Safe Motherhood Needs Assessment, Zambia, 1996

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ABSTRACT

As part of the development of a national reproductive health plan, Zambia's Ministry of Health carried out a safe motherhood needs assessment in 1996. The specific objectives of the assessment were to describe the availability, use and quality of maternal and newborn care, and to identify gaps in the provision of maternal care. Ninety-six health centres, eleven hospitals and nine district health management teams were surveyed. Clients and staff were interviewed at each of these sites using WHO's safe motherhood needs assessment methodology. While the 1992 Demographic Health Survey indicated that 96 per cent of pregnant women had at least one antenatal check-up and that only half delivered in a health facility, the assessment found substantial gaps in the availability and quality of care. The results provide information for development of the national safe motherhood policies and guidelines within a comprehensive reproductive health programme. (*Afr J Reprod Health* 1999;3 [1]: 66-80)

RÉSUMÉ

Evaluation des Besoins dans le Domaine de la Maternité Protégée, Zambie, 1996. Dans le cadre d'un plan national de santé reproductif, le ministère de la santé de la Zambie a réalisé en 1996 une évaluation des besoins en matière de maternité protégée. Les buts spécifiques de cette étude étaient de décrire la disponibilité, l'utilisation et la qualité des soins de la mère et du nouveau-né et d'identifier les déficits en matière de prestation de soins maternels. Quatre vingt seize centres de santé, onze hôpitaux et neuf équipes de gestion sanitaire de quartier furent ainsi enquêtés. Les clients et les membres du personnel étaient interviewés dans chacun des sites selon la méthodologie de l'OMS relative aux évalulations des besoins en matière de maternité protégée. Alors que l'Enquête Démographique et de Santé de 1992 indiquait que 96% des femmes enceintes avaient eu au moins un examen prénatal et que la moitié avait accouché dans un centre de santé, l'évaluation a découvert des déficits importants de disponibilité et qualité des soins. Les résultats fournissent des informations utiles pour le développement de la politique et directives nationales en matière de maternité protégée en un programme de santé reproductif compréhensif. (*Rev Afr Santé Reprod* 1999;3[1]: 66-80)

KEY WORDS: *Safe motherhood, Zambia, needs assessment*

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Introduction

The Safe Motherhood Initiative was introduced in Zambia in 1992 in order to address the risk faced by women during pregnancy, delivery, and puerperium. The national implementation took place from 1994 onwards, and the Safe Motherhood Initiative has been established in the context of primary health care. Four strategic interventions have been identified: family planning, antenatal care, essential obstetric care, and clean and safe delivery.[1]

As part of the development of a national reproductive health plan, Zambia's Ministry of Health carried out a safe motherhood needs assessment in 1996. The safe motherhood needs assessment has been designed by WHO to support countries in their efforts to reduce maternal and neonatal mortality and morbidity, by facilitating the evaluation of the current status of the programmes and addressing the identified gaps in service delivery, planning, and management.[2] The results of the assessment provide the background for development of the national safe motherhood policies and guidelines within a comprehensive reproductive health programme.

Background

Zambia is a landlocked southern African country with 9 provinces, subdivided into 61 districts at the time of the survey. Its people are linguistically and culturally diverse. In the past, Zambia was one of Africa's most prosperous countries. A weakening economy, a rapidly increasing population, and increasing urbanisation contributed to the growth of poverty and declining expenditures on health and education throughout the 1980s. Politically, Zambia moved to multi-party democracy in 1991. Economic and structural adjustment was then instituted. The Ministry of Health embarked on comprehensive health care system reforms in 1992. The vision of the health reforms is to bring health care as close to the family as possible through decentralisation and by partnership with the community and other sectors. Based on the DALY (Disability Adjusted Life Years) method, a cost-effective essential health care package was developed. Of the ten most important health problems, the first are malaria, acute respiratory infections (ARI) and AIDS. Maternal health problems and anaemia occupy the last two places. At least six of the top ten diseases are directly related to maternal health.[3]

Zambia's mid-1995 population was estimated to be 9.4 million, with a mean annual growth rate for the 1980-1990 period of 3.2 per cent.[4] According to the 1992 Demographic and Health Survey (DHS), the total fertility rate was estimated to be 6.5. Contributing factors to the growth rate are the low rates of contraceptive use (9 %) and a huge population momentum, with almost half the population under 15 years of age.[5] Life expectancy at birth is declining.[4]

About 50 per cent of all births take place in the community, mostly attended by relatives.[5] Individual districts are implementing a programme for traditional birth attendants (TBAs) and various problems have been reported concerning the drop-out and support of TBAs. Maternal mortality has been estimated at 940 deaths per 100,000 life births, in line with findings of small-scale community-based studies.[6] Main causes of maternal death are eclampsia, sepsis, obstructed labour, ante- and post-partum haemorrhage, and complications of unsafe abortion. Important indirect causes are malaria and HIV/AIDS. The magnitude of maternal morbidity is unknown, but is expected to exceed the mortality to a large extent.[7] The infant mortality rate is estimated to be 107 per 1,000 live births.[5]

Following the endorsement of the International Conference on Population and Development (ICPD) programme of action, Zambia has moved towards a broader concept of reproductive health. The need for a comprehensive and integrated approach is obvious. The reproductive health problems in the country are worrisome, e.g., the high incidence of unwanted pregnancies and unsafe abortions, the high sero-

prevalence of STDs and HIV, and the practical exclusion of adolescents from formal health services and information sources. In addition, there are programmatic concerns to be addressed such as the quality of the services and the distances to health facilities.[8]

Needs assessment

Objectives

The aim of the national safe motherhood programme is to reduce the maternal and perinatal mortality and morbidity. The safe motherhood needs assessment was carried out in line with this overall goal, to improve the accessibility and quality of maternal and newborn care. The specific objectives of the needs assessment were to describe the availability, use, and quality of maternal and newborn care, and to identify the gaps in the provision of maternal care. The information will thereafter be disseminated, particularly to the districts, in order to support the safe motherhood programme, within the context of the health reforms and reproductive health at the various levels.[9]

Methods and instruments

The methodology for the Zambia safe motherhood needs assessment is based upon WHO guidelines (1995).[2] A team of policy-makers, national safe motherhood experts, health educators, managers, researchers, key community and NGO representatives and service providers have steered the assessment, while a core team did the actual work of the survey. The survey addressed all the issues that impact upon service provision. The methods of the assessment included interviews, record review, and observation of the facilities. The following ten instruments were used:

1. District health management team (DHMT) form to collect information about the management at district level.
2. Facility management survey (FAC) to interview the facility-in-charge and to observe the facility.
3. Nurse/midwife (NMW) form to interview service providers.
4. TBA form to interview traditional birth attendants.
5. Antenatal care (ANC) form to collect data through exit interviews on the content and quality of antenatal care from the client's perspective.
6. Postnatal care (PNC) form for the client's perspective on postnatal care.
7. Antenatal record (ANR) form to review the antenatal records.
8. Normal delivery record (NDR) form to review records of deliveries without complications.
9. Complicated delivery eclampsia and pre-eclampsia record review (CDE) from to review records on cases with eclampsia.
10. Complicated delivery obstructed labour record review (CDO) form to examine records of obstructed labour.

Sampling

Nine out of the 61 health districts, representing 5 of the 9 provinces, were conveniently sampled, while eleven hospitals and 100 health centres were randomly sampled, using the WHO guidelines. Provision of antenatal care service was regarded as the minimum inclusion criteria, as it was assumed that pregnant women not receiving antenatal care were unlikely to return for other maternal care services. Four health centres were excluded after sampling, as they did not provide antenatal care, mainly due to staffing problems. At the time of the survey, health centres (without surgical facilities) were the first contact health facility, with a different number of staff according to the level of the health centre. The main characteristics of a hospital were its capability for surgical intervention and the availability of doctors among the staff. In the survey, no distinction was made between types of health

centres as they were all supposed to deal with maternal and newborn health problems. Selection of service providers and clients was according to the needs assessment guidelines, with a maximum of 5 midwives per selected facility. Those antenatal clients who were interviewed also had their records reviewed. Systematic sampling was used and ratios were defined per facility. In facilities with a limited number of maternal clients available on the day of the survey, convenient sampling was used. This applied to the postnatal client exit interview, as many women never returned for a postnatal check-up after their delivery. Convenient sampling was also used in cases of record review of normal and complicated delivery at the health centre, as most records were handed over to the mother after the delivery, or were sent along with the patient to the hospital in case of a complication. One to two TBAs were conveniently selected per facility. Table 1 shows the number of assessments per instrument for the various instruments.

Table 1: **Number of assessments per instrument, SMH/NA, Zambia, 1996**

Instrument	Number
DHMT: district health management team interview	9
FAC: facility assessment	107
NMW: nurse/midwife interview	217
PPC: postpartum client interview	142
ANC: antenatal client interview	584
ANR: antenatal record review	581
NDR: normal delivery review	489
CDE: complicated delivery eclampsia and pre-eclampsia record review	117
CDO: complicated delivery obstructed labour record review	168
TBA: traditional birth attendant interview	97

Adaptation of instruments

A national task force on the safe motherhood needs assessment reviewed and adapted the survey instruments. Pre-testing of the forms was carried out in some health facilities in and around Lusaka and further revisions were made accordingly. The revisions related mainly to locally-used drugs, while two instruments on pregnancy-related complications (postpartum haemorrhage and [pre-]eclampsia) were added.

Survey teams

The survey teams were composed of two data collectors and one team leader. The survey districts were invited to identify the data collectors, who had to be practising midwives, already involved in MCH activities, with survey experience. By this approach, the persons would benefit from the experience and be able to conduct interviews in the vernacular. No difficulties were encountered in identifying the data collectors. Team leaders were selected from the MCH/FP Unit within the Ministry of Health and other divisions of the ministry, and NGOs. In addition to the regular survey tasks, the team leaders had to check, daily, the filled-in survey forms on completeness and correctness of the data.

Training of the surveyors

A one-week training of the surveyors was conducted in Lusaka. The training included one day of field practice. At the end of the training, reliability checks were conducted.

Data collection

Collection of data began immediately after the training of the surveyors and lasted two weeks. A total number of nine survey teams were sent to the selected study sites, each having its own transport facilities.

Data processing and report writing

Data processing activities included data entry, data clearing, and production of tables. The *Epi-Info* statistical software package was used for data processing and analysis. Representatives of institutions and organisations involved in maternal health were invited to attend a workshop to discuss and interpret the findings. A consultant was contracted to write the needs assessment report and a second workshop took place, during which the national team reviewed this document.

Results

Health centre

Availability of maternity services. Table 2 shows data obtained through the facility management survey form on the type of maternity services provided by health centres. Forty-one of the 96 health centres observed had a midwife available. Antenatal services were available at 96 health centres. The facility review also showed that only 29 health centres could carry out syphilis testing, only 78 out of the 96 health centres were providing delivery care, while only 29 of those providing delivery care had a delivery room available and 76 provided rooming-in postnatal care. Regarding the care for complications, the survey findings revealed that only two health centres were able to perform vacuum extraction delivery. Of the health centres providing delivery care, only 31 were able to remove the retained placenta, and postpartum check-up services were provided at 82 health centres. Most of the health centres surveyed also offered family planning services and STD treatment. Communication and transport could be found in 25 and 19 of the 96 health centres, respectively.

Use of services. According to the antenatal cards, the mean number of antenatal visits for health centres was 3.2 and the most common number of visits was two. Anecdotal evidence revealed that some women came only to register in order to obtain an ANC card, as they would be scolded when presenting in labour without the card. The review of the antenatal cards also showed that majority of the women (96%) came for their first check-up in the second trimester of the pregnancy, mostly in the fifth or sixth month.

As reflected in Table 2, only 41 of the 96 health centres had a midwife among their staff. In places without a midwife, deliveries were attended by either a clinical officer or an untrained staff. The delivery registers of these places often reflected underutilisation of services and substantial numbers of stillbirth. Anecdotal information revealed that women tended to avoid male clinical officers and, at health centres staffed with only one male clinical officer, only a limited number of deliveries were performed.

Quality of services. Antenatal card review showed that only 71 per cent of the women surveyed had their blood pressure measured during all antenatal check-ups, as reflected in Table 3. Eighteen per cent of the cards had data on haemoglobin measurement available, while 42 per cent of the cards had iron supplementation recorded. Seventeen per cent of the antenatal cards had information on syphilis testing. During antenatal exit interviews, two thirds of the antenatal clients reported having their history taken, and 48 per cent reported

receiving tetanus immunisation. Twenty-four per cent of the antenatal clients interviewed reported that during the antenatal visits, their questions were answered in an understandable manner. Only 82 of the 96 health centres had sterilising facilities for equipment.

Table 2: **Availability of maternity services by health centre, SMH/NA, Zambia, 1996**

Maternity Service Provided	Number of Health Centres (% in parentheses)
Midwife available	41/96 (43)
Antenatal care (ANC)	96/96 (100)
24 hours maternity services (at those providing ANC)	82/96 (85)
Syphilis testing	29/96 (30)
Delivery care	78/96 (78)
Available delivery room, when providing delivery care	29/78 (37)
Rooming in for postpartum care of mother and baby, when providing delivery care	67/78 (86)
Postpartum check-up, at health centres providing ANC	82/96 (85)
Vacuum extraction delivery, at health centres providing delivery care	2/78 (3)
Removal of retained placenta, at health centres with ANC	31/78 (40)
STD treatment	91/96 (95)
Family planning services	95/96 (99)
Communication available	25/96 (26)
Transport available	19/96 (20)

Little information could be obtained on the quality of delivery practices at the health centre, due to the fact that delivery records were either not made or handed over to the woman after delivery. According to observations of surveyors, the quality of delivery care was often poor, in line with the findings on the limited availability of midwives and the lack of partograms, available in only ten of the health centres surveyed. Further observations revealed the poor physical facilities and the lack of basic facilities such as functional lighting, clean water supply, and a delivery bed.

The members of staff were asked for the four most important interventions when dealing with postpartum haemorrhage. Only 13 of the 141 midwives interviewed could provide all four interventions, which included checking the contraction state of the uterus, emptying the bladder, examining the placenta for completeness, and repairing tears of the vaginal vault.

A bag and mask for neonatal resuscitation could be found at only 10 of the 78 health centres providing delivery care and likely to be consulted for emergency cases. Many health centres had run out of essential obstetric drugs on the day of the survey. For severe infections, only 56 per cent had Amoxicilline, and 17 per cent had Gentamycine or Kanamycine. Only 14 and 4 per cent had drugs for hypertension and oxytocics respectively.

During the needs assessment, antenatal clients at the health centres were asked about symptoms that would prompt them to seek help.

Bleeding (42%) was the most commonly reported symptom, while 28 per cent of the women would seek help for headache/swelling/fits and for breathlessness/fatigue. Thirty (7%) out of 490 women would seek help for foul-smelling discharge. Assuming delivery outside the health facility, only twenty women (4%) would seek help for prolonged labour.

Table 3: **Quality of maternity services by health centre, SMH/NA, Zambia, 1996**

Maternity Service	Number (% in parentheses)
Syphilis testing (ANC records)	84/492 (17)
Blood pressure measurement (ANC records)	380/536 (71)
Haemoglobin measured (ANC records)	87/492 (18)
Iron supplementation (ANC records)	208/492 (42)
Clients who received understandable responses (antenatal client exit interviews)	116/490 (24)
Sterilising facilities available (facility observation)	82/96 (85)
Blank partograms, at those health centres providing delivery care (facility observation)	10/78 (13)
Knowledge on management of postpartum haemorrhage (nurse/midwife interview)	13/141 (9)
Bag and mask for neonatal resuscitation (facility observation)	10/78 (13)
Amoxicilline capsules (facility observation)	54/96 (56)
Gentamycine or Kanamycine injections (facility observation)	16/96 (17)
Antihypertensives available (facility observation)	13/96 (14)
Oxytocic injectables (facility observation)	3/78 (4)

About half (47%) of the postpartum clients reported to have left the health centre on the day of delivery, while 51 per cent left the following day. During postpartum exit interviews only 21 per cent of the women recalled a physical examination, while only 50 out of the 122 (41%) women reported to have been advised on family planning. Observation of the facilities revealed that most health centres only had oral contraceptives and condoms available as family planning methods.

Hospital care

Availability of maternity care. Health facility in-charges were asked about the availability of maternal services. Table 4 provides the findings on the hospitals surveyed. Only 4 out of eleven hospitals provided termination of pregnancy facilities, while only 9 of the 11 hospitals surveyed performed caesarean sections. Nine out of 11hospitals provided family planning services and eight hospitals provided postpartum care.

Use of maternity services. The findings on the timing of the first antenatal visit and the number of subsequent visits were consistent with those of the health centre.

Quality of services. Review of antenatal cards obtained from women attending antenatal clinic at the hospital showed that haemoglobin testing was measured and recorded on 35 per cent of cards, and 38 per cent of cards showed

that iron supplementation was given. Even though 8 of 11 hospitals had syphilis test kits available on the day of the survey, and 10 of the 11 said they were able to test: the results of syphilis testing were recorded on only 28 per cent of the antenatal cards.

Table 4: **Provision of maternity services by hospital, SMH/NA, Zambia, 1996**

Service Provided	Number of Hospitals
Antenatal care	10/11
Tetanus toxoid immunisation	10/11
STD treatment	11/11
Syphilis testing	10/11
Delivery care	11/11
Vacuum extraction delivery	10/11
Rooming in for postpartum care of mother and baby	10/11
Postpartum check-up	8/11
Family planning services	9/11
Removal of retained placenta	11/11
Termination of pregnancy	4/11
Caesarean section	9/11

Table 5: **Quality of maternity service by hospital, SMH/NA, Zambia, 1996**

Maternity Service (instruments in parentheses)	Number (% in Parentheses)
Syphilis testing (ANC records)	25/89 (28)
Syphilis testing kits available (hospital facility observation)	8/11
Haemoglobin measured (ANC records)	31/89 (35)
Iron supplementation (ANC records)	34/89 (38)
Clients who received understandable responses (Antenatal client exit interviews)	27/94 (29)
Vaginal examinations standard during delivery according to set (delivery record)	179/338 (53)
Resuscitation mask and bag (hospital facility observation)	11/11
Cases with eclampsia not receiving any drugs (complicated records)	6/65 (9)
Gentamycin or Kanamycine available (hospital facility observation)	4/11
Oxytocic injectables (hospital facility observation)	4/11
IV solutions available (hospital facility observation)	5/11
Hospitals able to perform caesarean section with properly equipped theatres (hospital facility observation)	4/9
Emergency caesarean section performed within one hour (complicated records)	6/64 (9)

The needs assessment reviewed the delivery records at the hospital. According to records, 53 per cent of the women in labour had received vaginal examinations consistent with the set standards of four-hourly examination. Only 78 per cent of delivery records had information on birth weight, and only 74 per cent had information on the condition of the baby.

The safe motherhood needs assessment surveyed the quality of essential obstetric care through review of hospital records. It was found that 6 out of 65 patients (9%) of patients diagnosed with eclampsia received no drugs; and only 4 of the 9 hospitals had theatres with basic equipment available to perform caesarean sections. In line with obstetric practices in Zambia, the research team had decided on the standard that emergency caesareans be performed within an hour of admission or onset of the indication. The needs assessment, however, found that almost half of the caesarean sections took place 5 hours or more after the indication for emergency caesarean section became clear. Some of the reasons for delay were lack of drugs at the moment of an emergency or lack of means for blood replacement.

The needs assessment showed lack of essential obstetric drugs at the hospitals on the day of survey. Antibiotics most commonly used in Zambia to treat severe infections were available in only 4 hospitals. Only 5 out of the 11hospitals had any type of i.v. solution in stock; while only 4 of the hospitals had oxytocic injectables available. All the hospitals had basic equipment for resuscitation of the newborn.

Although there is still room for considerable improvement, the hospitals performed better on postnatal care than the health centres. Half of the women reported during the postnatal exit interview to have had a physical examination during the postpartum visit, while twelve out of the twenty clients had discussed family planning. According to the family planning registers, 5 of the 11hospitals were offering IUD insertion in addition to the provision of pills and condoms, while 6 hospitals had provided female surgical contraception and one hospital had male surgical contraception.

Staff

The needs assessment revealed that districts showed considerable variation in the total number of midwives per 100,000 population, ranging from 3.1 to 25.8.

Table 6: **Training of midwives by health centre and hospital, SMH/NA, Zambia, 1996 (% in parentheses)**

Timing of Most Recent Refresher Training on Midwifery	Staff at Health Centre (n=167)	Staff at Hospital
a. Within last two years	42 (25)	8 (16)
b. More than two years ago	57 (34)	20 (42)
c. Never	68 (41)	20 (42)

There were also striking findings in relation to training and supervision of midwives, as reflected in Tables 6 and 7. Midwives were asked about their last refresher training on midwifery. It was found that only 25 per cent of the midwives posted to a health centre had received refresher training within the last two years, while only 16 per cent of the midwives at the hospital were retrained during this period. However, 41 per cent of the health centre's staff and 42 per

cent of the midwives of the hospitals had never had any refresher training in midwifery. Similar patterns could be observed concerning refresher training on family planning.

Table 7: **Supervisory visit to midwives by the district, SMH/NA, Zambia, 1996 (% in parentheses)**

Last Supervisory Visit by District	Midwives at Health Centres (n=167)
a. Within past six months	64 (38)
b. More than six months ago	33 (20)
c. More than five years ago or never	70 (42)

Regarding supervision, only 38 per cent of the midwives at the health centres had received a supervisory visit within the last six months. Forty-two per cent had either received supervision by the district more than 5 years ago or had never been supervised.

Discussion

The WHO safe motherhood needs assessment is a useful tool for the evaluation of maternal health services at national, regional and district levels. The needs assessment allows a description of the availability and use of maternal health services. The quality of maternal care, through observation, is difficult to ascertain; this is particularly true for obstetric care. Observation of actual care provision has practical problems, such as the availability of maternal cases, the influence of observation on the performance of health workers, the reliability of measuring the health workers' practices against a gold standard, and the completeness of recording of the observed practices. The safe motherhood needs assessment evaluates quality of care in indirect ways, through client exit interviews; review of client cards and other records. The data obtained in this way enable researchers to make conclusions about the level of care and to recommend ways of improving the maternal health services.

Due to the sampling method, the findings of the safe motherhood needs assessment may not be representative for the national situation in the strict sense. However, it does provide a useful impression of the standards of care within the nine selected districts of Zambia and is a useful indication of the level of care within other districts.

The needs assessment examined mainly the health facility components and did not include a community component. It is known that cultural and traditional practices are, in general, important determinants of health-seeking behaviour and that they also influence the actions taken when pregnancy and delivery-related complications occur. With half of the women delivering at home, we need a better understanding of the cultural and traditional practices. Further research will also be required to identify and address the quality of care provided at the community level.

More than any other programme, safe motherhood requires an effective linkage between the different levels of care, as pregnant women do have different needs for treatment, and obstetric complications are often unpredictable. In order to facilitate access to a higher level of care, maternal health services should be available within the closest range possible to where people live. All the levels involved – community, the health centre as first contact point, and the hospital as referral centre – must be functioning appropriately and be linked through a good referral system, in order to be effective in preventing maternal and perinatal mortality and morbidity.

The safe motherhood needs assessment

found considerable gaps in the provision of quality care at all levels and concerning all components. Opportunities to identify possible complications and provide information on danger signs of pregnancy-related complications were underutilised during antenatal visits. Of the women interviewed, only a limited number were able to mention danger signs for which they should seek help, showing that antenatal clinics provided inadequate education. As the findings on the treatment of eclamptic patients and the timing of an emergency caesarean section showed, quality of essential obstetric care at the hospital level was generally poor. Other contributing factors were lack of drugs, supplies, and equipment, aggravating the already compromised provision of essential obstetric care services. Equally alarming was the lack of the means for referral at health centres, often resulting in heart-breaking situations when a life-threatening complication occurred.

The availability of adequately trained staff is a major determining factor in the level of care provided at health centres. The findings of the needs assessment showed that midwives were available in only about forty per cent of the health centres. Main reasons for these findings were the reluctance of health staff to go on posting to rural areas, and the tendency to retain midwives at the district office. Not only was there a shortage of midwives, but those that were available were poorly trained. Only a limited number of health centres were able to provide essential obstetric care. An aggravating issue is that under the Nurse/Midwife Act 1970, currently under revision, midwives are only allowed to perform repair of perennial and vaginal lacerations, newborn resuscitation and prescription of ergometrine, while nurses are not allowed to perform any of these. When needed, most midwives will carry out these interventions, even though they do not have legal back up in case problems arise.

The survey showed that the performance of staff, in relation to delivery, was poor. For example, only about half of the women were properly examined during delivery. The partogram, an important tool for monitoring the progress of labour, was unavailable at most of the health centres providing delivery care. The delivery records confirmed the assumption that problems occurring during delivery and labour might not be recognised in time. Anecdotal evidence revealed that midwives regarded the partogram as a tool only to be used by students.

Lack of in-service training and supervision as additional opportunities for achieving and reinforcing quality maternal health care were identified. Nurses and midwives would rather request training of TBAs than demand refresher training for themselves, while managers did not consider it necessary to update maternal service providers. This may be partly explained by the recently introduced decentralisation, the changing roles, and the responsibilities of district managers. Supervision was found to be provided in an irregular manner. Almost two-thirds of the staff had received supervision more than six months ago. In order to make supervision a meaningful exercise, there needs to be a positive and trusting atmosphere between the supervisor and the health worker. This requires not only professional knowledge and skills on the side of the supervisor, but also personal communication skills and commitment towards supportive supervision. Supervisory visits should preferably take place at least once every three months. Given the generally existing transport problems, alternative means for supervision should be explored, in consultation with the health facility staff. Although the topics are still sensitive, a careful introduction of self-appraisal and peer-review should be considered. The recently revised Health Management Information System can be of help in this regard. Maternal audit reviews should be established at all health facilities under the guidance of the district health management team.

In conclusion, the safe motherhood needs assessment has identified several gaps in the pro-

vision of maternal care, e.g., lack of training of available midwifery staff and shortage of midwives at the health centres surveyed. Some of the gaps, such as regular refresher training might easily be overcome, while others require a more comprehensive approach, such as the provision of integrated services and proper placing of staff. It will require awareness and commitment of senior policy-makers and politicians to ensure the adjustment of the health care system which are needed. The findings of the needs assessment, along with the recommendations, need to be made available to all district managers and health service providers.

Recommendations

The safe motherhood needs assessment has resulted to a total of 16 recommendations along the lines of the programme components (see Box 1). The development of a National Safe Motherhood Policy has been recognised as the first step in the strengthening of maternal and newborn care, and has been given the highest priority. The policy needs to be followed by the development of national guidelines and standards for maternal care. The needs assessment has provided enough background for the development of the National Safe Motherhood Policy, which needs to include, among others, statements on the training of staff, the staffing situation, the integrated provision of an essential maternal health care package, the availability of delivery and essential obstetric care, and the availability of TBAs or other community-based health workers trained in midwifery skills to assist women who elect to deliver at home.

In the meantime, the Ministry of Health, through the Central Board of Health needs to ensure capacity building of the birth attendants at all levels through refresher training and supportive supervision. Maternal death reviews need to be introduced at all health facilities in order to obtain a better understanding of the direct, indirect, and contributing factors of maternal deaths and to improve the case management of complicated cases.

The next step will be to improve the quality of care. The national standards and guidelines on safe motherhood need to set minimum standards of care for each type of facility, including the availability of drugs, equipment, logistics, referral means, and proper deployment of available staff. Refresher training should be provided at least once every two years and should include hands-on training. Essential obstetric care has to be included in the pre-service training curriculum, while the Nursing Act needs to be revised urgently. Districts have to identify additional ways of supporting their staff, for example, through regular meetings with staff or back up support through radio contact.

In the long-term, the Ministry of Health needs to improve accessibility to maternal care services, in particular, access to essential obstetric care. Within the ongoing health sector reform, a critical review of the distribution of maternal care facilities needs to take place, while appropriate staffing and support should to be ensured. As indicated earlier on, a better understanding of the health-seeking behaviour needs to be obtained in order to address the socio-cultural barriers to obtaining basic and essential maternal care.

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Box 1: Recommendations of the Safe Motherhood Needs Assessment

1. Policy

A National Safe Motherhood Policy, including maternal and newborn care, should be developed as a first priority. This should be followed by guidelines and standards for care.

Awaiting the introduction of the public health practitioner, the Ministry of Health should ensure legal authorisation of life-saving interventions by nurses/midwives within the revised Nurse/Midwife Act and revision of the training curricula accordingly. A similar procedure should be followed for clinical officers.

2. General services

The district health management team (DHMT) should ensure that all components of safe motherhood, including care for normal deliveries, should be provided by all health centres in an integrated (supermarket) approach, following the principle of service provision, and be as close to the community as possible. All delivery services should be available 24 hours per day.

The hospital boards should ensure that all hospitals are able to provide essential obstetric care and manage complications, including obstetric surgery. All delivery and essential obstetric care should be provided on a 24-hour basis.

3. Antenatal care

In order to improve the quality of antenatal care, the district management team, through the reproductive health specialist, must ensure the provision of an essential package of antenatal care interventions, which include the following:

(a) Health education and counselling about pregnancy and delivery, including warning signs of pregnancy-related complications and place of delivery.
(b) Blood pressure measurement at every visit.
(c) Urine examination of women with elevated blood pressures and whenever indicated.
(d) Screening for anaemia by physical examination and haemoglobin estimation.
(e) Malaria prophylaxis according to national malaria policy.
(f) Syphilis testing at least at the first antenatal contact.
(g) Provision of STD/HIV prevention and management services during all contacts with pregnant women and mothers.
(h) Provision of a total of five tetanus toxoid injections to all pregnant women, using all contact opportunities, including childrens' immunisation clinics.

Health workers, including TBAs, should educate all pregnant women to come for their first antenatal care (ANC) visit during the first trimester and stress the importance of attending at least four ANC sessions, preferably starting before the 16th week or otherwise at 20, 26, 32, 36/38 weeks of pregnancy.

4. Clean and safe delivery

The district health management team should ensure the basic principles of clean and safe delivery in each health facility that is providing delivery care. The introduction and utilisation of a standardised partogram for the monitoring of each labour and delivery should be established.

The district health management team, in conjunction with health workers, should train traditional birth attendants (TBAs) on the importance of clean and safe delivery and caution the TBAs on the use of herbs during labour and delivery. This should be stressed during both TBA training and regular meetings between TBAs and health centre staff.

5. Essential obstetric care

The district health management teams should ensure that all health centres are able to provide initial management of obstetric complications prior to referral, according to the training of the staff at the facility. The DHMT should ensure regular upgrading of staff skills and knowledge.

The hospital boards should ensure the provision of proper and timely essential obstetric care in their hospitals; and adequate skills of personnel and emergency stock of drugs and supplies. Prevention and management of complications of unsafe abortions must also be ensured.

TBAs should be taught the warning signs of pregnancy-related complications, and together with the community, be closely involved in the detection and referral of complicated cases.

6. Postpartum services

All health facilities should provide postnatal care. Mothers should be kept at health facilities for at least

eight hours after delivery. Postnatal check-ups should occur within the first week after delivery and at the time of the first immunisation visit of the child after BCG or during outreach clinics.

TBAs must be made aware of this so that they can correctly assist in health education promoting postpartum care.

The essential elements of a postpartum check-up should include:

(a) care of the mother and the newborn in the immediate post-delivery period;
(b) postpartum check-up according to standards, to be defined by the nascent Safe Motherhood Policy;
(c) advice to the mother to return in case of problems;
(d) promotion of breast-feeding; and
(e) provision of family planning information and services.

7. Family planning services

All facilities should provide an appropriate and broad method mix, along with counselling, to meet the varying needs of clients throughout their reproductive lives, taking into account their personal values and moral needs.

8. Integration of services for the diagnosis and treatment of STDs

Quality STD services should be integrated with all other aspects of safe motherhood care. Syphilis testing should be made available to each health facility.

9. Staffing

District health boards should post at least one midwife per health centre or train one staff member, female as preferred by clients, specifically on midwifery skills.

10. Training and skills maintenance

Skills of health providers must be maintained to provide technically competent maternal and newborn care. Nurses/midwives who provide safe motherhood services should receive continuing education on midwifery/essential obstetric care and family planning, including training on counselling at least every two years.

The district should ensure that those nurses/midwives who are required to provide maternal care, but have no practice in normal or complicated deliveries within the last six months obtain these skills, either by means of clinical refresher training or through observed practice with a skilled colleague. Districts should ensure TBA refresher training, emphasising the urgency of recognising danger signs and prompt referral.

11. Supervision

Staffs involved in supervision need both technical and supervisory knowledge and skills in order to create a supportive environment that will enable the provision of quality maternal care. If supervisory skills and knowledge are found to be lacking, supervisors should undergo training in these fields.

Health centre staff should support and strengthen the quality of service provision by TBAs through regular supervisory meetings with TBAs, including skills practice.

12. Infrastructure

Essential safe motherhood infrastructure, including a delivery room and bed, functional lighting 24 hours a day, sterilising facilities, water supply and modern means of communication should be made available to all health facilities. The central and regional levels should support DHMTs in ensuring the availability of these.

13. Supplies and equipment

It should be the responsibility of the individual in charge of each facility, in collaboration with the district, to ensure the availability of necessary supplies and equipment for all aspects of care relating to safe motherhood. Stationary supplies, such as records and partograms, should be adequate.

Health centre essential drug kits should include sufficient safe motherhood and family planning drugs and supplies, as established by population-based predictions of expected birth. Hospitals should also ensure the availability of these commodities.

Potentially life-saving obstetric drugs should be made available as far down the health service system as the skills and training of providers allow. New drugs, for example, magnesium sulphate for the treatment of eclampsia, should be introduced as soon as possible at the appropriate level.

14. Referral systems and linkages

Health centre staff and DHMTs should ensure the provision of adequate transport and communication

facilities, with priority on more isolated centres. Communities, led by TBAs, community workers and neighbourhood health committees, should be involved in referrals.

15. Information, education, communication

IEC materials on all aspects of maternal and newborn care should be developed and made available to all health facilities. IEC development should be consistent with the stage of development of the safe motherhood programme and adapted to the various target groups throughout the country.

16. Management, monitoring and evaluation

The quality of management information needs to be improved. Health workers at all levels need to be trained on the use of data for planning, implementing, monitoring and evaluation of services. The district management team should use the data to monitor the management and provision of quality care at health facility level.

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