MATERNAL AND NEWBORN HEALTH EMERGENCY HELPLINE SUPPORT: ASSISTING RURAL MNH SERVICE PROVIDERS TO MAKE CLINICAL DECISIONS DURING COVID-19

BACKGROUND

The Nepal Government has been implementing a national safe motherhood program to improve Maternal and Newborn Health (MNH) through a series of activities.1 However, the lockdown imposed in Nepal due to COVID 19 in May 2020 interrupted regular health service provision, including MNH services.2 Moreover, travel restrictions also created challenges for women to seek MNH services on time as well as to reach referral centers.

A number of findings have highlighted the importance of health providers consultations by using telehealth tools during the Covid-19 pandemic.3-5 Meanwhile, the Family Welfare Division (FWD) developed an “Interim Guidance for Reproductive Maternal, Newborn and Child Health (RMNCH) Services in COVID 19 Pandemic,” highlighting the use of telephone consultation as one of the strategies to continue providing services during the pandemic in Nepal.

With regard to the ongoing challenges as a result of COVID-19, One Heart Worldwide (OHW) and FWD conceptualized “an emergency helpline support program” for MNH service providers working in remote birthing centers across the country in order to overcome geographical barriers and improve access. The two main objectives of the program include: 1) to provide real time clinical advice, and 2) to bridge gaps between remote service providers and the health system by developing a proper communication system.

The purpose of the research was to assess effectiveness and feasibility of this MNH helpline program using the REAIM framework, which is defined as:

- **Reach**: Percent of pregnant women reached by intervention
- **Effectiveness**: Percent of cases managed within health facilities, percentage decline in referred cases
- **Adoption**: Percent of health facilities using MNH helpline
- **Intervention**: Usefulness and implementation challenges
- **Maintenance**: Cost for each consultation

The research was initiated after approval from the Family Welfare Division (FWD) and Nepal Health Research Council (NHRC). In close partnership with NESOG, One Heart Worldwide carried out major activities highlighted in Figure 1.

IMPLEMENTATION PROCESS OF MNH HELPLINE PROGRAM

- Formulation of a pool of clinical experts, who were gynecologists working in various hospitals of the country and/or MDGP/ASBAs working in district hospitals.
- In each study district, 3-5 experts were assigned for consultation and their mobile numbers were provided to the HFs/birthing centers.
- Guidelines for using the helpline were developed, and all MNH service providers and experts were oriented on it.
- Referral Flex, containing contact details of experts, vehicle/ambulance drivers, referral centers and other concerned stakeholders was provided to the HFs/birthing centers. We also provided NRs 200 as a top up to each HF to make helpline calls.

METHODOLOGY

The research methodology was an implementation research approach based on an explanatory study design. The study was carried out in 551 health facilities (HF), including birthing centers from 14 OHW working districts. Both qualitative and
quantitative data were collected. The research team gathered quantitative data from nurses at HFs where the health staff had maintained telephone log books and vehicle log books between July 2020 and June 2021. In the telephone log books, the nurses recorded all relevant details on use of the MNH helpline. This data included 1) the date and time of call, 2) the name of the expert contacted, 3) the reason for the phone call, 4) any suggestions received, 5) activities carried out, and 6) outcome of cases. In the vehicle log book, health staff recorded details on the mode of transportation used (ambulance/hired vehicle/stretcher/helicopter) to reach the referral center, and the cost incurred while referring to higher referral center. We also collected baseline (May 2020) and end-line data (July 2021) from the HFs on referral indicators like availability of stretchers, vehicle/ambulance driver’s numbers, referral phone number for the referral center, knowledge of service providers on helilifting process, etc. For qualitative data, we hired research assistants who conducted telephone interviews with 28 clinical experts and 53 clinical nurses involved in the study to assess their perception, experiences and challenges on the use of the helpline.

**FINDINGS**

- Of the 551 facilities, only 160 facilities (29%) used the MNH helpline. The reasons for not using the helpline were a lack of nearby referral centers, availability of and comfort level with district SBA mentors, few or no complicated cases in the facilities, unanswered calls, lack of timely response by some experts, and poor telephone network. Some participants in the study didn’t know about the helpline because they either missed the training or were newly transferred to the facility.
- During the period of July 2020-June 2021, there were 429 consultations using the MNH helpline from 160 facilities. Month-wise trends of helpline usage showed more use during the initial phase of the program as well as during the monsoon season (Figure 2). Similarly, there was a huge variation in use between districts where more users were from Dolakha, Dhading and Kavrepalanchowk districts, while the least number of users were from Ilam.
- More than one fifth (21%) of the consulted cases were managed without making a referral to the next level health facility. More than half (57%) were consulted with experts within their home district.
- More than half (56%) of the consultations were for delivery related problems followed by ANC (28%) (Figure 3). The top 5 delivery and ANC related problems discussed in the consultations included prolonged labor, eclampsia, post-dated pregnancy, retained placenta and postpartum hemorrhage. However, among the cases, there were 24 neonatal deaths (6%), 3 stillbirths (<1%) and 1 intrauterine fetal death (<1%).
- Among those who were referred, nearly one third (30%) used ambulances, another one third (30%) used hired vehicles, 5% used helicopters [heli-lift] while the remaining used public vehicles, stretchers and trucks for transport.
- A total of 20 cases (4.5%) were heli-lifted. Among them, 4 were eclampsia cases, 4 PPH, 2 retained placenta, 2 prolonged labor, 1 premature rupture of membrane, 1 preterm baby, 1 preterm labor, 1 sepsis, 1 meconium stained syndrome, 1 triplet delivery, 1 postdated, and 1 was malpresentation with hand prolapse. Among these cases, 18 survived while 2 neonates died (MAS, preterm).
- The average cost spent for transportation during referral was NRs 5118 (Min: 500, Max: 20,000)
- Compared to the baseline data, referral indicators in the HFs consisting of the availability of the contact numbers of vehicle drivers and the number of referrals to HFs were hugely improved.
- The majority of clinical experts and nursing staff involved in the project expressed their satisfaction on the MNH helpline as it helped save the lives of mothers and newborns in a number of cases.

![Figure 2: Number of Consultations using the MNH helpline by month](image)

![Figure 3: Types of cases consulted (%) (N=429)](image)
EXPERIENCES OF NURSES ON USE OF THE MNH HELPLINE

According to the nurses from remote HFs, consultations with experts using the MNH helpline helped them to make decisions in emergencies, to increase trust of service recipients, to save costs, and to help the facilities provide appropriate MNH services.

“This program makes us feel like we have a doctor on site even if our health post is far from a hospital - about 6 to 7 hours away. With this consultation with a doctor, mothers are still getting the services of a doctor.”
- Nurse, Dolakha district

“In one case, the mother had a high fever and blood pressure. After a video call consultation with a doctor, the patient received an injection and had a normal delivery. We aren’t well informed about cases like hypertension. The helpline helped us in building our confidence and managing the case properly.”
- Nurse, Tipling, Dhading district

EXPERIENCES OF EXPERTS ON USE OF MNH HELPLINE

According to the clinical experts, the MNH helpline helped them to save the lives of mothers and newborns and to manage cases within the HF, including cases of PPH, breech presentation, no labor progress etc. by using various methods like video consultation, to improve the timeliness of referrals while also building the confidence and technical skill levels of the nurses.

“There was one case of pre-eclampsia very late at night. The situation was not normal, so I asked for the mother to be referred but the patient was in poor health and there was no ambulance available. I asked for the SBA to administer emergency medicine but it was not available in the health facility. In the morning, the nurse bought medicine from a nearby medical facility after which the patient had a normal delivery.”
- Clinical expert assigned to Sankhuwasabha district

“In some cases when we cannot manage within the District Hospital, we directly refer callers to Kathmandu through the Helpline. In such situations, it avoids delays and saves time.”
- Clinical expert, Dolakha district

Based on an analysis of the REAIM framework, the MNH helpline was found to be effective and feasible in Nepal’s context (Table 1).

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<th>COMPONENTS</th>
<th>ACHIEVEMENTS</th>
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<td>REACH</td>
<td>Reached 29% of pregnant women (estimated expected pregnancy for 14 districts = 84,792, we assumed 20% deliveries in rural birthing centers and 15% complications).</td>
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<td>EFFECTIVENESS</td>
<td>Of 429 cases, 21% of consulted cases were managed without making a referral to other facilities; timely referral in cases of need, improvement in referral indicators of HFs.</td>
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<td>ADOPTION</td>
<td>Out of 551 HFs, 29% used the MNH helpline.</td>
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<td>IMPLEMENTATION</td>
<td>Usefulness: Increased confidence and skills of nurses, improved decision making during emergencies, timely referrals conducted. Implementation challenges: Calls not received by experts, frequent change in experts, network problem, lack of readiness of HFs for service provision, lack of competency of HWs, under reporting/no reporting on use of helpline.</td>
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<tr>
<td>MAINTENANCE</td>
<td>Direct cost per case consulted was NRs. 2,048 ($20).</td>
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CHALLENGES WHILE PROVIDING CONSULTATIONS SHARED BY CLINICAL EXPERTS:

Lack of competencies of HWs to manage as per the consultation, non-availability of some lifesaving drugs and medicines while managing the emergency case, high risk of miscommunication using telephone because of frequent network problems, consumption of a large amount of time for experts in teleconsultation and thus impacting family and personal lives were the major challenges shared by clinical experts.

IMPLEMENTATION CHALLENGES: We also encountered a few implementation challenges as follows:

- Underreporting/no reporting on the use of helpline by nurses.
- Frequent change in district level clinical experts.
- Difficulties to coordinate with referral centers.
CASE STORY OF A FEMALE WHO FACED COMPLICATIONS DURING DELIVERY

A 32-year-old woman, in Taplejung district experienced a highly complicated case of hand presentation (when the hand is exposed before the head of the baby during birth delivery), which can potentially risk the lives of both the mother and the baby if proper clinical intervention does not occur. “My last hope for her safe birth delivery was to immediately get advice urgently from a highly qualified and experienced gynecologist and we had so little time,” recalls SBA nurse of Santhakra Health Post where OHW has helped to renovate birthing centers and equip them with quality maternity equipment. There are no doctors in the remote health posts in Taplejung, which is often the case in most of Nepal’s remote village wards, and the only way for the nurses to request for emergency airlift is to call on the city-based maternity hospitals or medical centers. Her alternative plan was to send the mother-to-be to the district hospital, which takes over five hours of rough drive on the rocky trails, but she was afraid that the harsh journey could risk the lives of both the mother and her baby.

Using the MNH helpline, the SBA was able to communicate with a prominent specialist from Kathmandu who gave her step-by-step instructions on how to safely manage the hand presentation complication. The doctor advised her to give xylocaine (a medication to relieve pain administered by inserting a tube into the urinary tract) and push the baby’s hand gently inside by lifting the leg of the mother. After nearly two hours, the SBA was able to deliver a healthy baby and keep the mother safe. The nurse recalls how she got so emotional fearing that the mother would not pull through. She shares how the doctor on the phone was giving his best medical advice and also counseling her to calm her. “Without the MNH helpline, I don’t know how we would be able to manage such complications and today, I feel so confident with this experience and new knowledge,” says the SBA nurse.

TABLE 2: LESSONS LEARNED AND ACTION ITEMS NEEDED TO IMPROVE THE PROGRAM

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<th>LESSONS LEARNED</th>
<th>ACTION ITEMS</th>
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| NEED TO STRENGTHEN POOL OF EXPERTS | • Dedicated experts should be available 24 hours  
• **Video calls** can be used whenever available |
| NEED TO STRENGTHEN REFERRAL | • Experts should be oriented on where to refer  
• Strengthen **linkages between HFs and referral hospitals**  
• Advocacy for reducing administrative procedure for heli-lifting |
| NEED TO BUILD CAPACITY OF HEALTH WORKERS | • Refresher training to MNH service providers on the helpline  
• MNH helpline orientation should be conducted regularly for newly recruited ones |
| REPORTING SHOULD BE IMPROVED | • Incentives to experts may motivate them well  
• Reporting based payment to MNH service providers  
• **Simple reporting** can be explored |
| IMPROVE READINESS OF HEALTH FACILITIES | • Availability of essential drugs and supplies  
• Improve competencies of health workers for providing MNH services |

CONCLUSION AND A WAY FORWARD:

Clinical decisions made through the experts’ consultations and timely referral through the MNH helpline can help improve maternal and neonatal health outcomes in Nepal. This program should be scaled up at the national level with engagement of local, provincial, and central level stakeholders, by strengthening the pool of experts, by improving readiness of HFs and by maintaining strong linkages between health facilities and referral centers.

REFERENCES: