

Support to the Safe Motherhood Programme

Strategic Issue Paper

Emergency Obstetric Care Monitoring: A Proxy for Assessing Progress in Safe Motherhood Programming

January 2007

Summary

The paper reviews global evidence supporting the use of EOC monitoring as a proxy for assessing progress towards reducing the maternal mortality ratio and the impact of safe motherhood programming. Experiences of monitoring EOC services in Nepal in 13 districts are documented, providing valuable information in support of this approach. The four indicators used to monitor service utilisation and quality of care (percentage of deliveries in an EOC facility, met need for direct obstetric complication care, met need for caesarean sections or caesarean section rate and case fatality rate) show trends of increasing utilisation over a period of eight years and a generally low case fatality rate. This reflects the effects of safe motherhood programme inputs in these districts, and further analysis of data could yield valuable information about local situations. SSMP is supporting the integration of EOC monitoring into the government Health Management Information System, moving away from district based project monitoring to a more comprehensive national approach to this important activity.

1. Background

In the drive to reduce maternal and neonatal mortalities, the national safe motherhood programme in Nepal is focusing on achieving skilled attendance at every birth (both institutional and home), developing a functioning and effective referral system and ensuring access to basic and comprehensive emergency obstetric care (B/CEOC) facilities for women with complications. It is estimated that, on average, 15 percent of pregnancies will have direct obstetric complications¹, which cause a large majority of maternal deaths (70-75 percent)², although all are manageable in a CEOC facility and many at BEOC level³. Timely utilisation of B/CEOC facilities is therefore seen as a prime means of preventing maternal deaths and disabilities.

The millennium development goals aim to reduce the maternal mortality ratio (MMR) by three quarters by the year 2015. In order to assess progress towards this, it is essential to obtain a robust and reliable figure for the MMR in Nepal. The Nepal Family Health Survey conducted in

¹ Direct obstetric complication includes antipartum haemorrhage, postpartum haemorrhage, eclampsia/pre eclampsia, puerperal sepsis, prolonged/obstructed labour, abortion complication, and ectopic pregnancy.

Maine, D., Akalin Murat Z., Ward M. V., Kamara, A.; 1997, *The design and Evaluation of Maternal Mortality Programmes*. Center for Population and Family Health, School of Public Health, Columbia University.

² Pathak, L.R., Malla, D.S., Pradhan, A., Rajlawat, R., Campbell B.B., Kwast, K., 1998, *Maternal Mortality and Morbidity Study*, Family Health Division, Department of Health Services, Nepal.

Maine, D., 1993, *Safe Motherhood Programs: Options and Issues*, Center for Population and Family Health, School of Public Health, Faculty of Medicine, Columbia University, New York.

³ BEOC includes following signal functions a) Antibiotics (injectables), b) Oxytocics (injectables), c) Anitconvulsants (injectables), d) Manual removal of placenta, e) Removal of retained products, f) Assisted vaginal delivery and CEOC includes all the BEOC functions and g) Caesarean section and h) Blood transfusion.

1996 estimated the MMR at 539 per 100,000 live births, based on the sisterhood (direct) method for the reference period 1990 to 1996. A model-based estimate for a number of countries carried out for the year 2000 by the World Health Organisation (WHO), UNICEF and UNFPA gave the figure of 740 per 100,000 live births for Nepal⁴, and a variety of other estimates have been quoted. Such uncertainty makes it difficult to reliably assess the impact of programmes. Obtaining a robust estimate of the MMR is difficult and costly, as less rigorous studies may be unreliable. A very large household survey conducted in Bangladesh in 2001 gave an estimate of the MMR with a large confidence interval of about the same range as that obtained with the sisterhood method (which was also used in the same survey). This indicates that MMR estimates from these methods do not provide information that is sufficiently reliable to accurately monitor progress towards the millennium development goals⁵. Coverage by the system of vital registration, which is widely used in the developed world and yields the best results, is very poor in Nepal and unlikely to improve sufficiently in the foreseeable future to provide a robust and reliable estimate of the MMR.

Bearing these constraints in mind, WHO/UNICEF/UNFPA recommended a set of seven process indicators, all related to MMR but different. These indicators enable the availability, utilisation and quality of Emergency Obstetric Care (EOC) services to be monitored. As the coverage and utilisation of services increases, with good quality of care, it can be argued that maternal mortalities will be prevented. Thus the set of process indicators used for monitoring EOC services can act as a proxy for the maternal mortality ratio⁶. McCarthy and Maine⁷ developed a framework which identifies the status of women, their families and communities as distant determinants and health and reproductive status, access to the health services, health care behaviour/utilisation of health services as intermediate factors determining the number of pregnancies a women will have in her lifetime, whether she will have obstetric complications and whether these result in pregnancy related death or disability. Thus it can be seen that the MMR is affected not only by service related factors, but also by a huge range of environmental factors, often beyond the scope of safe motherhood services to address. Unlike impact indicators, such as the MMR, process indicators have the advantage of providing information about the action needed to improve programme effort. They are also more responsive and generally less expensive to implement than impact indicators⁸.

2. EOC Monitoring Initiatives in Nepal

As a part of the Maternal Mortality and Morbidity Study⁹, process indicators were generated from the data obtained from five districts of Nepal, which included three first phase Nepal Safer Motherhood Project (NSMP) districts. In the NSMP districts EOC data was regularly collected from 1997 during the life of the project, to monitor progress, whereas in the other two districts the data collection was a single exercise. NSMP was later extended to six additional districts and UNICEF implemented similar safe motherhood interventions in four districts from the fiscal

⁴ WHO, UNICEF and UNFPA (nd). *Maternal Mortality in 2000: Estimates developed by WHO, UNICEF and UNFPA*.

⁵ Hill, K., Arifeen, S.E., Koenig, M., et al., 2006, *How should we measure maternal mortality in developing world? A comparison of household deaths and sibling history approaches*, World Health Bulletin, March 2006 (84)

⁶ If all 15 percent of direct obstetric complications are treated and no one dies, then the maternal mortality is reduced by 70-75 percent.

⁷ McCarthy, J., and Maine, D., 1992, *A framework for analysing the determinants of maternal mortality*, Studies in Family Planning Vol. 23(1) January/February 1992.

⁸ Wardlaw, T., Maine, D. (nd). *Process Indicators for Maternal Mortality Programmes*. Safe Motherhood Initiatives: Critical Issues, PP 24-30

⁹ Ibid 2

year 1999/00. Since then all ten additional districts have been generating process indicators to monitor progress.

In 2001 NSMP provided support to the Demography Section of Family Health Division (FHD) of the Department of Health Services (DoHS) to institutionalise the process indicators into the Health Management Information System (HMIS). This was initiated through a number of activities, beginning with introduction of recording reporting tools, development of a users' manual on EOC monitoring, and provision of training on EOC monitoring for government staff at B/CEOC sites in the 13 districts. The HMIS and Demography Section officials and the Nepal Society of Obstetricians and Gynaecologists provided professional input as trainers. A mechanism was established in the HMIS section for receiving monthly EOC monitoring reports from the 13 districts with other routine reports and sending them to the Demography Section for computerised data entry and analysis. This was an important move in placing responsibility for record keeping, reporting, analysis and follow-up within the government system, where previously it had been covered by NSMP and UNICEF project staff.

The indicators used for monitoring safe motherhood were:

- Percentage of deliveries in an EOC facility
- Met need for direct obstetric complication care
- Met need for caesarean sections or caesarean section rate
- Case fatality rate.

The first three indicators monitor coverage and utilisation of services, while the last one (case fatality rate) monitors quality of care in the facility.

3. Progress and Lessons Learned

In the fiscal year 2005/06, the National Health Training Centre (NHTC) began conducting EOC monitoring training under its approved annual work plan budget. As a first step, NHTC carried out training of trainers for staff from regional health directorates, regional training centres and selected regional hospitals, with support from Family Health Division and Support to the Safe Motherhood Programme (SSMP). The integration of EOC monitoring into regular government training was an important step in its institutionalisation and scaling up, as a part of the package for B/CEOC service providers and district level data management staff, such as medical recorders and statistical assistants. The retirement of the then Chief of HMIS Section, created a void until the new Chief and a statistical officer were trained during the recent western regional EOC monitoring training. The regional level trainings were another important milestone in the process of integrating EOC monitoring into the HMIS. Trainings were conducted at four of the regional health training centres (eastern, central, western and far western). Support was requested from SSMP, and two core team advisers assisted with the western and central regional trainings. It is not for SSMP to provide support for all regional level trainings, and at present staff from the HMIS Section also cannot conduct the trainings as they have not been trained in EOC monitoring. It is therefore important that regional training centres develop their own capability to conduct EOC monitoring training effectively and continue to do so on a regular basis. One issue to be addressed, which is an ongoing problem within government systems, is the complaint that in some cases key staff did not receive training or those who received training were then transferred elsewhere.

The HMIS section conducted an information system tool revision workshop in December 2006, during which all existing monitoring tools were incorporated in the revised set of Health Sector Information System tools. The EOC monitoring tools were slightly revised to allow monitoring of EOC service utilisation by ethnicity and caste. The revised tools also include data on safe abortion, newborn health, maternity incentives and social inclusion monitoring. Since the new tools have not yet been incorporated into the HMIS tools, SSMP provided funding for printing and distribution of the EOC monitoring manuals, registers and reporting forms in the original 13 monitoring districts and additional districts which received training last year.

The lessons learned can be summarised as follows:

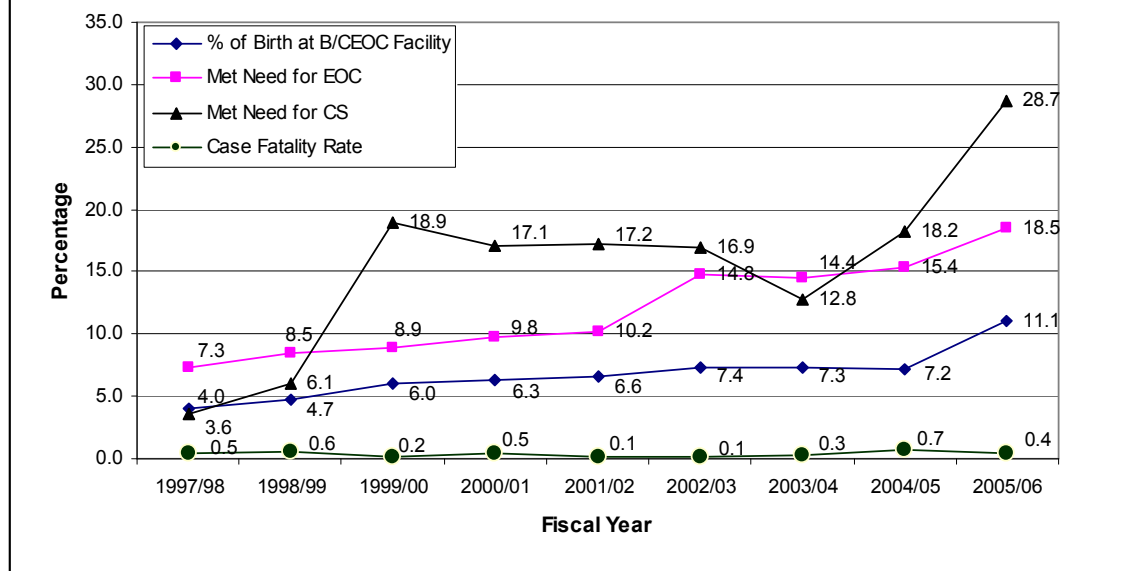
- The successful generation of trend data on EOC monitoring from 1997 has demonstrated the importance and feasibility of scaling up EOC monitoring in Nepal.
- HMIS staff should be involved as trainers in EOC monitoring training and take responsibility for following up and supervising all aspects of monitoring, including ensuring timely reporting, checking data quality, data entry, analysis, and feedback.
- NHTC needs to ensure that potential regional trainers are carefully selected, prepared and retained. Regional health training centres should ensure that, in addition to regular resident trainers, at least the Statistical Officer from the regional health directorate is included and Medical Recorders and Obstetrician/Gynaecologists from districts who are able and willing to act as trainers.

4. EOC Service Utilisation Trends

Figure 1 shows the trend over time of four key process indicators in the 13 monitored districts. Overall it shows increasing trends in the proportion of births in B/CEOC facilities, met need for EOC and met need for caesarean section. The figure of 28.7 percent met need for caesarean section is higher than might be expected, but it should be noted that the three CEOC sites included in the monitoring are zonal hospitals catering to the populations of other districts. Since the ideal levels of met need for EOC and caesarean section are 100 percent, although both are increasing, there is still a large unmet need for EOC (81.5 percent) and caesarean section (89.9 percent), indicating a continuing need for efforts to increase service utilisation. As service utilisation is a function of both demand and supply of services, issues such as poverty, low status of women, social/cultural practices, terrain, and limited transport need to be addressed in order to increase demand for services. Service availability and quality also needs to be addressed through provision of trained human resources (doctors and nurses) and other service side initiatives. SSMP recognises the need to use this dual approach of service strengthening and community level access interventions. The acceptable case fatality rate for quality of care is less than one percent, and in the thirteen districts it was found to be within this, on average, although in some years it rose to above this level in some districts, indicating a need to investigate the reasons and address quality of care issues.

**Figure 1: EOC Service Utilisation and Quality of Care
(13 District, Nepal): 1997/98-2005/06**

Source: Family Health Division, DoHS



Analysis of district specific process indicators enables identification of local problems. For example, transfer out of a trained doctor resulting in reduced met need for EOC and C/s section, either because there is no doctor or because the remaining doctor(s) is/are over burdened.

5. Recommendations

- For the immediate future SSMP will need to continue providing support to NHTC in conducting national and regional level EOC monitoring trainings through the financial aid budget. At present there are 36 CEOC and 43 BEOC sites in the country, and only a few have received EOC monitoring training. Scaling up EOC monitoring to cover all B/CEOC sites is a major task that will require strong commitment from NHTC, HMIS and FHD staff to implement. Developing their capacity to plan and scale up this initiative will require continuing technical support and encouragement from SSMP.
- An overall review and revision of HMIS has been initiated and the revised tools will be piloted before finalisation. The tools will then be implemented as part of the new Health Sector Information System strategy in health institutions across the country. Implementation of the Health Sector Information System strategy will need large amounts of funding, which may not be sufficiently available from commitments from other sources. HMIS needs to develop a Gantt chart with detailed activities under the strategy, time line and budget. SSMP will need to provide funding and technical support for this important activity.
- At present reporting compliance is very poor in the districts where EOC training has been more recently introduced. FHD and HMIS need to follow-up on this to ensure timely reporting from districts and good record keeping. The district based staff of SSMP contracted partners can provide valuable support in this endeavour, although in the longer term system wide mechanisms need to be developed to improve reporting compliance and provide technical supervision.