strenghtening Fund (HSS) showed that 80% of total health expenditure was OOP\(^4\).

Support to Maternal Emergencies in Myanmar has been provided historically by local charitable organizations or communities to some cases. In addition, in a few areas, some International NGOs (INGOs) supported referrals through Village Health Revolving Fund and Micro Finance Groups to emergency cases, not limited to maternal or young child emergencies. The GAVI HSS Fund was used by the MOH since the end of 2011 to support the referral of maternal emergencies amongst poor mothers in 20 Townships\(^5\) through the Hospital Equity Fund. The Joint Initiative for Maternal and Newborn Health supported the cost of transport, food and hospital care costs for the mother and a caretaker, since 2012, through Implementing Partners that were International NGOs in 6 Delta Townships\(^6\) that were badly affected by Cyclone Nargis.

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2 AMDD Workbook Using the UN Process Indicators of Emergency Obstetric Services - Anne Paxton
   Senior Program Officer, Monitoring and Evaluation, AMDD; Deborah Maine, Program Director, AMDD
   Nadia Hijab Consultant, AMDD; Columbia University Mailman School of Public Health - 2003
4 Performance Assessment of GAVI_HSS Interventions in 20 Townships – MOH, WHO, IHHP Thailand, 2014
5 Ngapudaw, Yedershaw, Tharawaddy, Hakha, Bama, Shwegu, Damoso, Hlaingbwe, Htilin, Lewe, Pyinmanar,
   Mudon, Thaton, Ye U, Kyaing Tong, Hsipaw, Naung Shwe, Meyeik, Kahmu
6 Labutta, Ngapudaw, Dedaye, Pyapon, Bogale, Mawlamyinegyyun
Maternal referrals were supported in the 6 Delta Townships as a continuation of the JIMNCH strategy 2010 to 2012, once the 3MDG Fund was established in 2013. Some partners linked this referral to poverty and/or through Village Health Committee Funds. Since 2014, referral guidelines were harmonized and in Townships where the 3MDG Fund provides support, maternal emergency referrals are supported regardless of the economic status of the mother. Additionally, in 2013, the MOH declared that all maternal and child emergencies were to be treated free of cost. The budget for health was increased significantly and since many drugs were now procured and supplied, the support was mainly for the transport and food costs for the patient and one attendant and some additional costs for investigations and a few drugs that were not in the hospital pharmacy.

The 3MDG Fund was instituted through the contribution of 7 donors to a total of $330 million dollars for the period 2012 to 2016, with a focus on Maternal and Child Health and support to the country to achieve MDGs 4, 5 and 6.

Harmonizing Support to Referrals in 3MDG Supported Townships

With the support of the JIMNCH funds, the partners with the Township Authorities of the six Delta Townships developed various methods through which to support Emergency Referrals, though all guidelines cited the danger signs and the definition of obstetric emergencies as outlined in the various policy documents and guidelines of Myanmar. However, the guidelines did not use a target to assess the success of the awareness raising and the uptake of referral support, which as stated previously is 15% of all expected pregnancies. The ways and means in which partners reimbursed costs also varied: some supported these through the development of VHC revolving funds and some with reimbursement of funds on receipt of documents relevant to the referral, both at the community level and at the hospital level and some linked the payment to a judgement by the hospital as to the economic status of the woman. Till the end of 2013, all partners refunded the cost of transport, food and treatment costs for referrals.

In 2014, the partners and the Fund Management Office worked together to harmonize the guidelines, working on both the reasons for referral and also the ways in which the costs would be met. Since the MOH had declared emergency treatment to be free of cost, only investigations and some drug costs were eligible in addition to the cost of transport and food. A decision was made that all patients would be eligible for support, since there was no objective method to determine poverty.

According to the Integrated Household Living Conditions Survey (IHLCS) in Myanmar conducted in 2009-2010, Chin, Shan and Rakhine are the 3 poorest states and Ayeyarwady is amongst the 3 regions/states with the highest numbers of poor people. The IHLCS data shows that a high percentage of the population is clustered around the poverty line, i.e., they are extremely vulnerable to minor risks and shocks that can place them below the poverty line. This clustering suggests that more universal approaches to benefit provision are preferred to ones targeted by income, which would risk excluding many people living in poverty or close to poverty (chronic poor and transient poor). The price of meeting the costs of a health emergency is an important reason that could send a family to or below the poverty line and put the health and wellbeing of the entire family at risk. Assessing and limiting access to benefits based on any criteria of poverty in a systematic way also requires an effort level and has an implied cost.

The 3MDG Fund supports work in Ayeyarwady, Chin, Shan, Magway and Kayah. The Townships in Magway are ones in which there are some issues of access and poor infrastructure.
Referrals are made when an emergency is identified by the BHS and in conjunction with the Village Health Committee who can advance travel costs and assist in the arrangements for transport of the patient and an attendant to the nearest appropriate hospital (able to provide Comprehensive Emergency Obstetric Care). If a BHS is not available the VHW may be the person to identify the referral. If there is no BHS or Volunteer, the patient is able to refer herself on the recognition of a danger sign. Travel costs are agreed between the THD and the partner from each village/area to the hospital and the food costs are standard.

Since travel in Myanmar is a challenge both due to the issues of transport and also the roads or the sea channels, it can take a patient quite some time to get to the referral facility. It has therefore been considered appropriate to refer women with high risk signs such as previous LSCS or elderly multipara to the hospital. In this light, the target for women to be referred was revised upwards to about 20% of all expected births. It was also agreed that since this has to be accompanied by awareness of the need for referral and the confidence that the costs will be met and treatment given, it takes time to get to this level in any area.

Following the harmonization of the guidelines within the IPs and the 3MDG Fund office, a workshop was held by the MOH and supported by both the WHO and the 3MDG to discuss the guidelines and the achievements. This was convened by the Director of the Maternal Health and attended by relevant MOH staff, senior Obstetricians and Gynecologists, Township officials, IPs and 3MDG staff. At the end of the workshop, some revisions were made to the criteria and the inclusion of referral from a secondary to a tertiary facility. The document was separated into a Technical section and a financial section. Currently the financial section is for the use of 3MDG partners (or any other partners who wish to support referrals in a similar manner and wish to use them).

**Achievements in the 3MDG Supported Townships**

Information regarding referrals is collected by the partners. The information is collected from the treating hospitals from the discharge slip, a form that shows the village of residence and also the referral form. The diagnosis entered is that given by the treating ObGyn/Assistant Surgeon/TMO. The partner collects the information regularly from the hospitals and compiles and shares the information with the 3MDG M&E team on a six monthly basis, allowing us to analyze the data subsequently. The information presented here is data till the end of December 2014. Reports include data from Ayeyarwady since January 2013; in 4 Townships of Chin since the beginning of 2014 and in 5 Townships for the last 6 months of 2014; 5 Townships of Magway since July 2014 and 3 Townships of Southern Shan for the last month of 2014. This is related to the periods since support had been operational in all these Townships.

**A total of 13,754 emergency maternal referrals were supported over the period January 2013 – December 2014.** This amounts to an average of 14% of all expected births in the Townships where support was operational.

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7 Falam, Tedim, Mindat and Matupi since January 2014; Hakha, Thantlang, Tonzang, Kanpetlet, Paletwa since July 2014
8 Hsihseng, Mawkmai, Laihka
The break down by year is as follows:

- A total of 8,007 maternal referrals were supported in 6 Townships in the Ayeyarwady Region\(^9\), the 9 Townships in Chin State\(^{10}\), the 5 Townships in Magway Region\(^{11}\) and 3 Townships in Shan\(^{12}\) in the period Jan – Dec 2014, with the support of 7 partners of the 3MDG Fund. This amounts to 15% of all expected pregnancies for this period in all 23 Townships, 10 of which are in the start-up phase.

- A total of 5,747 maternal referrals were supported in the Townships in the Ayeyarwady Region in 2013 with the support 5 partners of the 3MDG Fund. This amounts to 13% of all expected pregnancies for 2013 in the 6 Townships.

Outcomes of Referrals

Fig 1: Emergency Maternal Referrals and Case Fatality rate among Referrals

Note: No previous data available from other Townships so it was only possible to compare figures in the 6 Delta Townships in 2012 & 2013. Data for 2014 includes 23 Townships.

Fig 1 shows a steady increase in the numbers of referrals, a steady decline in the maternal case fatality rate and a steep decline in the neonatal case fatality rate followed by a levelling off. This is possibly due to raised awareness of danger/risk signs at the community level, awareness that support for referrals is available and therefore lowered financial risks, readiness of community to organize transport, harmonization of guidelines and the awareness of a target that should be ideally achieved.

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\(^9\) Labutta, Dedaye, Pyapon, Ngapudaw, Bogale and Mawlamyinegyun

\(^{10}\) Falam, Tedim, Tonzang, Hakha, Thantlang, Matupi, Mindat, Kanpetlet, Paletwa

\(^{11}\) Gangaw, Ngape, Pauk, Myaing, Seikphyu

\(^{12}\) Hsihseng, Laihka, Mawkmai
Table 1 presents the numbers of maternal deaths and newborn deaths amongst all referrals, expressed as numbers and a percentage of all referrals. These numbers were then used to calculate the case fatality rates amongst referrals.

<table>
<thead>
<tr>
<th>Table 1: Deaths amongst Referrals</th>
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<tbody>
<tr>
<td></td>
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<tr>
<td>Jan – Dec 2014</td>
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<tr>
<td>Percentage of all referrals, Jan – Dec 2014</td>
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<tr>
<td>Jan – Dec 2013</td>
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<tr>
<td>Percentage of all referrals 2013</td>
</tr>
<tr>
<td>2012 (JI MNCH)</td>
</tr>
<tr>
<td>Percentage of all referrals 2012</td>
</tr>
</tbody>
</table>

The case fatality rates for mothers show a steady decrease and are less than 1%. WHO recommends that the direct obstetric case fatality\(^\text{13}\) rate should be less than 1%\(^\text{14}\). This is not the case for the neonates. However, this information shows that, in 2014, of a total 148 newborn deaths, 27 were recorded as Intrauterine Foetal Deaths (IUFD) or still births (18% of all newborn deaths). This information was not fully available in 2013 where only 13 IUFD or still births are recorded amongst 102 deaths (13% of all newborn deaths). This is likely to be bad or under reporting. The increase of reporting in 2014 is linked to better reporting and documentation and may also indicate a rising awareness of IUFD and a readiness to go for help due to the financial and logistical support that is available.

<table>
<thead>
<tr>
<th>Table 2: Interventions for all referrals as numbers and as a percent of all referrals</th>
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<tr>
<td></td>
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<tr>
<td>Jan – Dec 2014, 23 Townships Number</td>
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<tr>
<td>% of all referrals</td>
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<tr>
<td>Jan – Dec 2013, 6 Delta Townships Number</td>
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<tr>
<td>% of all referrals</td>
</tr>
<tr>
<td>Jan – Dec 2012, 6 Delta Townships Number Number</td>
</tr>
</tbody>
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\(^{13}\) The numerator is the number of women dying of direct obstetric complications during a specific period at an EmOC facility. The denominator is the number of women who were treated for all direct obstetric complications at the same facility during the same period.
Table 3: Interventions for all Referrals as a Percentage of All Expected Pregnancies

<table>
<thead>
<tr>
<th></th>
<th>Total Referrals</th>
<th>Lower Section Caesarian Section</th>
<th>Instrumental deliveries</th>
<th>Normal Deliveries</th>
<th>Other interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan – Dec 2014, 23 Townships</td>
<td>8,007</td>
<td>6%</td>
<td>2%</td>
<td>6%</td>
<td>1%</td>
</tr>
<tr>
<td>Jan – Dec 2013, 6 Delta Townships</td>
<td>5,747</td>
<td>5%</td>
<td>1%</td>
<td>5%</td>
<td>1%</td>
</tr>
<tr>
<td>Jan – Dec 2012, 6 Delta Townships</td>
<td>3,592</td>
<td>4%</td>
<td>1%</td>
<td>3%</td>
<td>0.4%</td>
</tr>
</tbody>
</table>

Tables 3 and 4 show the outcomes of the referrals in terms of the intervention. About 40% of all referrals over the years result in an LSCS and about 40% result in a normal vaginal delivery.

![Lower Section Caesarian Sections as a Percentage of Expected Pregnancies](image)

When calculated as a percentage of all expected births, over the years the proportion of expected births that result in an LSCS has risen from 4% to 6%. WHO guidance on the levels of LSCS state a minimum of 5% of all births and a maximum of 15% of all births as range to be used to monitor availability and uptake of EmOC\(^\text{15}\), while acknowledging that the upper limit often exceeds this in developed countries. The proportion of expected births that result in an LSCS is often used as an indicator of the health system functioning in a way that allows access to services.

Reasons or Causes for Referral

The major reasons for referral are those of direct obstetric problems, though there are a small proportion of referrals due to medical reasons.

**Fig 3: Proportion of Top 12 Causes of Maternal Referral, 23 Townships
Jan – Dec 2014**

- Prolonged/Obstructed labour 26%
- Other related to obstetric complication 19%
- Eclampsia/PIH/Pre eclampsia 9%
- Abortion 6%
- Fetal distress 6%
- Malpresentation/abnormal lie 6%
- High head at term 7%
- Pregnancy with medical disease 4%
- Maternal distress 5%
- PROM 5%
- APH 3%
- Old scar 4%

It can be seen from the chart above and below that the top 12 causes for maternal emergency referral are roughly the same and in the same proportions over time.
Referrals from Hard to Reach Areas (HtR)

It can be seen from Fig 5 that the referral rates from the Hard to Reach areas are lower than from other areas, except in the Chin Townships. Since the support to referrals is still in the early stages in the Chin Townships the rates are likely change but may also be indicative of the fact that there are many HtR areas in this state. However, this raises the issue of an inequity and the challenges related to health care for people who live in the HtR areas in general. The posting of midwives and construction of Sub Rural Health Centers focusing on these areas may be one of the possible solutions.
Travel costs in Chin are higher than in Ayeyarwady and Magway, which is to be expected given the mountainous terrain and poor infrastructure in Chin. In addition to the average costs per referral shown above:

\[
\text{Range of per capita per year costs per referral} = 0.40 - 0.80 \text{ USD}
\]

This cost does not include the cost of salaries or the capital or running costs of the health staff and facilities.

The evaluation of JIMNCH conducted by Burnet in 2012 showed that the average of $56 spent by patients on an emergency referral of a young child was equivalent to payment for 28 days work and the $204 spent on emergency maternal referrals was equivalent to 102 days work. The loss of either of these sums to a family that is dependent on one income would be devastating.

As cited earlier, the IHLD states that there is a large clustering around the poverty line in these states/regions. Protection against catastrophic expenditure on health is an important and perhaps critical measure to consider.

**Challenges**

1. Awareness in the community of the risk and danger signs can result in late referrals.
2. Lack of knowledge as to the closest place to refer mothers to can contribute to a delay in referral.
3. Lack of organized support at community level through the VHC or VHTC for quick transport and/or financial support for transport can also result in delayed referrals.
4. If the station hospital is the nearest hospital to the village but is not able to provide comprehensive obstetric care due to a lack of staff or equipment, this will result in a longer travel time and delayed treatment.

5. Support for referrals to the nearest facility may involve referral to another Township or even another state or region. This will result in perhaps higher costs and has implications for how these should be reported and to whom. Since the targeting is linked to a rate of expected births, the denominator is that of expected births in the Township of origin.

6. Since the record of the cause of referral is taken from the discharge form, an incomplete form or one that does not use standard cased definitions will result in a record of the wrong diagnosis.

7. Emergency treatment for maternal emergencies is free of cost but there are some costs attached to investigations. These are not well known or standardized. The list of drugs that are available in the hospital as part of the treatment and free of cost is also not known or widely advertised.

8. In a population where most people are clustered around the poverty line, a lack of systematic financial support is likely to result in delayed referrals.

9. In areas with difficult terrain and poor infrastructure, referrals are likely to be made even more difficult in the rainy season.

10. Referral rates are lower in the HtR areas and continue to be a challenge.

Conclusions

1. Support to maternal emergency referrals is a lifesaving intervention for both mother and baby. Since the additional cost per capita per referral is low, this is an intervention that could be undertaken.

2. Awareness of the available support and mechanisms of referral takes some time to build up in a community.

3. The knowledge of where to seek services and how much they will cost is central to increasing service uptake.

4. Community involvement in the recognition and referral of emergencies can be key to timely and effective referral. This community mobilization also takes time and needs to be sustained.

5. The revitalization of station hospitals or opening of new station hospitals in hard to reach areas with big populations could be a key to better response to referral.

6. Standardization of how referrals are recorded and how the diagnosis is entered will aid in a better analysis of results and can help to target interventions in a more effective manner.

7. In the long run, an improved infrastructure, including electricity, will result in a more efficient system.

8. Along with the improved infrastructure the posting of midwives to cover HtR areas and the construction of SRHCs would address some of the challenges related to providing services to people who live in these areas.

Issues for Future Consideration

1. Since the support to maternal referrals is a cost effective way in which to save maternal and newborn lives should there be consideration of how this could be supported nationally?

2. How can the health system focus on the support needed for hard to reach areas?