



Nepal Safer Motherhood Project a part of HMGN Safe Motherhood Programme

Sustainable Monitoring for the Nepal National Safe Motherhood Programme

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ABBREVIATIONS

ANM	Auxilliary Nurse Midwife
BEOC	Basic Essential Obstetric Care
BEmOC	Basic Emergency Obstetric Care
CEOC	Comprehensive Essential Obstetric Care
CEmOC	Comprehensive Emergency Obstetric Care
CS	Caesarean Section
DFID	Department for International Development
FHD	Family Health Division
HMGN	His Majesty's Government of Nepal
HMIS	Health Management Information System
IEC	Information, Education, Communication
MCHW	Maternal and Child Health Worker
MOH	Ministry of Health
NSMP	Nepal Safer Motherhood Project
OPD	Out Patients Department
PHCC	Primary Health Care Centre
PFAD	Planning and Foreign Aid Division
QoC	Quality of Care
SM	Safe(r) Motherhood
SMP	National Safe Motherhood Programme
TBA	Traditional Birth Attendant
UN	United Nations
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organisation
WRTLH	Women's Right to Life and Health

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1. BACKGROUND

The Nepal Safer Motherhood Project (NSMP), which is funded by the UK Department for International Development (DfID) contributes to improved maternal health in selected districts of Nepal as part of His Majesty's Government of Nepal (HMGN) National Safe Motherhood Programme (SMP). It is managed by Options Consultancy Services Limited.

The project has three main components:

Improving service provision, by upgrading midwifery and essential obstetric care services;

Increasing access by creating awareness of, and demand for, services;

Contributing to policy and strategy development for the National Safe Motherhood Programme.

The first phase of the project focused on improving both the quality of comprehensive essential obstetric care (CEOC) and access to three district hospitals (Baglung, Surkhet and Kailali). A successful output to purpose review of the project's first phase took place at the end of June 2000. This second phase of the project started in January 2001 and will work in a further six districts. The second phase aims to expand service delivery activities by ensuring basic essential obstetric care (BEOC) at selected health facilities in five districts as well as supporting CEOC at one additional district hospital. A total of nine districts (representing 13% of the population of Nepal) will be supported. The access component will also be enhanced. The strategy of the second phase aims to ensure that project inputs are institutionalised within existing government systems so that they are sustainable.

The UNICEF implemented Women's Right to Life and Health (WRTLH) project commenced in 2000. Support is being provided for CEOC in four districts. NSMP has collaborated in the design of the UNICEF project and is closely supporting its implementation by drawing upon NSMP's lessons learnt. As both projects are so closely aligned in their purpose and in their outputs, NSMP and UNICEF are committed to developing mechanisms for joint programming at an operational level to maximise resources and ensure consistent support to the National Safe Motherhood Programme.

NSMP's purpose ("Sustained increase in utilisation of quality midwifery and obstetric BEOC and CEOC services") has, to date, been measured by the use of five process indicators. These indicators are closely related, but not identical to, those promoted by UNFPA/UNICEF/WHO (1996)¹ hereafter referred to as the UN Process Indicators. Project staff have worked with Government staff to improve facility data collection so that the project can report progress using these indicators. Under the direction of the Family Health Division (FHD) of the Department of Health Services both UNICEF and NSMP have agreed to use the UN Process Indicators and to utilise the same management system to collect, process and utilise data. HMGN have included the UN Process Indicators in the National Safe Motherhood Programme Plan. Although the current HMIS does not currently capture all the data required all parties are open to planning a process whereby the data is housed and analysed by the FHD with the long-term view that it can be incorporated into the HMIS.

¹ UNICEF/UNFPA/WHO (1996) Guidelines for Monitoring the Availability and use of Obstetric Services

2. OBJECTIVES OF ASSIGNMENT

The consultancy was proposed to respond to three interrelated areas of need and interest:

NSMP's monitoring needs; NSMP and UNICEF's "joint programming" approach; and increased interest at National level in monitoring using the UN indicators. There were three main objectives:

1. Review the indicators and data collection system being used by NSMP currently and advise on transfer to standard UN Process Indicators.
2. Identify a mechanism to establish and manage a monitoring system for EOC in the thirteen districts supported by UNICEF & NSMP, which can be scaled up in the future.
3. Review the purpose level indicators and targets included in the National SM Plan, 2001-2017 and evaluate the current status and potential of the Nepal HMIS for monitoring those indicators.

(For detailed Terms of Reference, including specific Tasks and Outputs, see Annex 1).

3. STRATEGY OF CONSULTANCY

In order to meet the objectives of the assignment we pursued the following strategy:

- Consulting with key stakeholders (Family Health Division [FHD]), Planning and Foreign Aid Division [PFAD], UNICEF, UNFPA, NSMP) in order to verify agreement on indicators, and establish consensus on managing their introduction and use
- Reviewing the current NSMP monitoring system and links with the National Safe Motherhood Plan
- Exploring current and potential capacity of existing HMIS to capture indicators
- Suggesting modifications, including interim data collection systems, to fill gaps identified
- Proposing short, medium and longer term actions

We reviewed a number of key documents including studies of maternal health services in Nepal (Annex 2) and made a field visit to Kailali District where we visited health facilities at both CEOC and BEOC level (Annex 3). Recommendations are made throughout the report, and are summarised in Annex 15.

4. THE UN PROCESS INDICATORS.

The UN Process Indicators measure availability, utilisation and quality of essential obstetric care, as summarised in Table 1. More detailed descriptions are in Annex 4.

Table 1. UN Obstetric Process Indicators

Description of indicator	Type of indicator
<u>Availability of EOC</u> : Number and distribution of Basic and Comprehensive Essential Obstetric Care (EOC) facilities / 500,000 population*	Availability
<u>Institutional Deliveries</u> : Proportion of expected deliveries conducted in health facilities * *	Utilization
<u>Met need for EOC</u> : Proportion of expected obstetric complications treated in health facilities	Utilization
<u>Caesarean Section Rate</u> : Proportion of expected deliveries by CS	Utilization
<u>Case Fatality Rate</u> : Proportion of women dying of obstetric complications in health facilities.	Quality

* The Nepal Safe Motherhood National Plan refers to Essential Obstetric Care (EOC). The concepts covered by EmOC and EOC in the Nepal context are very similar. Elsewhere in this report the term Essential Obstetric care (EOC) has been used for consistency.

** In the Nepal Safe Motherhood National Plan, this indicator has been amended to measure 'deliveries by a skilled attendant'.

The data items needed to measure these indicators are presented in Table 2.

Table 2. Data items required to measure the UN Obstetric Process Indicators

<ul style="list-style-type: none"> • Catchment population and expected births • EOC functions provided by each health facility • Number of attended deliveries and place of delivery • Number of women treated for obstetric emergencies in each health facility • The number of CS done • The number of women dying of obstetric emergencies in the health facility
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5. NSMP MONITORING SYSTEM

5.1 FINDINGS AND RECOMMENDATIONS

5.1.1 *Wording of purpose level indicators*

The current purpose level indicators (Annex 5) are similar to and compatible with the UN Process Indicators and the National Safe Mother programme indicators. The emphasis is on the three utilization indicators though indicators of availability and quality of care are included in other parts of the LogFrame. The indicators are expressed in a rather complicated way but could easily be described in slightly simpler language.

Recommendation

NSMP should agree, with the National SMP and UNICEF, a standard wording to be used in the description of their indicators thereby ensuring all partners use the same. These indicators and their wording should be based on the standard five UN indicators with minor adaptations according to local needs.

5.1.2 *Transferring to UN morbidity categories*

The current data collection system for NSMP is unsustainable and heavily reliant on project staff. The main data collection instrument is a replica of that used for a 1998 study of maternal morbidity and mortality and relies on ICD10 morbidity categories. This results in a long list of obstetric conditions that do not match the list used for the UN Indicators. Data collection would be much easier if the UN categories were used.

Recommendation

NSMP should change to the UN system of classifying obstetric complications. Annex 8 indicates the possible grouping of current morbidity categories needed to transfer to the UN categories.

NSMP has identified anaemia as an important pregnancy related morbidity and has included this in their definition of obstetric complications. However, anaemia is an indirect, not a direct obstetric condition and is not included in the UN categories.

Recommendation

The project should exclude anaemia from the list of obstetric conditions used to calculate met need for EOC. The project should continue to collect data on cases of anaemia as a separate indicator, possibly along with data on other important indirect pregnancy related conditions such as hepatitis, TB and malaria.

5.1.3 *Catchment population data*

It will be important that the district catchment population figures used for the denominators are compatible across monitoring systems and are used consistently. The annual estimates of catchment population and expected births produced by HMGN for each district and health facility are ideal for this purpose. These will be updated soon following publication of the recent Census but the current estimates can be used in the meantime.

Recommendation

NSMP and other partners of the National SMP should use *district* Catchment Population and Expected Birth Estimates distributed by the Planning and Foreign Aid Division of HMGN. The Planning and Foreign Aid Division (PFAD) and FHD need to agree on the projections to be used for the catchment populations, and both Divisions should then use the same data consistently. NSMP could consider facilitating this dialogue. Calculations can be based on data made available from the 2001 census.

5.1.4 Comparing performance in CEOC and BEOC

It will be important for the monitoring system to distinguish between and compare, as well as combine, data (on births and complications treated) from BEOC facilities and CEOC facilities.

Recommendation

Data from BEOC facilities in any one district should be initially pooled separately from hospital data so that the performance of BEOC and CEOC can be compared. Data from CEOC and BEOC in any one district should be combined to give a picture of the district as a whole. NSMP can arrange to look at the performance of project supported facilities in partnership with the District Public Health Office.

5.1.5 Ensuring a district-wide picture

In order to have a complete picture of essential obstetric care in NSMP districts, and to document any substitution effects, the project needs to have access to data from all health facilities where deliveries are supervised.

Recommendation

The project should ensure it has access to data on attendance at, or place of delivery from all health facilities in the districts in which it works and not only from the facilities it actually supports. This data is already available from the District Health Offices.

Recommendations

The project could consider counting referrals from BEOC to CEOC as a separate data item as this indicator can help to measure the level of functioning at BEOC facilities. However, monitoring referrals as part of an information system has proved difficult in several countries that have tried to do this and should therefore not be considered a priority. This data can however be useful for managers at facility level.

5.1.6 Measuring availability and quality

The UN indicators for availability of essential obstetric care and quality of care (case fatality rate) do not feature in NSMP purpose level OVs. However, these indicators, or a near proxy, can easily be measured using the current monitoring system or any future modification of it.

Recommendation

The project should attempt to measure availability (especially of BEOC), and the case fatality rate (CFR).

Availability - the highest-level functions for BEOC facilities (and the most difficult to achieve) are removal of retained products (MVA or D&C) and assisted delivery (vacuum extraction or forceps). One of these functions (assisted delivery is the simplest to use) can be chosen to measure availability of BEOC through a routine system. CS can be used to measure availability of CEOC.

Case Fatality Rate - as long as maternal deaths in hospitals are correctly identified the case fatality rate for individual hospitals can be measured. Experience has shown that this indicator is only useful when used for facilities that have a reasonable volume of obstetric cases and a minimum number of deaths per year (5 – 10 or more), which was not the case in those district hospitals supported in Phase 1 of NSMP. This recommendation is therefore only for hospitals with this number of deaths per year

NSMP has a strong focus on quality of care. As UN indicators alone do not provide sufficient measures for quality of care, the project is well placed to explore the implementation of additional and more sensitive indicators. The maternal death audit, while of value in identifying areas that need change (Annex 7), cannot be used for monitoring in its present form.

Recommendation

The project could explore whether a modified form of criteria based clinical audit (which measures improvements in case management) would be feasible. If a full case management audit seems too complex and resource intensive, the project could consider audit of single procedures or issues, which can be measured more easily. For example;

- Incidence of episiotomies
- Use of oxytocin infusion in the first & second stages of labour
- Post operative wound infections
- Time from admission to treatment

5.1.7 Revising NSMP spreadsheet

We reviewed the current Project spread sheet. This displays the numerical data that is currently collected at project field sites but does not present this data as proportions of target population.

Recommendations

The revised NSMP spread sheet will need to incorporate the following features:

- The obstetric complication categories will need to correspond to the new list
- The BEOC and CEOC facilities will need to be separated. The spreadsheet could have a separate entry for each BEOC and CEOC facility in a district if there are not too many of them, but certainly needs to display data for pooled BEOC and pooled CEOC facilities for each district.
- The target populations need to be included in the spread sheet
- The spread sheet needs to be constructed so that it automatically calculates proportions for the utilisation indicators.

A page from the DFID-funded Malawi Safe Motherhood project was provided during the Consultancy as an example of how some of these features can be incorporated, though NSMP will need to develop a project-specific one to meet their needs.

5.1.8 Support to counterpart

NSMP and UNICEF are fortunate that the FHD have appointed a new demographer to work with them on issues related to the HMIS. This staff member (Mr Sharad Kumar Sharma) has considerable experience of the HMIS from

his previous post at Regional Level and was a valued member of the consultancy team. He is becoming familiar with the UN Process Indicators under the direction of the FHD Senior Demographer. He currently has few IT and related resources available to him.

Recommendations

NSMP and UNICEF need to assess the training and equipment needs of their HMGN counterpart for HMIS work and arrange inputs as appropriate.

6. THE NATIONAL SAFE MOTHERHOOD PROGRAMME INDICATORS

The consultancy team and Mr Ajit Praban reviewed the purpose level indicators and targets included in the National Safe Motherhood Plan (Annex 6). We focused on the indicators and targets relating to utilization of EOC. These indicators are derived from the UN Process Indicators and are clearly and concisely worded. The purpose level indicators reflect utilization. Indicators for availability or quality of EOC are included at output level. Increased utilization is expected to follow from improvements in quality and availability combined with increased awareness.

Met need for EOC: The target of a 2% increase by 2006 seems quite conservative. We proposed aiming for an increase of 5% by 2006 at which time the target could be reviewed.

Deliveries by skilled attendants: A level of 60% by 2016 seems quite ambitious. We reviewed the expected rate of increase projected from DHS surveys and proposed that a provisional target for 2016 be set at 40% with a review of progress in 2006.

CS rate: The target for current levels to increase by 2% per year, is probably realistic in the light of NSMP experience but should be reviewed in 2006.

Deliveries in health facilities: A level of 20% by 2017 seems realistic but should be reviewed in 2006.

Other indicators - The indicators and targets for CPR and ANC seem appropriate and in line with changes observed in the 2001 DHS Survey. The target for postnatal care (PNC) may be rather ambitious and should be re-evaluated in 2006. It will be important to be clear about what is meant by postnatal care and what it is intended to achieve in terms of mothers health.

7. THE NEPAL NATIONAL HEALTH MANAGEMENT INFORMATION SYSTEM

7.1 FINDINGS

7.1.1 General

The consultancy team visited the Monitoring and Evaluation Section and Management Information Section of the Planning and Foreign Aid Division for a briefing on the Nepal Health Management Information System (HMIS) before visiting the field sites. In addition, one of the team members, Mr Sharad Kumar Sharma was very familiar with the system. The HMIS was redesigned in 1995. The many vertical programme information systems were combined to create a single integrated system intended to function as a management tool. The numbers of recording and reporting tools were reduced from over 130 to 36. A single comprehensive Annual Report is produced. Current donor support is mainly from UNFPA.

Following the field visit we benefited from a debriefing session with the Division Head. The HMIS managers are willing to consider changes to the system if these are important for programmes but expect proposed changes to be piloted first. They hope that programmes will consider removing indicators as well as adding them!

7.1.2 Capacity of the Nepal HMIS to monitor EOC

The Nepal HMIS clearly has the potential to monitor EOC using the UN Process Indicators. Some, but not all, of the data needed to monitor the UN Process Indicators are currently captured by the HMIS. However, almost all these data could be captured with only minor or moderate revisions of the current system. The current and potential situation is summarised in Table 3.

TABLE 3. DATA AVAILABLE FROM THE NEPAL HMIS

	CURRENT SITUATION	FUTURE POSSIBILITY
Catchment population and expected births	Routinely available	
EOC functions (e.g. assisted delivery)	Not available	Higher order functions (procedures such as assisted delivery) could easily be recorded and reported.
Attendance at and place of delivery	Routinely available	
Obstetric cases treated at BEOC and CEOC	Only available for outpatient attendances (which are unlikely to be life threatening). This format is compatible with UN Indicators.	Data on obstetric inpatient cases could be collected using the format used for outpatients.
Caesarean Sections	Not available	CS could easily be recorded and reported
Total / Direct obstetric maternal deaths	Data is collected on maternal deaths but is not distinguished by causal categories or place of death	Identification of maternal deaths can be made more accurate and should include place of death and cause.

7.1.3 Data flow through the HMIS

The HMIS collects maternity care data from all levels of the health system including Traditional Birth Attendants (TBAs). However, we focused mainly on the levels of the system where inpatient deliveries and management of obstetric complications could be expected i.e. Primary Health Care Centres /Health Posts (PHCC/HP), and hospitals. Sub-health posts can conduct supervised deliveries and this information is included in reports prepared by their respective PHCC/HP. The flow of information through the HMIS is summarised in Annex 9. Form 32 is used at SHP, HP and PHCC and is submitted to the district statistician. This information is aggregated into one district form 33.

Compilation of data from the public health system by the District Health Office (DHO) appears to be reasonably complete and forms are generally received and submitted on time. Examination of the Annual Report 1999/2000 and our own observations during our visit to Kailali District revealed that reporting from hospitals is often less than complete.

- A. For non zonal hospital districts; District hospitals medical recorders collect data from OPD (obstetric complications) and inpatients (including deliveries) and submits data to district statistician. He attaches this to form 33 and the two are sent to HMIS together. There is no district level aggregation of form 33 and form 34.
- B. For zonal hospital districts – form 34 is sent by the medical recorder directly to HMIS and Regional Director and not through the district statistician.

Feedback from the Department of Health Services to the DHO generally concentrates on the quality and completeness of reporting. There is little or no feedback from the DoH to hospitals.

The HMIS does not have access to data on obstetric care provided through the additional private sector. However, they do currently receive information on family planning services provided through this sector and the Head of FHD feels there are possibilities for collecting private sector information. The barriers are not so much administrative as the reluctance of private sector health facilities to release information on the volume of high return activities. There is a need to develop feedback mechanisms which respond to the needs of programmes at District level and which link all parts of the services.

7.1.4 Use of data

DHOs are encouraged to use the data they collect from PHC/HP level for programme management and are beginning to do so. The DHOs are issued with worksheet books annually for data synthesis, analysis and monitoring (Annex 10) and the District Statistical Officer is responsible for this work. In Kailali District the DPHO had produced graphs of the main indicators on their computer, which were displayed on the wall. In contrast there seems to be little use of data in hospitals and we did not see any graphs of activities on display.

The DPHOs are gradually being issued with computers and programmes to process the data collected at health facilities. In Kailali the software had ceased to work and they had been unable to get it repaired. They had continued with a manual system. This situation is said to have occurred in several other districts.

7.1.5 HMIS in hospitals

The main data recording systems in hospitals are medical case notes and inpatient registers. The HMIS issues standard inpatient discharge summary sheets for each patient, which are completed by the nursing and medical staff. This summary sheet was in regular use at the hospital we visited. The summary sheets we saw were reasonably complete and legible. They do not include any guidance categories for diagnosis or procedures, and in particular, no data to indicate whether a patient was pregnant/postpartum, if a delivery had occurred, or whether there were obstetric complications. Some hospitals, including Seti, have developed their own maternity discharge summary to

ensure that this information is recorded. Women admitted for delivery have a partograph and all inpatients have some sort of written medical notes.

Each hospital has a medical recorder who is responsible for storage and retrieval of medical records and for completing the hospital components of the HMIS. Medical records are meant to be kept for 5 years and be retrievable. The store we saw was too small even for one year's worth of records and was chaotic. The medical recorder admitted extreme difficulty in retrieving old records.

7.1.6 Registers

The Admission and Discharge Registers are standardised as part of the HMIS and kept in the Medical Recorders office. The Discharge Register is completed with information from the discharge summary sheet and serves as the main source of data for the HMIS monthly report. The Discharge Register we saw was legible and complete though the medical recorder told us that at times he develops a backlog of medical records to be entered in the Register.

There are no standard maternity registers. In Seti hospital the maternity ward had a printed Delivery Book that was being used for all maternity cases. There was no column specifically for obstetric complications or procedures and so it was difficult to identify these cases. Data was not being summarised in the Register at the end of each month. In the PHC we visited they were using separate books (with hand drawn columns) for deliveries and other maternity cases. Here they had produced monthly summaries though the data was not being analysed.

The HMIS does include a Maternity Register. However, this is designed for use in antenatal clinics and does not capture the data needed to monitor obstetric services. *Data from this register should not be used to calculate the UN indicators.*

Although obstetric patients are admitted to a number of non-maternity wards in Seti hospital, it was difficult to identify pregnant/postpartum patients or obstetric diagnoses from the ward registers.

7.1.7 HMIS Report Forms

The Nepal HMIS reporting system relies on two main instruments at district level. HMIS 32 & 33 and HMIS 34.

- HMIS 32 reports data from PHC/HPs.
- HMIS 33 has a near identical format and is used to report summated data from HMIS 32 plus data from hospital OPD.
- HMIS 34 reports data on inpatient discharges and morbidity.

Part of HMIS 32/33 is a one-page list of standard diagnostic categories for counting clinical cases managed. This list includes a list of obstetric complications very close to that used for the UN Process Indicators. The list could easily be modified to be identical to the UN list. The form does not report any obstetric function/procedures, and although it reports maternal deaths, it is not possible to differentiate between deaths in the community reported by TBAs and those occurring in health facilities.

HMIS 34 does not include any standard diagnostic categories. The medical staff and hospital record clerk are supposed to assign an ICD10 code and description to each discharge diagnosis. This is rarely done well or at all. The form does not report any obstetric functions/procedures including CS and blood transfusion. The information reported on HMIS 34 is clearly not adequate to monitor essential obstetric care in inpatient facilities.

7.1.8 Accuracy of maternity services data reported through HMIS

Using data from surveys it is possible to make an estimate of the accuracy of data collected by the HMIS. Comparison was possible for maternal deaths, deliveries by health personnel and for ANC coverage (Table 4).

TABLE 4. ACCURACY OF DATA FROM HMIS

	Survey results	HMIS
Maternal deaths in hospitals (annual)	700 ⁽¹⁾	98
Deliveries by health personnel ⁽²⁾	12.5% ⁽²⁾	8.1%
ANC coverage	42.2% ⁽²⁾	34.9%

⁽¹⁾ Pathak et al 1998

⁽²⁾ DHS 2001

HMIS data on delivery attendance and antenatal coverage, both reported through the DHO, is of the correct order. The deficit in the HMIS figures is likely to be due to non-reporting, and to use of the private sector. HMIS data on maternal deaths in hospitals is clearly incomplete indicating that the identification and reporting of maternal deaths in hospital needs attention.

7.1.9 Advantages and constraints of the Nepal HMIS

As a source of data for monitoring safe motherhood indicators the Nepal HMIS already has many positive features as well as a number of constraints.

The positive features are:

- HMIS can already monitor some obstetric care indicators
- Relatively few changes are needed to monitor all key indicators
- The system is already integrated

- The reporting of data and completion of annual report are reasonably timely
- Data reported through the public health system seems relatively complete
- Data is compiled at district level to some extent
- Population based denominators are used
- Visual displays prepared at district level for the public health services

The constraints are:

- The data recording system for maternity inpatients is non standardised and does not focus on collecting the key information needed for the UN Process Indicators
- The HMIS hospital report omits key data and has much irrelevant and unorganised information
- There is little or no linkage between hospital and public health data at district level and obstetric data is not combined at this level
- Critical analysis and use of data on obstetric services at district level is limited
- Even within hospitals, the system is very limited in its capacity to monitor quality of care

The Nepal HMIS clearly has the potential to develop the capacity to monitor safe motherhood using the UN Process Indicators fairly rapidly (1-2 years). In order to do this it will need co-ordinated technical inputs and donor support. However, this effort is worthwhile because it will result in a monitoring system that is institutionalised within the Nepali health system, is sustainable, will measure progress in districts of Nepal and allow comparisons between those districts with specific inputs and those without.

7.2 RECOMMENDATIONS

We recommend that introducing the UN Process Indicators into the Nepali HMIS is approached in a stepwise fashion and have grouped specific recommendations for immediate, medium and longer-term action. It is expected that NSMP, UNICEF, FHD and HMIS will work together towards these recommendations and reach consensus on the implementation details.

7.2.1 *Immediate Action*

Recommendation

Using the list of obstetric complications included in HMIS 32/33 as a guide, NSMP and UNICEF, with FHD and HMIS, should agree a standard list of complications that corresponds to the UN definition of a complicated case. Minimal changes are needed to the current list on the HMIS forms. A suggested list can be found in Annex 11.

Recommendation

Revise NSMP monitoring system so that it collects data that conforms to the new standard list of obstetric complications. The transition matrix in Annex 8 will help to accomplish this.

Recommendation

NSMP and UNICEF should support the HMIS to alter the list of obstetric complications on the next print run for HMIS 32/33 so that it corresponds to the new standard list.

Recommendation

NSMP/UNICEF should draft and pilot an improved obstetric inpatient reporting system that is designed for eventual incorporation into the HMIS. This could include the following components:

- A pregnant/postpartum (PPP) diagnosis stamp that includes the main obstetric complications and functions. Midwifery and medical staff need only tick the relevant boxes. The stamp would be used on the Discharge summary of all pregnant and postpartum patients allowing inpatient data to be transferred to the discharge register in a standard fashion. A draft stamp can be found in Annex 12.

- Insertion of a pregnant/postpartum (PPP) column in all hospital inpatient registers so those women with obstetric complications, and maternal deaths, can be identified consistently. This system will help identify women with obstetric complications who are admitted to parts of the hospital other than the maternity ward.
- Developing an interim inpatient report form, which would allow reporting of key obstetric complications and functions using data from the discharge register (A draft form can be found in Annex 13). This form would be used by all facilities (BEOC and CEOC), supported by UNICEF and NSMP where there are obstetric inpatients. It should only record information on births in facilities. It would be completed by the facility staff responsible for processing medical records and passed to the DHO. The DHO would need to synthesise and analyse data from BEOC and CEOC and prepare a summary for forwarding to central level. (Destination to be decided). The information would be used in conjunction with information currently reported reliably through the HMIS such as institutional deliveries.
- In order to standardise and improve data collection on maternity wards, NSMP/UNICEF should draft and pilot a standard inpatient maternity register. These registers will act as a tool for managing data on patients while they are in the ward and, because they can be used to identify cases of interest, they can monitor activities at local level (for instance to monitor quality of care issues). They can also provide a rapid check on data from other sources (e.g. number of deliveries). This could focus on deliveries but should be designed so that all patients admitted to a maternity ward can be included. This will avoid duplication and extra workload for the staff and ensure that information on maternity patients is kept in one place as far as possible. In larger facilities, the PPP column described above will identify obstetric patients admitted to wards other than maternity. In small facilities such as PHCCs, all obstetric patients (including those with abortion complications) can be recorded in the maternity register. At least three countries have developed appropriate maternity registers (examples can be found in Annex 14) and these registers can be used as a basis for design of a Nepali Maternity Register. Register design is best accomplished as a consultation process with users at all levels. Drafts need to be widely reviewed and preferably field-tested before finalisation.

Recommendation

Take action to improve the infrastructure of medical record stores in project supported districts so that they have enough space to store 5 years of records in an orderly fashion. In conjunction with the medical recorders a better record management and retrieval system needs to be designed and implemented.

Recommendation

Facilitate a dialogue, for example help to arrange a round table meeting between some of the District officials involved, the relevant decision makers in HMIS and FHD, and NSMP/UNICEF in order to come to an agreement on management of data at each stage of the development process. The interim arrangements should follow as much as possible the current HMIS flow of information so that the HMIS is supported and so the integration is facilitated. The ideal arrangement would be for FHD (and possibly the NSMP and UNICEF project) to have access electronically to HMIS data if this is possible. It is important that HMIS is engaged in the process right from the start in partnership with the FHD demography unit. The expectation is that the EOC programme will roll out nationally and that more and more Districts will start to focus on EOC. HMIS needs to prepare for this.

Recommendation

Support improvements in the HMIS feedback mechanisms. These need to take account of the needs of programmes at District level. In relation to EOC it is particularly important that feedback loops between the DoH and hospitals are improved.

Recommendation

Recruit a dedicated consultant to work with the UNICEF/NSMP and FHD/HMIS to take on much of the work that will be generated and to support Sharad Kumar Sharmar. This person will need to be familiar with HMGN and the HMIS. They will also need to become familiar with the UN Process Indicators.

7.2.2 Medium-Term Action

Recommendation

Develop district level capacity to combine and use maternity care data from PHCs and hospitals. This process can be started through design and implementation of the pilot data collection system. The DHOs and hospital superintendents in target districts should be involved in this process from the start so that their experience feeds into development of the system and so that they see the benefits and develop commitment to the idea. This will prepare the way for introducing the new indicators into the HMIS at district Level.

Recommendation

Enhanced focus on monitoring utilisation of inpatient maternity care so that hospitals start to realise their potential for monitoring their own activities and performance in terms of their contribution to services in the district as a whole.

Recommendation

Initiate monitoring of quality of maternity care in hospitals using clinical audits and developed indicators (see above).

Recommendation

Revise HMIS 34 in collaboration with stakeholders. There seems to be a common agreement that this form is inadequate for the monitoring of obstetric performance of hospitals. A committee of interested parties, including other programmes with an interest in inpatient morbidity, should review this form and draft a new one. Experience from the UNICEF/NSMP pilot of the UN Obstetric Process Indicators will feed into this process. The report form will need to be designed so that it is compatible with the public health reporting system (for example, it could use the same standard list of morbidities).

Recommendation

Support training and participation of hospital medical and statistical recorders in project supported districts. This cadre of staff is relatively unsupported and would benefit from being involved closely in the development of better monitoring systems. Their training needs need to be identified and met.

Recommendation

Explore and pilot ways in which information on obstetric care in the private system could be captured by building on the success achieved in this respect by the Family Planning programme.

Recommendation

(Improve links between antenatal care in the public health system and inpatient obstetric services. This could be achieved by arranging for the hospital obstetrician to undertake a short daily session at the hospital antenatal clinic. This session could act as a referral point for women with complications seen at this site by the midwives, or those referred from PHCC/HPs).

7.2.3 Long-Term Action

Recommendation

Initiate and contribute to a basket fund for support of HMIS. The current reliance on UNFPA support alone is risky. There is a clear and urgent need for other donors, particularly those who want to use the data produced by the HMIS to support it more actively. One approach would be to agree a programme of planning and support through a basket fund to which all users would contribute. Another approach, and one favoured by some donors (e.g. DfID), is to create wider support, to all health related information systems, as a part of ongoing health sector reform efforts.

Recommendation

Support further decentralisation of the HMIS with increased autonomy to act on findings.

8. PARTNERS

UNICEF

UNICEF' WRTLH has recently completed a survey of the availability of Essential Obstetric Care in Nepal using the UN Indicators and the methodology suggested in the UN Guidelines. The results give an excellent overall picture of the current status of obstetric care in Nepal and will serve as a baseline, not only for UNICEF but also for the National Safe Motherhood Programme as well as other donor supported projects such as NSMP.

UNICEF WRTLH is working closely with NSMP and the collaboration seems to be highly effective despite the WRTLH project being short-staffed at present. However, in partnership with NSMP, they plan to take a leading role in initiating the monitoring system.

UNFPA

UNFPA has supported the HMIS for many years. It has had a strong focus on Family Planning Indicators but has been involved in strengthening the system in respect of other programme indicators as well. It is currently the main EDP for the HMIS. UNFPA supports the concept of introducing more appropriate obstetric indicators into the system but would like to see an ongoing process of rationalisation along with more decentralisation so that the system improves as a district management tool.

Maternal and Neonatal Health Project (MNH)

MNH is a USAID supported project receiving technical input from JHPEIGO. Their team is currently focused on expanding skilled attendance at delivery through training and support of lower level health staff with midwifery potential (Maternal and Child Health Workers). They are interested in monitoring the incidence of deliveries by this cadre of workers (which should be possible through the current HMIS) and of use of selected obstetric functions (such as use of oxytocin to treat PPH).

IMPACT

IMPACT is a global research initiative led by the Dugald Baird Centre at Aberdeen with support from the Gates Foundation and other donors. Professor Wendy Graham was in Nepal at the time of this consultancy and we were able to discuss a number of monitoring issues. IMPACT plans to work with partners in Nepal, including NSMP, to improve evaluation and monitoring of maternal health interventions, to develop better ways of measuring changes in quality of care and to improve the understanding of the links between obstetric process indicators and changes in maternal mortality rates. It is currently unclear exactly what form the partnerships will take, but NSMP is likely to find this relationship highly beneficial.

ANNEX 1: TERMS OF REFERENCE

Options

TO SUPPORT THE PROCESS OF ESTABLISHMENT OF NATIONAL SAFE MOTHERHOOD PROCESS INDICATORS MANAGEMENT SYSTEM

BACKGROUND

The DFID-funded Nepal Safer Motherhood Project (NSMP) aims to support the National Safer Motherhood Programme (SMP) of His Majesty's Government of Nepal (HMGN) by contributing to improved maternal health in selected districts. Options Consultancy Services Limited, as contractor to DFID, has overall management responsibility for the project.

The project has two main components: **service provision** under which systems to improve the quality of midwifery and essential obstetric care services are upgraded- including improvements to the physical infrastructure of hospitals, equipment and supplies and a wide range of human resource development inputs. The **increasing access component** aims to develop sustainable means to create awareness of, and demand for, services by addressing a range of barriers that women face in using services.

A successful output to purpose review of the project's first phase took place at the end of June 2000. From July to December 2000 NSMP designed its second phase (which will last till 2004). A phase 2 logframe has been developed.

SPECIFIC BACKGROUND

The consultancy will respond to three areas of need and interest that are closely interrelated.

1. NSMP's monitoring needs

NSMP's purpose (sustained increase in utilisation of quality midwifery and obstetric (BEOC and CEOC) services) has, to date, been measured by the use of 5 process indicators. These indicators are closely related to those promoted by UNFPA/UNICEF/WHO (1996)^{2 3} hereafter referred to as the UN process indicators.

In Phase 1, three districts were supported to establish and sustain comprehensive essential obstetric care (CEOC). Project staff have worked with Government staff to improve facility data collection so that the project can report progress using these indicators.

In Phase 2 the project will support one more district to provide CEOC but shall also support 5 districts to provide Basic Essential Obstetric care (BEOC). Thus in Phase 2 nine districts (representing 13% of the population of Nepal) shall be supported and their progress measured.

The revised Phase 2 Logframe is attached which details amended indicators. NSMP is not satisfied with these and require technical expertise to develop them further (as discussed below).

2. NSMP AND UNICEF'S "JOINT PROGRAMMING" APPROACH

² UNICEF/UNFPA/WHO (1996) Guidelines for Monitoring the Availability and use of Obstetric Services

³ The project uses slightly amended indicators

The UNICEF implemented Women's Right to Life and Health (WRTLH) project commenced in 2000. EOC support is being provided to 4 districts. NSMP has inputted into the design of the UNICEF project and is closely supporting its implementation by drawing upon NSMP's lessons learnt. To date monitoring using the UN indicators has not commenced though the WRTLH project intends to use the UN process indicators.

As both projects are so closely aligned in their purpose and in their outputs NSMP and UNICEF are committed to developing mechanisms for joint programming at an operational level to maximise resources and ensure consistent support to the national safer motherhood programme.

Monitoring is an identified area. Under the direction of the Family Health Division (FHD) of the Department of Health Services (see point 2.3), the two projects agree to :-

- use the UN process indicators (therefore NSMP are required to amend their indicators)
- use the same management system (to collect, process and utilise data)

3. NATIONAL LEVEL INCREASED INTEREST IN MONITORING USING THE UN INDICATORS

At national level, over the last six months, there has been increasing interest in the adoption of key UN process indicators. The current HMIS does not capture this level of information. In December the FHD undertook a 15 year planning exercise for Safe Motherhood. The plan's purpose is "Sustained increase in utilisation of quality maternal health services"

The OVIs are

- 2% a year increase of met need for EOC in the Safe Motherhood districts by 2006. The percentage increase will be reevaluated after the first five years.
- Increase in % of deliveries by skilled attendants to 60% by 2016
- CPR increases to 45.6% in 2006, 55.6% by 2011, and 65.4% in 2016
- Increase in met need for C/S by 2% a year for the 5 years for Safe Motherhood districts for CEOC⁴

NSMP and UNICEF contributed to this development using NSMP's three years experience with process indicators. The learning generated from NSMP was, and will continue to be, of value to FHD's endorsement and utility of the UN process indicators. At this stage it is not possible that the indicators can be incorporated into the HMIS though all parties are open to planning a process whereby the data is housed and analysed by the FHD with the long-term view that it can be incorporated into the HMIS.

A small task force will be established to brief, advise and work with the consultant. The group will comprise of:-

- Chief, Safe Motherhood Unit, FHD.
- Chief, Demography Unit, FHD
- Project Officer, WRTLH, UNICEF
- Project Director, NSMP
- Human Resource Development Manager, NSMP

PURPOSE OF ASSIGNMENT

1. To advise the Director, Family Health Division and the task force on a process to establish and thereafter manage a monitoring system for EOC monitoring in the 13 districts supported by NSMP and UNICEF (but which is intended to be scaled up in the future).

⁴ The Safe Motherhood designated districts are the 13 districts supported through NSMP and UNICEF's WRTLH project

2. To advise the Director, Family Health Division, on appropriate targets for "met need for EOC" and "CS as a proportion of all births" for the national 15 year Safe Motherhood Plan of Action.
3. To support NSMP's transference from its existing indicators to the standard UN process indicators and advise on related issues.

TASKS

The Consultant will:

Be briefed by NSMP's Project Director on the project to date with particular reference to the monitoring system in place and experiences of its utility.

Be briefed by the Chief Health Section and UNICEF Project Officer responsible for the WRTLH Project on the status of planning for monitoring.

Be briefed by the Director, FHD and the Chief, Demography Section (FHD) and the Chief, Safe Motherhood Unit (FHD), on the status of the 15 year Safe Motherhood Plan and the indicators therein for EOC utilisation.

Visit one NSMP supported district providing CEOC services to be appraised of the practical issues in facility based data collection (depending on time, also visit another district - UNICEF or NSMP supported - to contrast a hilly district with a terrain district in terms of service management abilities).

Provide expertise to NSMP in:-

- transferring current data to the standard UN process indicators (redesigning the spreadsheet as well as reviewing current data)
- the use of the UN process indicators for districts which will provide only BEOC not CEOC
- reviewing NSMP's data from three years of data collection in three districts and advise on what learning can be drawn from it and advise on any further utility

Drawing on international learning, and learning from NSMP, and with an understanding of the context of data collection in Nepal, advise the task force on appropriateness of the indicators presented in the 15 year Plan.

Advise on the design of the monitoring process, including:-

- facility registers (used in PHCs as well as hospitals)
- reviewing and upgrading the existing tally sheet of obstetric morbidity and procedures (currently only used in Nepal by the NSMP districts)
- how districts aggregate their data
- data collection, transference, cleaning, and data analysis. Recommend what aspects require project support and to what extent this process can be institutionalised into FHD (ie moving from project's use of the data to FHD's use of the data). Provide recommendations on the revision of the current maternal death audit to ensure it is more accessible to users and advise on good practise in using this as a tool to improve quality of services

Advise the task force on the "next steps" concerning training requirements

OUTPUTS

Present findings and recommendations to the Director Family Health Division and the task force before leaving the country and produce a short report on the recommendations.

TIME FRAME

- Up to one day's preparation in the UK
- Up to twelve working days in country
- Up to two report writing days in the UK

To be undertaken as soon as possible.

CONSULTANT REQUIREMENT

- Experience in the implementation of the UN process indicators in another developing country and sound understanding of the related issues.
- Sound understanding of the current skilled attendance debate in particular with regard to the monitoring aspects.

ANNEX 2: DOCUMENTS CONSULTED

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Making Safe Motherhood Work in Nepal: Programmatic Elements and Challenges (undated). Summary of safe motherhood programme components at the different levels of the Nepali Health System.

Maine D, Wardlow T, Ward V, McCarthy J, Birnbaum A, Akalin MZ and Brown JE. (1997) UNICEF/WHO/UNFPA. Guidelines for Monitoring the Availability and Use of Obstetric Services. New York, UNICEF.

Clapham S. (2000). Nepal Safe Motherhood Project Monitoring Systems. Options/DfID/Family Health Division, Ministry of Health, Nepal.

Nepal Safe Motherhood Project. (2001). Project Progress Report; January – June 2001. Options/ DfID/ Family Health Division, Ministry of Health, Nepal.

Slavin H, Murray S, Aitken J-M, Manandhar MD, Rana G, Pande BR. (2000). Nepal Safe Motherhood Project, Output to Purpose Review, June 2000. JSI Centre for Reproductive Health / DfID.

List of HMIS Forms

HMIS 34: Monthly report from hospitals (In main part of form includes morbidity section with list of main direct obstetric complications; In Annex A includes deliveries in the hospital (normal and complicated); maternal deaths; info on perinatal deaths).

HMIS 33: Monthly report from District Public Health Services

HMIS 32: Monthly report from Primary Health Care Centres and Health Posts.

ANNEX 3: TIMETABLE AND PEOPLE MET

Tuesday 25 th September	Arrive Kathmandu
Wednesday 26 th September	Briefing with Susan Clapham, Dr Indira Basnet Meeting with Dr Laxmi Pathak, Director, FHD Meeting with Mr Moul, Monitoring and Evaluation Section and Dr Goutham, Health Information System Safe Motherhood Monitoring Task Force meeting: Mr Ajit Pradhan, Demographer, FHD Dr Kritanjali Koirala Mr Sharad Kumar Sharma, Statistical Officer Dr J Harnmeijer, CTA UNFPA Dr Geeta Rana, UNICEF Dr Indira Basnet Susan Clapham
Thursday 27 th September	Field visit to Kailali District with Dr Indira Basnet and Mr Sharad Kumar Sharma Health Post. Auxillary Nurse Midwife Maternity Ward, Seti Zonal Hospital. Midwives and Obstetrician
Friday 28 th September	Seti Zonal Hospital Dr Rai, Medical Superintendent Maternity Ward, Midwives Medical Records, Medical Recorder Operating Theatre Blood Bank Emergency Room Female Wards District Health Office Public Health Officer NSMP, Social Development Co-ordinator
Saturday 29 th September	District Health Officer Tikapur Primary Health Care Centre Medical Officer Officer in Charge Midwives VDC Leader Maternity ward, Operating Theatre, Blood Bank, OPD Return Kathmandu Meeting with Professor Wendy Graham, Dr Julia Hussein
Sunday 30 th September	Document review Working dinner with Dr Laxmi Pathak, Ms Susan Clapham, Dr Ajit Pradhan, Prof Wendy Graham, Dr Julia Hussein, Dr Indira Basnet, Dr

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	Mike O'Dwyer
Monday 1st October	<p>Presentation on IMMPact and Skilled Attendance at Delivery Prof Wendy Graham. Audience – Nepali clinicians, MoH Officials (including Director General of Health), EDPs (UNFPA, UNICEF, WHO, USAID)</p> <p>Review of progress with Dr Indira Basnet and Susan Clapham Work with Dr Ajit Pradhan and Mr Sharad Kumar Sharma</p>
Tuesday 2nd October	<p>Review of Maternal Death Audit Dr Kasturi Malla, Dr SD Malla, Mr Ajit Pradhan, Ms Sarsawati Chhetry, Dr Indira Basnet, Dr Geeta Rana, Dr J Harnmeijer</p> <p>Safe Motherhood Monitoring Task Force meeting</p>
Wednesday 3rd October	<p>Feedback meeting with Mr Moul and Mr Gautan</p> <p>Safe Motherhood Monitoring Task Force meeting (continued)</p> <p>Meeting with Susan Clapham</p>
Thursday 4th October	<p>Meeting at Planning and Foreign Aid Division Dr Chaud (Acting Director), Dr Indira Basnett, Mr Sharad Kumar Sharma</p> <p>Presentation of main findings and recommendations of mission to Dr Pathak and others</p> <p>Discussion with Dr Ajit Pradhan, Susan Clapham, Dr Indira Basnett and Mr Sharad Kumar Sharma</p>
Friday 5th October	<p>Meeting at UNFPA Dr H Harnmeijer, CTA UNFPA</p> <p>Visit to Birthing Centre</p> <p>Meeting and debriefing with Dr Mike O'Dwyer</p>
Saturday 6th October	Leave Kathmandu

ANNEX 4: UN PROCESS INDICATORS (SUMMARY)

INDICATOR	DEFINITION	MINIMUM LEVEL	NUMERATOR	DENOMINATOR	DATA SOURCE (SUGGESTED)
Availability of Basic Essential Obstetric Care (BEOC) Facilities	Number of health facilities providing BEOC functions per unit of population.	For every 500,000 population there should be at least 4 BEOC facilities	Number of facilities providing all standardized BEOC functions	Population of catchment area/ 500,000	Checklist of functions
Availability of Comprehensive Essential Obstetric Care (CEOC) Facilities	Number of health facilities providing CEOC functions per unit of population.	For every 500,000 population there should be at least 1 CEOC facility	Number of facilities providing all standardised CEOC functions	Population of catchment area/ 500,000	Checklist of functions
Institutional Deliveries	Proportion of all deliveries taking place in health facilities	At least 15% of all births should take place in health facilities.	Number of deliveries occurring in catchment area health facilities in time period	Total expected deliveries in the catchment population in time period	Maternity Register
Met Need for Emergency Obstetric Care (BEOC or CEOC)	Proportion of women with an obstetric complication treated in CEOC or BEOC facilities	100% of all women with obstetric complications should be treated in BEOC or CEOC facilities	Number of women with obstetric complications who were treated at BEOC or CEOC facilities in time period.	Number of women <u>expected</u> to experience obstetric complications in the catchment population in time period. Expected deliveries x 15%	Maternity and Gynaecology Registers.
Met need for Caesarean Section	Proportion of Caesarean Sections to all births	The % of births delivered by CS should be no less than 5% and no more than 15%.	Number of C/S in time period	Total expected deliveries in the catchment population in time period	Operating theatre register
Case Fatality Rate in Facilities	Proportion of women with an emergency obstetric complication admitted to a facility who die	CFR should be less than 1%	Number of direct obstetric deaths in the facility in time period	Number of admissions for emergency obstetric complications in time period	Maternity and Gynaecology Registers.

Essential Obstetric Care (EOC) Functions	
Basic EOC	Comprehensive EOC
<ul style="list-style-type: none"> • iv/m antibiotics • iv/m oxytocics • iv/m anticonvulsants • manual removal placenta • assisted vaginal delivery • removal retained products 	<p>All six Basic functions plus:</p> <ul style="list-style-type: none"> • Caesarian Section • Blood transfusion

Definition of an EOC case
<ul style="list-style-type: none"> • Haemorrhage (ante or postpartum) • Pre-eclampsia/eclampsia • Ectopic pregnancy • Prolonged/obstructed labour • Ruptured uterus • Postpartum sepsis • Complications of abortion • (Retained Placenta)

ANNEX 5: NSMP LOGFRAME

PROJECT LOGICAL FRAMEWORK: NEPAL SAFER MOTHERHOOD PROJECT (PHASE II)

Objectives	OVI	MoV	Assumptions
<p>Goal: To contribute to HMGN SM programme's objective of reducing maternal mortality</p>	Reduction in maternal mortality ratio	WHO National estimates	To sustain improvements in maternal health, other health and development programmes in place
<p>Purpose: Sustained increase in utilisation of quality midwifery and obstetric (BEOC and CEOC) services</p>	<p>1.1 <u>Increased # attending CEOC facilities with an obstetric complication</u>, as a composite of:</p> <ul style="list-style-type: none"> - % increase in expected obstetric complications managed in CEOC facilities in project-supported catchment areas - % increase in c-sections as % all births in project-supported catchment areas - % increase in c-sections as % all hospital births (Baglung, Surkhet, Kailali, Rupandehi, Jumla) <p>1.2 <u>Increased # obstetric complications managed in or referred from BEOC supported facilities to CEOC facilities</u></p> <ul style="list-style-type: none"> - by year 3, BEOC cases managed in facilities in project districts reach c. 10% of all births in district. - by year 3, referrals from BEOC facilities to CEOC facilities in project districts as % all births in district (Nawalparasi, Parbat, Myagdi, Dailekh plus other districts where PHCs and BEOC are supported) <p>1.1 & 1.2 may be modified to fit with national SM programme process indicators currently being developed by FHD and NSMP</p> <p>1.3 <u>Increase # appropriate referrals by MCHWs to obstetric facilities: to be designed as part of MCHW monitoring system being developed by FHD, NSMP and other partners</u></p> <p>1.4 <u>Increased utilisation by poor and</u></p>	<p>1.1-1.2 sentinel surveillance (using facility registers and HMGN reporting systems)</p> <p>1.3 HMGN reporting system</p>	<p>HMGN adopts NSMP model and replicates</p> <p>HMGN continue to develop the national SM programme and harness additional resources</p> <p>Pregnancy Protection Bill promulgated and implemented</p> <p>Other RH interventions in place</p> <p>SM remains a priority under a SWAp</p>

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	<u>marginal groups of midwifery and obstetric services in project supported facilities</u> (using proxies)	1.4 periodic data collection & analysis - facility admissions register	
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ANNEX 6: NATIONAL SM PROGRAMME PLAN

Planning Matrix (July 2001-July 2017)

Overall Mission Statement:

To facilitate creation of an enabling environment where a woman's right to safe pregnancy, delivery and post-partum care is achieved.

Hierarchy of Objectives	Indicators/Means of Verification	Assumptions
Overall Goal: Maternal and neonatal health status improved	<ul style="list-style-type: none"> ▪ Reduction in MMR as per the Long Term Health Plan 	
Purpose: Sustained increase in utilization of quality maternal health services	<ul style="list-style-type: none"> • % of met needs for EOC (disaggregated data - poor, marginalized groups, ethnic groups, geographical coverage). <i>MOV - FHD Database; HMIS</i> • % of deliveries by skilled attendants (broken down for home deliveries and facilities-level). <i>MOV - HMIS; Demographic and Health Survey-DHS</i> • CPR (for under 20's) increases by __ % every 5 years. <i>MOV - HMIS; DHS</i> • Decrease in unmet needs of FP (family planning). <i>MOV - DHS; BECHIMES</i> • % of CIS. <i>MOV - Facility data; FHD Database; HMIS</i> 	

ANNEX 7: REVIEW OF MATERNAL DEATH AUDIT PILOT

Maternal death audits have taken place in the three NSMP project hospitals (Baglung, Seti/Kailali, and Surkhet). In 2000/2001 twelve maternal deaths were reviewed, ten from Kailali and one each from Baglung and Surkhet.

The consultant reviewed the audit form itself and discussed the audit process with medical and midwifery staff at Seti Hospital.

7.1 AUDIT FORM

The form was developed as a questionnaire for use as part of a previous study and has been used for the maternal death audit without any changes. It has clearly been designed as a formal data collection instrument to ascertain cause of death and risk factors rather than as a tool to be used as part of a quality of care assessment and improvement process. The form is in two main sections: the questionnaire, and a summary sheet for a short general description of the main medical events.

Completion of the form takes place after a death has occurred, using information from the medical records. The midwife involved in care of the patient is responsible for completing the questionnaire. The doctor completes the medical summary.

The form is long and includes a number of redundant and/or duplicated questions. The team reviewing the form recognises this problem and has made considerable efforts to identify questions that could be dropped. Some request information that could not normally be obtained from a patient or relative in the course of medical history taking, especially in an emergency situation. The questions on the form are arranged according to the stage of pregnancy reached, rather than according to the format used for medical record keeping.

The response categories do not permit the distinction between information not known and information not recorded in the medical notes.

The final part of the questionnaire is a checklist of avoidable factors contributing to the death. The midwife is expected to complete this part at the same time as she records the factual information. Most of the completed forms the consultant reviewed only identified avoidable factors relating to events before arrival at the health facility.

7.2 FEEDBACK FROM STAFF

Although midwives on maternity wards are responsible for filling in the form, there have been occasions when no appropriately trained staff have been available (due to transfers). Three new staff have been trained on site. Forms are often filled in up to 2 weeks after the death. The midwives find the form very long, complicated, and difficult to complete. Much of the information is not available or not recorded. They try to remember what happened but often forget some of the details.

The nursing staff discuss deaths at their Sunday meeting and if important issues arise, they can present these at the monthly whole hospital staff management meeting. In general, they feel able to discuss issues relating to care provided by the medical staff.

The midwives do not formally assess correctness of case management, or incidence of medical procedures, such as episiotomy. (N.B. They know that routine episiotomy is undesirable but told me that they are often encouraged to do them by the medical staff in order to avoid tears).

A number of desirable changes have come about as a result of the maternal death audit:

- Midwives were unable to prescribe blood, which created delays while waiting for the doctor to come. They have now been authorised to start blood transfusions independently.
- Fee exemptions used to require authorisation by the medical staff. This also caused delays in admission and treatment. The nursing staff can now authorise exemptions in urgent cases.
- Emergency drugs are now available in the labour room as there used to be delays in collecting them from the pharmacy.
- In the case of one maternal death, CS had been delayed because the woman was very anaemic and the doctor on duty was afraid of taking her to theatre in case she died on the operating table. The hospital has now initiated a 'High Risk' consent form, which confirms that the relatives have been fully informed of the grave situation, that death may occur during operation, but is inevitable if the operation is not carried out.

The midwives do not seem to find analysis of death cases particularly threatening. The doctors also discuss maternal deaths in their weekly meeting. Senior nursing staff are invited but rarely attend.

The medical superintendent agrees that the form is too long and confusing and that the information is not available in the notes. He has developed a simpler version (not available during my visit). He did not feel that case management audit would be particularly useful since they now have clinical protocols that they all follow.

7.3 RECOMMENDATIONS

Recommendation

Before revising the form it would be helpful to define:

- The objective of the maternal death audit
- The process that will be used to accomplish the audit
- Who will participate
- How the results will be used to effect change in the organisation of services, and clinical management

Recommendation

All redundant questions should be removed from the audit form.

Recommendation

It would be useful to have an additional category for all questions 'Not recorded'. The audit process can then act as a tool to improve record keeping as well as quality of care.

Recommendation

The audit form needs to reflect the way which information is recorded in the medical records. The Consultant felt that some of the information was not available due to poor medical record keeping and because pregnant women are not being given their ANC cards to keep. If true, these findings in themselves have important policy implications.

Medical history. This will include general health information, problems in previous pregnancy and in this pregnancy. It should include information about antenatal care including advice given by the health staff at the clinic and action taken. The family should have been asked for the ANC card and if available, this should have been kept with the notes.

Social history. This could include information about time taken to arrive at the hospital, transport and financial difficulties, as long as these questions are asked routinely.

Medical examination.

Routine investigations. Pulse, BP, temperature and obstetric observations should be recorded as a matter of course. If they have not been recorded this fact is important.

Laboratory investigations.

Recommendation

There need to be questions aimed at identifying errors in diagnosis, deviation from set protocols, and delays.

Recommendation

The doctors' summary is an important part of the record and needs to be written carefully.

Recommendation

The midwife completing the form should never identify the avoidable factors by herself. This part should be completed after the case has been freely and frankly discussed by all those involved.

Recommendation

It is important for everyone to realize that identification of avoidable factors does not mean that the death itself should have been avoidable.

Recommendation

The audit process needs to be an inquiry, not an investigation. It is important to avoid blame of individuals. The purpose is to identify what was done well, as well as what could have been done better. It is important to identify what changes need to be made as a result of the findings.

Recommendation

Maternal death audit can be a difficult and threatening process. Although the pilot has shown that good results can come out of it, hospitals may want to consider procedure or case management audits (e.g. criteria based clinical audit) as a more routine part of their quality improvement activities.

ANNEX 8: RECLASSIFICATION OF NSMP LIST OF OBSTETRIC MORBIDITIES

Old List	New list	Old list grouping
Morbidities		
1 Ectopic pregnancy	Haemorrhage: Antepartum	8 Antepartum haemorrhage
2 Hydatiform mole		
3 Missed Abortion	Haemorrhage: Post-partum	18 PPH with retained placenta
4 Spontaneous Abortion		19 PPH without retained placenta
5 Induced abortion		
6 Incomplete abortion + sepsis	Ectopic pregnancy	1 Ectopic pregnancy
7 Other abortion		
8 Antepartum haemorrhage	Severe Pre-eclampsia/ Eclampsia	9 Pre-eclampsia
9 Pre-eclampsia		10 Eclampsia
10 Eclampsia		
11 Hyperemesis	Prolonged/Obstructed Labour	12 Long labour
12 Long labour		13 Obstructed labour
13 Obstructed labour		16 Hand prolapse
14 Twins		
15 Breech	Ruptured uterus	17 Ruptured uterus
16 Hand prolapse		
17 Ruptured uterus	Postpartum Sepsis	20 Puerperal sepsis
18 PPH with retained placenta		
19 PPH without retained placenta	Retained Placenta	
20 Puerperal sepsis		
21 Severe anaemia + pregnancy	Abortion Complications	6 Incomplete abortion + sepsis
22 Hepatitis + pregnancy		2 Hydatiform mole?
23 TB + pregnancy		3 Missed Abortion?
24 RTI + pregnancy		Abortion + haemorrhage
25 Diabetes + pregnancy		
26 Other		
	Total complications	Not relevant
Total women with complications	Total women with obstetric complication	(Sum of above)
	Women other obstetric complications	4 Spontaneous Abortion
		5 Induced abortion
		7 Other abortion
		11 Hyperemesis
		14 Twins
		15 Breech
	Women with non-obstetric morbidity	21 Severe anaemia + pregnancy (? Separate category)
		22 Hepatitis + pregnancy
		23 TB + pregnancy

		24 RTI + pregnancy
		25 Diabetes + pregnancy
		26 Other
Maternal deaths	Total maternal deaths	
	Direct obstetric deaths	
	Women delivered	
27 Unspecified		?
28 Fresh Stillbirths	Babies born	
29 Macerated Stillbirths		
Total stillbirths	Stillbirths	Total stillbirths
		28 Fresh Stillbirths
		29 Macerated Stillbirths
	Neonatal deaths (0-7 days)	
Procedures	Obstetric Procedures	
1 Abdominal hysterectomy	Assisted vaginal delivery	9 Vacuum Extraction
2 Bimanual compression		10 Forceps
3 Tubal ligation		
4 Blood transfusion	Caesarian Section	1 Abdominal hysterectomy ?
5 Breech delivery		6 Destructive Op
6 Destructive Op		11 Laparotomy for uterine rupture
7 D&C		12 Laparotomy for repair ut rupture
		17 Caesarian Section
8 Episiotomy	Manual removal placenta	14 Manual removal placenta
9 Vacuum Extraction	MVA	?
10 Forceps	D&C	7 D&C
11 Laparotomy for uterine rupture		
12 Laparotomy for repair uterine rupture	Blood transfusion (from lab record)	4 Blood transfusion
13 Laparotomy ectopic pregnancy		?
14 Manual removal placenta		
15 Multiple delivery		?
16 Normal delivery		?
17 Caesarian Section		
18 Other		
19 Referrals to another centre	Referrals to other facilities	19 Referrals to another centre
	Referrals from other facilities	

ANNEX 9: HMIS DATA FLOW

ANNEX 10: COMPONENTS OF HMIS (RECORDING AND REPORTING)

ANNEX 11: REVISED LIST OF OBSTETRIC COMPLICATIONS FOR HMIS FORMS

Current list of Obstetric Complications (HMIS 32/33/34)

Obstetric Complications				
	28	Abortion and related complications		
	29(a)	Other Complications		
	(b)	Puerperal Sepsis		
	(c)	Haemorrhage: Antepartum		
	(d)	Haemorrhage: Post-partum		
	(e)	Pre-eclampsia		
	(f)	Eclampsia		
	(g)	Retained Placenta		
	(h)	Obstructed Labour		
	(i)	Pregnancy Induced Hypertension		

Suggested new list of Obstetric Complications (HMIS 32/33/34)

Obstetric Complications				
	28 (a)	Haemorrhage: Antepartum ¹		
	(b)	Haemorrhage: Post-partum ¹		
	(c)	Ectopic pregnancy		
	(d)	Severe Pre-eclampsia / Eclampsia ²		
	(e)	Prolonged / Obstructed Labour ³		
	(f)	Ruptured uterus		
	(g)	Postpartum Sepsis		
	(h)	Retained Placenta ⁴		
	(i)	Abortion Complications		
	29	Other Complications / conditions ⁵		

Notes:

1. I have separated ante and post partum haemorrhage because they are really different conditions.
2. I have specified 'severe' pre-eclampsia because otherwise you may get a lot of mild/moderate cases (which cannot really be considered life threatening) included
3. I have included 'prolonged labour'. However, we have found that this can be massively over diagnosed in some countries. You might want to take it out if you feel this might happen in Nepal.
4. I have included retained placenta in the list because I have found that midwives leave these cases out if they are not specified.
5. Un-complicated abortion/miscarriage, twin/breech deliveries etc can be included in 29

ANNEX 12: DRAFT PPP PATIENT DISCHARGE SUMMARY STAMP

Pregnant and Postpartum Stamp

Use this stamp on the Hospital Admission/Discharge Summary of ALL Pregnant and Postpartum Patients

OBSTETRIC COMPLICATIONS (TICK ONE ONLY)	
Antepartum Haemorrhage	
Postpartum Haemorrhage	
Ectopic Pregnancy	
(Prolonged)/Obstructed Labour	
Ruptured Uterus	
Pre-Eclampsia	
Eclampsia	
Retained Placenta	
Postpartum sepsis	
Abortion Complications	
Other obstetric complication (specify)	
Non-obstetric morbidity (specify)	
SVD without complications ¹	

Procedure Stamp

Use this stamp if an obstetric procedure has been performed

OBSTETRIC PROCEDURES	
Assisted Vaginal Delivery (Forceps or Vacuum)	
Caesarian Section	
Manual removal placenta	
MVA	
D&C	

Notes:

1. I suggest that episiotomies or second-degree tears should not count as a complication. They should however be noted in the medical record and the maternity register.

ANNEX 13: DRAFT INTERIM OBSTETRIC REPORT FORM

NSMP / UNICEF MONTHLY MATERNITY SERVICES REPORT FORM

District: Name of Facility: Type of Facility:

Month: Year:

Name and position of officer completing the form:

01	Catchment population	
02	Expected pregnancies	
03	Women delivered	
04	Babies born	
05	Stillbirths	
06	Neonatal deaths (0-7 days)	
OBSTETRIC COMPLICATIONS		
07a	Antepartum Haemorrhage	
07b	Postpartum Haemorrhage	
07c	Ectopic Pregnancy	
07d	(Prolonged)/Obstructed Labour	
07e	Ruptured Uterus	
07f	Pre-Eclampsia	
07g	Eclampsia	
07h	Retained Placenta	
07i	Postpartum sepsis	
07j	Abortion Complications	
08	Total women with major obstetric complication	
09	Women with other obstetric complication	
10	Women with non-obstetric morbidity	
11	Total maternal deaths	
12	Direct obstetric maternal deaths	
13	Referrals from other facilities	
14	Referrals to other facilities	
OBSTETRIC PROCEDURES:		
15	Assisted Vaginal Delivery (Forceps or Vacuum)	
16	Caesarian Section	
17	Manual removal retained placenta	
18	MVA	
19	D&C	

ANNEX 14: EXAMPLES OF MATERNITY REGISTERS

ANNEX 15: SUMMARY OF RECOMMENDATIONS

5. NSMP MONITORING SYSTEM

Recommendation

NSMP should agree, with the National SMP and UNICEF, a standard wording to be used in the description of their indicators thereby ensuring all partners use the same. These indicators and their wording should be based on the standard five UN indicators with minor adaptations according to local needs.

Recommendation

NSMP should change to the UN system of classifying obstetric complications. Annex 8 indicates the possible grouping of current morbidity categories needed to transfer to the UN categories.

Recommendation

The project should exclude anaemia from the list of obstetric conditions used to calculate met need for EOC. The project should continue to collect data on cases of anaemia as a separate indicator, possibly along with data on other important indirect pregnancy related conditions such as hepatitis, TB and malaria.

Recommendation

NSMP and other partners of the National SMP should use *district* Catchment Population and Expected Birth Estimates distributed by the Planning and Foreign Aid Division of HMGN. The Planning and Foreign Aid Division (PFAD) and FHD need to agree on the projections to be used for the catchment populations, and both Divisions should then use the same data consistently. NSMP could consider facilitating this dialogue. Calculations can be based on data made available from the 2001 census.

Recommendation

Data from BEOC facilities in any one district should be initially pooled separately from hospital data so that the performance of BEOC and CEOC can be compared. Data from CEOC and BEOC in any one district should be combined to give a picture of the district as a whole. NSMP can arrange to look at the performance of project supported facilities in partnership with the District Public Health Office.

Recommendation

The project should ensure it has access to data on attendance at, or place of delivery from all health facilities in the districts in which it works and not only from the facilities it actually supports. This data is already available from the District Health Offices.

Recommendations

The project could consider counting referrals from BEOC to CEOC as a separate data item as this indicator can help to measure the level of functioning at BEOC facilities. However, monitoring referrals as part of an information system has proved difficult in several countries that have tried to do this and should therefore not be considered a priority. This data can however be useful for managers at facility level.

Recommendation

The project should attempt to measure availability (especially of BEOC), and the case fatality rate (CFR).
Availability - the highest-level functions for BEOC facilities (and the most difficult to achieve) are removal of retained products (MVA or D&C) and assisted delivery (vacuum extraction or forceps). One of these functions (assisted delivery is the simplest to use) can be chosen to measure availability of BEOC through a routine system. CS can be used to measure availability of CEOC.

Case Fatality Rate - as long as maternal deaths in hospitals are correctly identified the case fatality rate for individual hospitals can be measured. Experience has shown that this indicator is only useful when used for facilities that have a reasonable volume of obstetric cases and a minimum number of deaths per year (5 – 10 or more), which was not the case in those district hospitals supported in Phase 1 of NSMP. This recommendation is therefore only for hospitals with this number of deaths per year

Recommendation

The project could explore whether a modified form of criteria based clinical audit (which measures improvements in case management) would be feasible. If a full case management audit seems too complex and resource intensive, the project could consider audit of single procedures or issues, which can be measured more easily. For example;

- Incidence of episiotomies
- Use of oxytocin infusion in the first & second stages of labour
- Post operative wound infections
- Time from admission to treatment

Recommendations

The revised NSMP spread sheet will need to incorporate the following features:

- The obstetric complication categories will need to correspond to the new list
- The BEOC and CEOC facilities will need to be separated. The spreadsheet could have a separate entry for each BEOC and CEOC facility in a district if there are not too many of them, but certainly needs to display data for pooled BEOC and pooled CEOC facilities for each district.
- The target populations need to be included in the spread sheet
- The spread sheet needs to be constructed so that it automatically calculates proportions for the utilisation indicators.

Recommendations

NSMP and UNICEF need to assess the training and equipment needs of their HMGN counterpart for HMIS work and arrange inputs as appropriate.

7. THE NEPAL NATIONAL HEALTH MANAGEMENT INFORMATION SYSTEM

Immediate Action

Recommendation

Using the list of obstetric complications included in HMIS 32/33 as a guide, NSMP and UNICEF, with FHD and HMIS, should agree a standard list of complications that corresponds to the UN definition of a complicated case. Minimal changes are needed to the current list on the HMIS forms. A suggested list can be found in Annex 11.

Recommendation

Revise NSMP monitoring system so that it collects data that conforms to the new standard list of obstetric complications. The transition matrix in Annex 8 will help to accomplish this.

Recommendation

NSMP and UNICEF should support the HMIS to alter the list of obstetric complications on the next print run for HMIS 32/33 so that it corresponds to the new standard list.

Recommendation

NSMP/UNICEF should draft and pilot an improved obstetric inpatient reporting system that is designed for eventual incorporation into the HMIS. This could include the following components:

- A pregnant/postpartum (PPP) diagnosis stamp that includes the main obstetric complications and functions. Midwifery and medical staff need only tick the relevant boxes. The stamp would be used on the Discharge summary of all pregnant and postpartum patients allowing inpatient data to be transferred to the discharge register in a standard fashion. A draft stamp can be found in Annex 12.
- Insertion of a pregnant/postpartum (PPP) column in all hospital inpatient registers so those women with obstetric complications, and maternal deaths, can be identified consistently. This system will help identify women with obstetric complications who are admitted to parts of the hospital other than the maternity ward.
- Developing an interim inpatient report form, which would allow reporting of key obstetric complications and functions using data from the discharge register (A draft form can be found in Annex 13). This form would be used by all facilities (BEOC and CEOC), supported by UNICEF and NSMP where there are obstetric inpatients. It should only record information on births in facilities. It would be completed by the facility staff responsible for processing medical records and passed to the DHO. The DHO would need to synthesise and analyse data from BEOC and CEOC and prepare a summary for forwarding to central level. (Destination to be decided). The information would be used in conjunction with information currently reported reliably through the HMIS such as institutional deliveries.
- In order to standardise and improve data collection on maternity wards, NSMP/UNICEF should draft and pilot a standard inpatient maternity register. These registers will act as a tool for managing data on patients while they are in the ward and, because they can be used to identify cases of interest, they can monitor activities at local level (for instance to monitor quality of care issues). They can also provide a rapid check on data from other sources (e.g. number of deliveries). This could focus on deliveries but should be designed so that all patients admitted to a maternity ward can be included. This will avoid duplication and extra workload for the staff and ensure that information on maternity patients is kept in one place as far as possible. In larger facilities, the PPP column described above will identify obstetric patients admitted to wards other than maternity. In small facilities such as PHCCs, all obstetric patients (including those with abortion complications) can be recorded in the maternity register. At least three countries have developed appropriate maternity registers (examples can be found in Annex 14) and these registers can be used as a basis for design of a Nepali Maternity Register. Register design is best accomplished as a consultation process with users at all levels. Drafts need to be widely reviewed and preferably field-tested before finalisation.

Recommendation

Take action to improve the infrastructure of medical record stores in project supported districts so that they have enough space to store 5 years of records in an orderly fashion. In conjunction with the medical recorders a better record management and retrieval system needs to be designed and implemented.

Recommendation

Facilitate a dialogue, for example help to arrange a round table meeting between some of the District officials involved, the relevant decision makers in HMIS and FHD, and NSMP/UNICEF in order to come to an agreement on management of data at each stage of the development process. The interim arrangements should follow as much as possible the current HMIS flow of information so that the HMIS is supported and so the integration is facilitated. The ideal arrangement would be for FHD (and possibly the NSMP and UNICEF project) to have access electronically to HMIS data if this is possible. It is important that HMIS is engaged in the process right from the start in partnership with the FHD demography unit. The expectation is that the EOC programme will roll out nationally and that more and more Districts will start to focus on EOC. HMIS needs to prepare for this.

Recommendation

Support improvements in the HMIS feedback mechanisms. These need to take account of the needs of programmes at District level. In relation to EOC it is particularly important that feedback loops between the DoH and hospitals are improved.

Recommendation

Recruit a dedicated consultant to work with the UNICEF/NSMP and FHD/HMIS to take on much of the work that will be generated and to support Sharad Kumar Sharmar. This person will need to be familiar with HMGN and the HMIS. They will also need to become familiar with the UN Process Indicators.

Medium-Term Action

Recommendation

Develop district level capacity to combine and use maternity care data from PHCs and hospitals. This process can be started through design and implementation of the pilot data collection system. The DHOs and hospital superintendents in target districts should be involved in this process from the start so that their experience feeds into development of the system and so that they see the benefits and develop commitment to the idea. This will prepare the way for introducing the new indicators into the HMIS at district Level.

Recommendation

Enhanced focus on monitoring utilisation of inpatient maternity care so that hospitals start to realise their potential for monitoring their own activities and performance in terms of their contribution to services in the district as a whole.

Recommendation

Initiate monitoring of quality of maternity care in hospitals using clinical audits and developed indicators (see above).

Recommendation

Revise HMIS 34 in collaboration with stakeholders. There seems to be a common agreement that this form is inadequate for the monitoring of obstetric performance of hospitals. A committee of interested parties, including other programmes with an interest in inpatient morbidity, should review this form and draft a new one. Experience from the UNICEF/NSMP pilot of the UN Obstetric Process Indicators will feed into this process. The report form will need to be designed so that it is compatible with the public health reporting system (for example, it could use the same standard list of morbidities).

Recommendation

Support training and participation of hospital medical and statistical recorders in project supported districts. This cadre of staff is relatively unsupported and would benefit from being involved closely in the development of better monitoring systems. Their training needs need to be identified and met.

Recommendation

Explore and pilot ways in which information on obstetric care in the private system could be captured by building on the success achieved in this respect by the Family Planning programme.

Recommendation

(Improve links between antenatal care in the public health system and inpatient obstetric services. This could be achieved by arranging for the hospital obstetrician to undertake a short daily session at the hospital antenatal clinic. This session could act as a referral point for women with complications seen at this site by the midwives, or those referred from PHCC/HPs).

Long-Term Action

Recommendation

Initiate and contribute to a basket fund for support of HMIS. The current reliance on UNFPA support alone is risky. There is a clear and urgent need for other donors, particularly those who want to use the data produced by the HMIS to support it more actively. One approach would be to agree a programme of planning and support through a basket fund to which all users would contribute. Another approach, and one favoured by some donors (e.g. DfID), is to create wider support, to all health related information systems, as a part of ongoing health sector reform efforts.

Recommendation

Support further decentralisation of the HMIS with increased autonomy to act on findings.

ANNEX 7: REVIEW OF MATERNAL DEATH AUDIT PILOT

Recommendation

Before revising the form it would be helpful to define:

- The objective of the maternal death audit
- The process that will be used to accomplish the audit
- Who will participate
- How the results will be used to effect change in the organisation of services, and clinical management

Recommendation

All redundant questions should be removed from the audit form.

Recommendation

It would be useful to have an additional category for all questions 'Not recorded'. The audit process can then act as a tool to improve record keeping as well as quality of care.

Recommendation

The audit form needs to reflect the way which information is recorded in the medical records. The Consultant felt that some of the information was not available due to poor medical record keeping and because pregnant women are not being given their ANC cards to keep. If true, these findings in themselves have important policy implications.

Medical history. This will include general health information, problems in previous pregnancy and in this pregnancy. It should include information about antenatal care including advice given by the health staff at the clinic and action taken. The family should have been asked for the ANC card and if available, this should have been kept with the notes.

Social history. This could include information about time taken to arrive at the hospital, transport and financial difficulties, as long as these questions are asked routinely.

Medical examination.

Routine investigations. Pulse, BP, temperature and obstetric observations should be recorded as a matter of course. If they have not been recorded this fact is important.

Laboratory investigations.

Recommendation

There need to be questions aimed at identifying errors in diagnosis, deviation from set protocols, and delays.

Recommendation

The doctors' summary is an important part of the record and needs to be written carefully.

Recommendation

The midwife completing the form should never identify the avoidable factors by herself. This part should be completed after the case has been freely and frankly discussed by all those involved.

Recommendation

It is important for everyone to realize that identification of avoidable factors does not mean that the death itself should have been avoidable.

Recommendation

The audit process needs to be an inquiry, not an investigation. It is important to avoid blame of individuals. The purpose is to identify what was done well, as well as what could have been done better. It is important to identify what changes need to be made as a result of the findings.

Recommendation

Maternal death audit can be a difficult and threatening process. Although the pilot has shown that good results can come out of it, hospitals may want to consider procedure or case management audits (e.g. criteria based clinical audit) as a more routine part of their quality improvement activities.

ANNEX 16: MALAWI SAFE MOTHERHOOD PROJECT HIS INDICATORS

SAFE MOTHERHOOD PROJECT HIS INDICATORS 2000 Second quarter including QECH (revised Oct 2000)																					
Calculations for log frame																					
District	RETURNS				CATCHMENT		INSTITUTIONAL DELIVERY RATE						MET NEED FOR EOC						CS RATE		
	Hosp		Mat Units		Pop	CBR	Total		Hospitals		Mat Units		Total		Hospitals		Mat Units		Total		
						N1	n	%	n	%	n	%	N2	n	%	n	%	n	%	n	%
Blantyre	4	4	15	16	824113	10301	6707	65.1	2345*	22.8	4362*	42.3	1545	799	51.7	621*	40.2	178*	11.5	423	4.1
Nsanje	2	2	10	10	194481	2431	1616	66.5	720	29.6	896	36.9	365	289	79.3	181	49.6	108	29.6	94	3.9
Chiradzulu	2	2	9	9	235123	2939	1316	44.8	662	22.5	654	22.3	441	303	68.7	188	42.6	115	26.1	64	2.2
Phalombe	1	1	5	8	233768	2922	1118*	38.3	429*	14.7	689	23.6	438	153*	34.9	126*	28.7	27	6.2	54*	1.8
Zomba	2	2	18	19	540428	6755	3734	55.3	1512	22.4	2222	32.9	1013	396	39.1	158	15.6	238	23.5	148	2.2
Thyolo	2	2	22	23	457954	5724	2181	38.1	772	13.5	1409	24.6	859	257	29.9	169	19.7	88	10.2	68	1.2
Machinga	0	1	0	15	366196	4577	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
Balaka	1	1	9	9	252806	3160	1496	47.3	549	17.4	947	30.0	474	140	29.5	97	20.5	43	9.1	41	1.3
Chikwawa	2	2	9	11	342664	4283	1295	30.2	432*	10.0	863*	20.0	642	89	13.9		11.0		2.0	71	1.7
Mulanje	2	2	12	15	430932	5387	2439	45.3	1395	25.9	1044	19.4	808	227	28.1	200	24.8	27	3.3	145	2.7
Mangochi	2	2	20	23	702769	8785	2861	32.6	1134	12.9	1727	19.7	1318	351	26.6	130	9.9	221	16.8	150	1.7
Mwanza	1	1	13	13	145276	1816	1072	59.0	510	28.1	562	30.9	272	187	68.7	169	62.0	18	6.6	36	2.0
	21	22	142	171	4726510	59081	25835	47.5					8176	3191	42.8					1294	
	Av returns		0.845			54504	47.4							39.0							2.4
	Adjusted pop				4017650 for EOC fx																
	N1		District population X 5% where 5% is the CBR																		
	N2		District population X 5% X15% where 5% is the CBR and 15% is the expected complication rate																		
	N3		Number of direct obstetric complications treated																		
	*		Estimated																		

