MATERNAL MORTALITY UPDATE 2002

A FOCUS ON EMERGENCY OBSTETRIC CARE

UNFPA

table of contents

This second edition of the UNFPA Maternal Mortality Update focuses on Emergency Obstetric Care, an intervention that is fundamental to reducing maternal mortality worldwide. The momentum for addressing maternal mortality has been strengthened by numerous international resolutions—most recently the Millennium Development Goals agreed upon at the Millennium Summit in September 2000. The Millennium Declaration calls for a 75 per cent reduction of 1990 maternal mortality rates by 2015. This report analyses the issue and shares tools and experiences to meet this challenge.

preface	2
acknowledgements	3
list of abbreviations	4
understanding the issue	5
UNFPA's strategic response	11
UNFPA-supported interventions at the country and regional levels	17
africa division	18
latin america and the caribbean division	23
asia pacific division	27
division of arab states and europe	30
humanitarian response unit	32
annex: emergency obstetric care: checklist for planners	35

PHOTO CREDITS:

COVER: Mali/Ruth Massey/UNDP

FRONT SECTION:

Mongolia/Don Hinrichsen/UNFPA

Guatemala/Ruth Massey/UNDP

PAGE 3: Morocco/Czikus Carriere/AMDD

PAGE 16: Ethiopia/Photo courtesy of Hamlin Fistula Welfare and Research Ltd.

preface

In the last decade, the goal of preventing the deaths of women during childbirth has gained wider attention and urgency. Indeed, reducing maternal mortality is one of the eight priority Millennium Development Goals set by Member States of the United Nations. The ambitious goal of reducing maternal mortality by 75 per cent by the year 2015 presents a formidable challenge, but one that can be achieved through concerted and sustained efforts, and with the tools already available to us.

Working for the survival and well-being of mothers is an economic, as well as a moral, social and human rights imperative. The well-being of children depends in large part on their mothers, and maternal survival has ripple effects that go beyond the family to bolster the economic vitality of whole communities.

We are now better prepared to address this problem than ever before. Years have been spent analysing the causes of maternal mortality and developing an effective strategy to prevent it. *It is time to put this strategy into action*. Of course, logistics and day-to-day operations remain challenging. Persistent poverty and conflict situations complicate many of the local efforts to save women's lives. But the work continues in spite of these obstacles.

UNFPA actions to reduce maternal mortality continue to focus on the three-pronged strategy of family planning, skilled attendance at birth and emergency obstetric care for all who develop complications. This update, which is intended to keep the development community abreast of UNFPA's work on behalf of mothers, focuses on the critical issue of emergency obstetric care. Since 15 per cent of pregnancies will require emergency medical intervention no matter how carefully they are screened, emergency obstetric care is absolutely essential to reducing maternal mortality and disability. The front pocket of this report includes a checklist designed specifically to help programme managers analyse and improve the availability and quality of emergency obstetric services in their countries.

Efforts to improve outcomes for pregnant women have met with success in some cases and further challenges in others. Some countries have forged new paths to address maternal morbidities such as obstetric fistula. Economic decline in a number of countries has meant shortages of trained medical personnel and medications. The second part of this report includes a review of creative programming for maternal mortality interventions at the country level. Lessons from programmes in West Africa are detailed in a separate booklet (*Making Safe Motherhood a Reality in West Africa: Using Process Indicators to Programme for Results*) in the back pocket.

UNFPA takes a rights-based approach to this issue, both in the priority it assigns to reducing the injustice and tragedy of maternal death, and in the design and implementation of maternal mortality programmes and policies. Increasingly, the Fund also works as a catalyst to leverage and guide the use of the far larger resources of national governments and development partners to this effort. This publication is one of the information and advocacy tools designed to focus attention and resources on saving and improving the lives of childbearing women everywhere.

Mari Simonen, Director
Technical Support Division, UNFPA

acknowledgements

This report was prepared and coordinated by Laura Weil, Jean-Claude Javet, Andrew Rebold and France Donnay of UNFPA's Technical Support Division. Invaluable contributions have been made by country offices, Country Technical Support Team advisers and Headquarters experts who revised and contributed to the final draft. Special thanks to Deborah Maine, Director of the Averting Maternal Death and Disability programme (AMDD), and Allan Rosenfield, Project Co-investigator and Dean of the Joseph L. Mailman School of Public Health at Columbia University, for providing technical and financial support to this publication. Mary Zehngut and Janet Jensen contributed to the final design and production.

UNFPA is the world's largest internationally funded source of population assistance to developing countries. Since it began operations in 1969, the Fund has provided nearly $6 billion in assistance to developing countries, amounting to roughly one fourth of the world's population assistance from donor nations to developing countries.

THIS PUBLICATION IS ALSO AVAILABLE AT WWW.UNFPA.ORG/PUBLICATIONS

list of abbreviations

AIDS	Acquired Immunodeficiency Syndrome
CST	Country Support Technical Team
EmOC	Emergency Obstetric Care
EOC	Essential Obstetric Care
DASE	Division of Arab States and Europe
HIV	Human Immunodeficiency Virus
HRU	Humanitarian Response Unit
ICPD	International Conference on Population and Development
IM	Intra-muscular
IPD	Integrated Population and Development
IPT	Intermittent Preventative Treatment
IV	Intravenous
LAC	Latin America and the Caribbean Division
MDGs	Millennium Development Goals
MMR	Maternal Mortality Reduction
NGO	Non-Governmental Organization
OB/GYN	Obstetrician/Gynaecologist
PHC	Primary Health Care
RSH	Reproductive and Sexual Health
STI	Sexually Transmitted Infection
SWAps	Sector-Wide Approaches
TBA	Traditional Birth Attendant

Agencies and Organizations

AMDD	Averting Maternal Death and Disability Programme (Columbia University)
ASMUNG	Ngobe Women's Association (Panama)
FCI	Family Care International
IDB	InterAmerican Development Bank
PAHO	Pan American Health Organization
UNAIDS	Joint UN Programme on HIV/AIDS
UNICEF	United Nations Children's Fund
USAID	US Agency for International Development
WHO	World Health Organization

understanding the issue

Pregnancy and childbirth claim the lives of an estimated 514,000 women each year. This translates to one woman dying every minute. The overwhelming majority of these deaths (98 per cent) occur in the developing world. Tragically, nearly all of them could be prevented.

LOCATION	MATERNAL DEATHS (% OF WORLD TOTAL)	MATERNAL MORTALITY RATIO (PER 100,000 LIVE BIRTHS)
Africa	273,000 (>50%)	1,000
Asia	217,000 (42%)	280
Latin America & the Caribbean	22,000 (4%)	190
Europe	COMBINED 2,800 (1%)	28
North America		11
Oceania	-	260
World	**514,000**	**400** (AVERAGE)

(1995 MM ESTIMATES, WHO/UNICEF/UNFPA)

Maternal mortality affects not only women, but also their families and communities. The risk of an infant dying increases significantly with the mother's death. The death of a woman of reproductive age also brings significant economic losses and setbacks to community development. From human rights, economic and public health perspectives, mobilizing resources to combat maternal mortality is imperative.

Since the launch of the Safe Motherhood Initiative in 1987, the goal of reducing maternal mortality has been reiterated at many global conferences, from the 1990 World Summit for Children to the International Conference on Population and Development (ICPD) and its review, ICPD+5, in 1999. Most recently, at the Millennium Summit in 2000, the United Nations Member States issued the Millennium Development Goals (MDGs) that call for a three-fourths reduction in maternal mortality rates by the year 2015. As only eight goals were selected, inclusion in the MDGs was a triumph for maternal mortality prevention and illustrates that the global community views safe motherhood as a top priority.

The slow success in reducing maternal mortality rates is due, in part, to the complex political and social issues related to poverty and the status of women. It is also due, in part, to the original misguided emphasis of maternal mortality programmes in the developing world. The historical focus of these programmes on the prediction and prevention of obstetric complications failed to take into account the scientific limitations of this approach. It also shifted the focus away from the critical period of delivery.

Maternal morbidity, or complications experienced by women who survive childbirth, are also of great concern. For every woman who dies as a result of pregnancy, some 30 women live but experience lasting morbidities as a result. An estimated 20 million women suffer from nonfatal complications of pregnancy, including anaemia, infertility, pelvic pain, incontinence and obstetric fistula.

Because these issues are seen as core components of its mandate, UNFPA has mobilized to combat both maternal morbidity and mortality and supports MMR programmes in 89 countries worldwide. Many of these programmes are implemented in partnership with other agencies active in this arena.

The five primary complications

Nearly two thirds of maternal deaths worldwide are due to five direct causes: haemorrhage, obstructed labour, eclampsia (pregnancy-induced hypertension), sepsis, and unsafe abortion. The remaining third are due to indirect causes, or an existing medical condition that is worsened by pregnancy or delivery (such as malaria, anaemia, hepatitis, or increasingly, AIDS).

About 15 per cent of all pregnancies will result in complications. Untreated, many of these complications will be fatal. What makes maternal mortality such a challenge is the fact that these complications are extremely difficult to predict. Despite years of research, we still have no reliable method of predicting the vast majority of cases of haemorrhage, obstructed labour and eclampsia. While the general health status of pregnant women is important for a positive outcome of delivery, deadly complications randomly occur in all women. This is the case even in the developed world where the latest medical technology is readily available. Prediction is generally limited to identifying only high-risk *groups* of women. It is nearly impossible to determine which individual women will develop complications. In reality the overwhelming majority of pregnancies and births take place among women who are considered low-risk. Consequently, while the percentage of deaths may be higher among high-risk women, the greatest numbers of deaths take place among women considered to be low-risk.

For this reason, the focus for addressing maternal mortality has shifted from predicting complications during pregnancy to preparing for efficient emergency interventions. In general, emergency obstetric interventions are inexpensive and can easily be carried out by specially trained health professionals.

In this document maternal mortality, or maternal death, refers to *"the death of a woman while pregnant or within 42 days of the termination of a pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes."*

(INTERNATIONAL CLASSIFICATION OF DISEASES, 10TH REVISION. WORLD HEALTH ORGANIZATION, GENEVA, 1992.)

HIV/AIDS and maternal mortality

The exact percentage of maternal deaths linked to HIV and AIDS is unknown. HIV is associated with poor general maternal health, which makes women more vulnerable to a number of infections and conditions that increase the likelihood of complicated pregnancy outcomes, such as malaria, anaemia and tuberculosis. HIV infection has also been associated with an increased risk of spontaneous abortion and of postpartum haemorrhage. Attributable risks have not yet been determined.

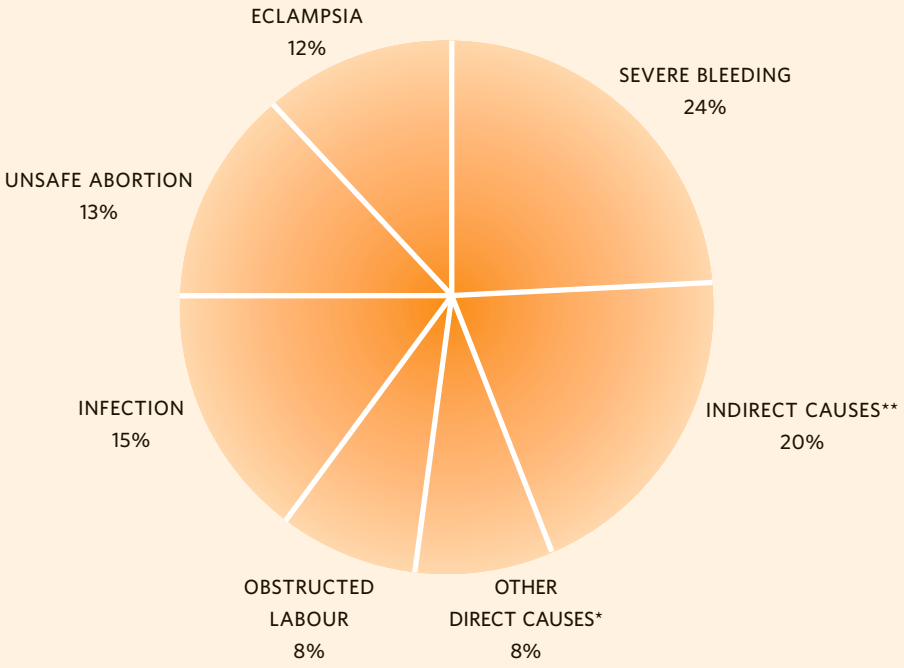
HIV prevention and treatment and maternal mortality reduction are well-suited for joint programming, as there is considerable overlap in their causes and in the interventions to prevent them. Sharing resources for HIV and maternal mortality prevention programming is logical.

Programmes that target the reduction of sexually transmitted infections reduce both the incidence of HIV infection and a woman's risk of postpartum infection. Antenatal clinics are excellent places to offer voluntary testing and counselling for HIV, which can help women who are HIV-negative get the information and skills to protect themselves from becoming infected. In addition, most maternal-to-child transmission of HIV occurs during delivery. Caesarean sections have been shown to reduce vertical transmission, the leading cause of HIV infection in children.

The Three Delays Model

Current programmes devote much of their efforts to emergency preparedness and to the provision of EmOC. An increasing number of such programmes

CAUSES OF MATERNAL MORTALITY



* OTHER DIRECT CAUSES INCLUDE: ECTOPIC PREGNANCY, EMBOLISM, ANAESTHESIA-RELATED

** INDIRECT CAUSES INCLUDE: ANAEMIA, MALARIA, HEART DISEASE

SOURCE: WORLD HEALTH ORGANIZATION. *MATERNAL HEALTH AROUND THE WORLD*. GENEVA, 1997.

are based on the Three Delays Model. This is a framework to explain the social factors responsible for maternal death. It helps us target interventions and prevent maternal mortality at every stage. In most instances, women who die in childbirth experienced at least one of the following three delays:

- **The First Delay** is the delay in deciding to seek care for an obstetric complication. This may occur for several reasons, including late recognition that there is a problem, fear of the hospital or of the costs that will be incurred there, or the lack of an available decision maker.
- **The Second Delay** occurs after the decision to seek care has been made. This is a delay in actually reaching the care facility and is usually caused by difficulty in transport. Many villages have very limited transportation options and poor roads. Some communities have developed innovative ways to address this problem, including prepayment schemes, community transportation funds and a strengthening of links between community practitioners and the formal health system.
- **The Third Delay** is the delay in obtaining care at the facility. This is one of the most tragic issues in maternal mortality. Often women will wait for many hours at the referral centre because of poor staffing, prepayment policies, or difficulties in obtaining blood supplies, equipment or an operating theatre. The third delay is the area that many planners feel is easiest to correct. Once a woman has actually reached an EmOC facility, many economic and sociocultural barriers have already been overcome. Focusing on improving services in the existing centres is a major component in promoting access to EmOC. Programmes designed to address the first two delays are of no use if the facilities themselves are inadequate.

Elements of programming success

We know that maternal mortality can be reduced. Most of Europe and North America once had levels of maternal mortality comparable to those in the developing world today. Nearly universal access to skilled attendance at birth and to emergency obstetric care has reduced maternal mortality rates to almost zero. While it would be unrealistic to attempt to replicate this success in exactly the same form in developing countries, it is possible to significantly reduce maternal mortality in resource-poor countries.

Developing countries where MMR programmes have been successful share several common programming ingredients. In most of these countries there has been a gradual shift to professional attendance at birth and a move towards facility-based deliveries. In Cuba, Malaysia and Sri Lanka, where maternal mortality rates are comparatively low, governments made a commitment to strengthen the entire health-care delivery system. This has resulted in a high proportion of births attended by a skilled professional and reliable referral systems for complicated deliveries. In most of these countries, health services are offered for free or at very low cost. Women in Sri Lanka are also likely to use family planning services to prevent too-early and too-closely spaced pregnancies. In Malaysia, a decline in maternal mortality rates was associated with the introduction of confidential maternal death audits to identify preventable causes of maternal deaths. These countries have proven that it is possible to reduce maternal mortality in nearly every country. Even in countries where most women deliver at home, or where education and health systems are collapsing under the stress of poverty and AIDS, reducing maternal mortality is possible through a focus on treating complicated deliveries.

WHAT IS SKILLED ATTENDANCE AT BIRTH?

Skilled attendance refers to professionally trained health workers with the skills necessary to manage a normal delivery and diagnose or refer obstetric complications. This usually refers to a doctor, midwife or nurse. Skilled attendants must be able to manage a normal labour and delivery, recognize complications early on and perform any essential interventions, start treatment, and supervise the referral of mother and baby to the next level of care if necessary. These professionals may practise in a health-care facility or at home. Their classification as skilled attendants refers to their training more than to the site of practice. Trained and untrained traditional birth attendants (TBAs) are not included in this category.

(WHO/UNFPA/UNICEF/WORLD BANK. *JOINT STATEMENT FOR REDUCING MATERNAL MORTALITY, 1999.*)

The role of antenatal care

Antenatal visits present an opportunity to address the psychosocial and medical needs of pregnant women while acknowledging the context in which they live. These periodic health exams allow women to make contact with the health-care system. Health promotion messages can be individualized during this time, and women can be screened for potential risk factors. Antenatal visits can provide essential services for all pregnant women, such as tetanus toxoid immunization, nutrition education and the distribution of iron and folic acid tablets. WHO recommends four antenatal visits. However, it is the *quality* of the visits rather than the *number* of visits that is of primary concern.

Antenatal care is also an opportunity to offer voluntary counselling and testing for syphilis and HIV without a separate clinic visit. Pregnant women known to be seropositive can be started on a regimen of drugs designed to minimize vertical transmission. Antenatal visits also offer an opportunity to identify HIV-negative women and provide them with the skills and knowledge to remain negative.

More recently, antenatal care has begun to offer Intermittent Preventative Treatment for malaria. This is important as malaria contributes to anaemia, a significant factor in maternal morbidity and mortality. The treatment usually consists of single dose chemoprophylaxis given to pregnant women at least once after quickening. This is combined with the provision of insecticide-treated bed nets to prevent malaria infection. Intermittent Preventative Treatment is a relatively new intervention, and has yet to be thoroughly evaluated.

Involving traditional birth attendants

While some small projects have had success in training traditional birth attendants (TBAs), evaluation results are more often mixed, showing no significant reduction in maternal morbidity or mortality. This is due, in part, to the lack of well-trained medical staff and functioning referral services to provide backup for the TBAs in the event of a life-threatening complication. Neither trained nor untrained traditional birth attendants have the skills to deal with life-threatening problems.

UNFPA's focus has changed to making *professional* care more accessible. Professionals are defined as physicians, midwives or nurses with midwifery skills.

More recent programmes have sought to

promote the role of TBAs as culturally sensitive liaisons between the health system and the community. Medical procedures and administration of medications should be performed by skilled health professionals. In contrast, many midwives and physicians have no training in belief systems, communication and community organizing.[1] This is where the TBA can be most effective.

For these reasons, UNFPA no longer promotes the training of traditional birth attendants to recognize or treat complications related to pregnancy. The Fund supports a role for TBAs to bridge the gap between communities and trained health providers. Traditional birth attendants can encourage women to use family planning and antenatal services and can emphasize the need for women to get EmOC at hospitals or other facilities should complications arise. UNFPA also provides clean delivery kits that can be used by midwives, family members or even TBAs in emergency situations to minimize the risk of infection.

Maternity waiting homes

Maternity waiting homes are residential facilities where women defined as "high risk" can await their delivery and be transferred to a nearby medical service shortly before delivery—or sooner, if complications arise. The goal is to minimize the delay in receiving care for an obstetric emergency by dramatically reducing the transit time.

Little quantitative research has been conducted to prove the efficacy of maternity waiting homes. A significant problem is determining which women are actually at high-risk. In some studies, women who are undergoing their first pregnancy have shown the greatest benefit from maternity waiting homes. Also, the majority of complications occur in women with no apparent risk factors. In addition, the four-week stay recommended is a barrier to use for many women, although it may allow some to get needed rest after delivery.

Some countries have now progressed from using medical definitions of "high risk pregnancy" toward a broader concept based on a combination of distance and socio-economic and medical risk factors. In any case, maternity waiting homes should not be a stand-alone intervention, but should link communities with the health system in a continuum of care.

1 Safe Motherhood Initiative; Skilled Care During Childbirth.

UNFPA's strategic response

UNFPA programming focuses on three major strategies to prevent maternal mortality and morbidity. These interventions are most effective when implemented as a total package.

- **Family planning**

A reduction in unwanted pregnancies will do a great deal to reduce maternal mortality by reducing unsafe abortion, allowing women to properly space pregnancies and avoid pregnancies at too young or too old an age. Reducing the sheer number of pregnancies also means fewer pregnancy-related deaths.

- **Skilled attendance at birth**

A skilled attendant is a professional midwife, nurse or doctor able to supervise normal deliveries, quickly recognise and manage complications and refer them appropriately.

- **Emergency obstetric care**

Access to facilities that can perform emergency interventions such as Caesarean sections, manual removal of placenta, blood transfusions, and administration of antibiotics is essential.

The interventions required to improve the availability, access, quality and use of maternal health services are now both understood and affordable. In many cases, improving access to services that will prevent maternal mortality can be integrated into efforts to improve the health system as a whole. The developing countries that have successfully reduced maternal deaths have done so through sustained improvements in the coverage and quality of their health services. This investment in the general health-care infrastructure will benefit not only pregnant women, but all people seeking care.

A human rights-based approach[2]

UNFPA takes a human rights-based approach to maternal mortality, both in the priority it assigns to the issue and in the design and implementation of maternal mortality policies and programmes. Since almost all maternal mortality is avoidable, human rights principles can be called upon to denounce its persistence and to promote an end to this injustice through universal access to skilled care during pregnancy and childbirth. Moreover, human rights principles, applied in a culturally sensitive manner, can be integrated into programmes at the clinical, facility management, and monitoring levels. For example, ways to encourage respectful treatment of patients at the facilities can be implemented. Mechanisms to elicit community perceptions and participation can be applied. At the policy level, human rights principles can inform dialogue and policymaking for health sector reform.

Family planning

Meeting the existing demand for family planning services alone would reduce pregnancies in developing countries by 20 per cent and maternal deaths and injuries by that much or more. The UNFPA strategy has been refined over the last 30 years to promote high-quality family planning services that respect individual choice. This means ensuring an adequate supply of a wide range of contraceptives and reproductive health supplies, including male and female condoms. While access to family planning will do little to reduce the maternal mortality ratio, it does a great deal to reduce the overall number of deaths related to pregnancy and unsafe abortion. Family planning has proven to be an extremely effective intervention, and is central to all UNFPA programmes.

[2] This section draws from Freedman, L. P. 2001. "Using Human Rights in Maternal Mortality Programs: From Analysis to Strategy." *International Journal of Gynecology and Obstetrics* 75: 51-60.

Skilled attendance at birth

Most obstetric complications occur at the time of labour and delivery. It takes a professional to swiftly recognise life-threatening complications and to intervene in time to save the mother's life. As noted before, previous efforts to promote skilled attendance at birth centred on the promotion of traditional birth attendants. A paradigm shift has taken place over the past decade to focus interventions on promoting an increase in *professional* attendance at delivery. It has been estimated that if 15 per cent of births are attended by doctors and 85 per cent of them are attended by midwives, then maternal mortality will be adequately reduced. This ratio is most effective in situations where midwives attend normal deliveries and are able to effectively refer the 15 per cent of deliveries that result in complications to physicians.

Skilled attendance at birth has been one of the most obvious common programming techniques in countries that have been successful in reducing maternal mortality. Improved access to trained midwives who are supported by the broader health-care system is critical. Adequate support to midwives includes regular and reliable access to medications and supplies, and the respect and authority to make referrals to a higher level of care.

In spite of overwhelming evidence that the use of doctors, midwives and nurses in deliveries is a crucial factor in reducing maternal mortality, only 58 per cent of all deliveries take place in the presence of a skilled attendant. There are many reasons for this. One is simply a shortage of professionally trained and skilled attendants. Another factor is a poor geographic distribution of attendants, with most professionals preferring to remain in urban areas. UNFPA is seeking to address this problem by promoting more training of professionals, and by seeking innovative ways to retain them in the regions of greatest need. This includes providing incentives like housing and distance learning programmes to midwives and doctors working in rural and semi-rural areas, and promoting rotation systems with a mix of public and private practice. Telemedicine—the use of new technologies to link clinics or diagnostic images to centrally-based professionals—offers considerable promise for reaching out to women in rural or hard-to-reach areas.

Basic EmOC Functions

Performed in a health centre without the need for an operating theatre

- IV/IM antibiotics
- IV/IM oxytoxics
- IV/IM anticonvulsants
- Manual removal of placenta
- Assisted vaginal delivery
- Removal of retained products

Comprehensive EmOC Functions

Requires an operating theatre and is usually performed in district hospitals

All six basic EmOC functions plus:

- Caesarean section
- Safe blood transfusion

For a facility to meet these standards, all six or eight functions must be performed regularly and assessed every three to six months.

Emergency obstetric care

Emergency obstetric care refers to a series of signal functions performed in health-care facilities that can prevent the death of a woman experiencing complications of pregnancy. EmOC is a response to complications and is not standard practice for all deliveries. The emergency obstetric care functions are often divided into two categories: basic EmOC, which can be provided at a health centre by a nurse, midwife or doctor, and comprehensive EmOC, which usually requires the facilities of a district hospital with an operating theatre. These functions are listed in the table below.

The **basic EmOC** functions mostly consist of administering medications by injection. These are usually antibiotics to treat an infection, anticonvulsants to treat a seizure, or oxytoxics to treat excessive bleeding. Basic EmOC also includes the ability to manually remove a placenta that has not been expelled naturally. A retained placenta can cause both excessive bleeding and infection, as can any portion of the placenta or other tissue that is retained in the uterus. Removal of retained products usually requires a minor surgical procedure like manual vacuum aspiration or a dilation and curettage procedure.

Comprehensive EmOC refers to the ability to perform a more complex surgical intervention, such as a Caesarean section to relieve obstructed labour. It also requires the ability to administer blood transfusions to treat life-threatening haemorrhages. This requires the ability to safely collect, screen and store blood.

Improving the availability of services is a crucial first step in accessing EmOC. In many cases only limited inputs are needed to expand existing health facilities and enable them to provide EmOC services. These interventions may include renovating an existing operating theatre or equipping a new one; repairing or purchasing surgical and sterilization equipment; converting unused facilities within hospitals or health centres; training doctors and nurses in life-saving interventions; or, improving health services management. This

MATERNAL MORTALITY WITHIN THE LARGER POLICY FRAMEWORK

Reproductive health is widely acknowledged to be integrally linked to poverty reduction and to the accomplishment of the Millennium Development Goals, which increasingly provide a framework and compass for international development efforts. Maternal mortality reduction is included in MDG reporting, and UNFPA works to ensure that reproductive health is included in the development of multi-agency processes such as Common Country Assessments, Poverty Reduction Strategy Papers and Development Assistance Frameworks, Sector-wide Approaches (SWAps) and in health sector reforms. In this way, UNFPA can influence the substantial investments channelled through these processes.

SWAps focus on the health sector as a whole, and not on specific projects. This has several advantages. First, countries that have had successes in reducing maternal mortality have done so through the development of the health sector overall. Establishing an efficient and effective health system will have a sustainable impact on improving maternal health. Maternal mortality levels are strong indicators of the functioning of the overall health system. Moreover, it is important to encourage woman-friendly programming in existing SWAps. UNFPA supports linking safe motherhood to SWAps and other policy dialogue processes at an early stage in order to give this urgent issue priority within broad health sector reforms.

includes ensuring adequate training and distribution of personnel and reliable access to equipment and supplies. It also means promoting monitoring and evaluation and continuing improvement in the quality of existing services, as well as ensuring that services are used by women and their families.

Monitoring progress with process indicators

Maternal mortality rates and ratios are difficult and expensive to obtain and are often inaccurate. In many poor countries with limited vital registration systems, tracking these numbers accurately is a nearly impossible task. Process indicators are easier to track and can be used to show changes in those activities or circumstances that are known to contribute to or prevent maternal death. These indicators have become an invaluable tool to monitor progress in programme implementation and effectiveness.

Useful process indicators for maternal mortality include the percentage of deliveries with skilled attendants, the number of facilities offering EmOC, their geographic distribution, the percentage of women with complications treated

MATERNAL MORTALITY OUTPUT AND OUTCOME INDICATORS

INDICATOR	MINIMUM ACCEPTABLE LEVEL
Amount of essential obstetric care (EOC)[3] : 1. **Basic** EOC facilities **Comprehensive** EOC facilities	For every **500,000 people**, there should be: **At least 4 basic** EOC facilities **At least 1 comprehensive** EOC facility
2. Geographical distribution of EOC facilities	Minimum level for amount of EOC services (see indicator above) is met in sub-national areas
3. Proportion of all births in basic and comprehensive EOC facilities	**At least 15% of all births** in the population take place in either basic or comprehensive EOC facilities
4. Met need for EOC: Proportion of women estimated to have complications who are treated in EOC facilities	**At least 100%** of women estimated to have obstetric complications are treated in EOC facilities.
5. Caesarean sections as a percentage of all births	Caesarean sections should account for **not less than 5% nor more than 15 %** of all births
6. Case fatality rate	The case fatality rate among women with obstetric complications in EOC facilities is **less than 1%**.

SOURCE: MAINE, D., ET AL. AUGUST 1997. *GUIDELINES FOR MONITORING THE AVAILABILITY AND USE OF OBSTETRIC SERVICES*. UNICEF/WHO/UNFPA, P 25.

[3] In this table, *Essential Obstetric Care* (EOC) refers to what is called Emergency Obstetric Care (EmOC) elsewhere in this document.

in EmOC facilities, the Caesarean-section rate and case fatality rates.

When taken together, these indicators offer a picture of the availability, quality and use of services. This is, in many ways, exactly the information that programmers need. *Impact indicators* such as maternal mortality rates and ratios remain a useful measurement—especially in making international comparisons. However, the practicality of process indicators has made them popular in recent years as a means of monitoring as they are both sensitive to change and easy to maintain in data collection systems.

The indicator selected to measure progress against the Millennium Development Goals is the proportion of births attended by a professionally trained and skilled attendant. Other common indicators used to monitor and evaluate safe motherhood include the percentage of pregnant women attending antenatal care at least once during their pregnancy and the percentage of women receiving postnatal care.

Careful monitoring is usually supplemented with more detailed investigations to identify the underlying causes of maternal mortality. Maternal death audits can begin by tracing the path of a woman who died in the health facility back to her starting point in labour. This supplements the records of the hospital with qualitative information on barriers to care and the many factors that influenced her death. By identifying factors that contribute to maternal death, interventions can be more easily targeted to address those factors that can be avoided. An attempt should also be made to identify women who died in the community, and similar audits should be performed at this level.

Caring for the newborn

When a newborn experiences complications, the course of the child's life can be forever changed by actions that take only minutes. Newborn care at delivery has a tremendous impact on the difference between neonatal mortality rates of developed and developing countries, one of the largest health disparities. Each year, four million newborns die before they reach one month of age and an equal number are stillborn. Ninety-eight per cent of these deaths occur in developing countries.

Ultimately, these deaths can be traced to whether those attending births have the skills and knowledge to handle neonatal emergencies and whether they are able to actually apply those skills. More and more, the training provided to midwives, nurses and doctors attending deliveries includes preparation for neonatal emergencies. UNFPA highly recommends that health workers receive the training and support to provide the best possible care for each and every child.

Maternal disability: the tragedy of obstetric fistula

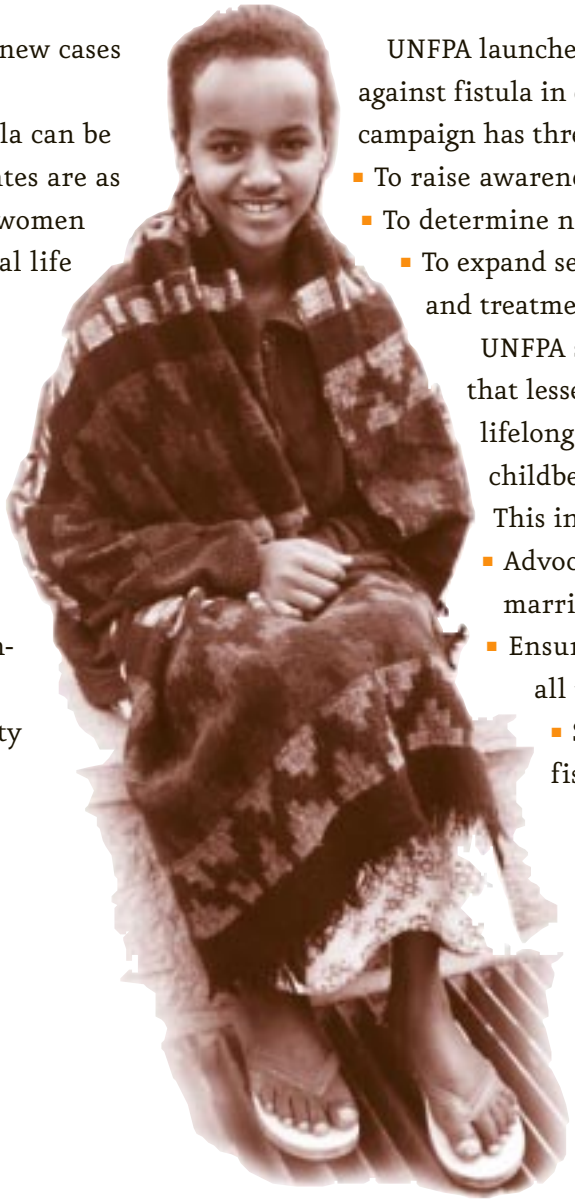
For years, the subject of maternal morbidity—the lasting injuries and illnesses that women suffer as a result of pregnancy—has been neglected. Yet, estimates show that for every woman who dies in pregnancy, 30 more are injured. The most severe of these injuries is obstetric fistula.

Obstetric fistula is a hole between the bladder and the vagina—or the rectum and the vagina—that causes a woman to be incontinent. The physical consequences of fistula are severe, and may include a constant foul odour, frequent infections, painful ulcerations of the genital area, infertility and, often, early mortality. The social consequences may be even worse, as these women are nearly always divorced, abandoned and often left to live in almost complete social isolation.

Obstetric fistula is widespread in Africa and parts of Asia: it affects more than two million girls and women worldwide; there are an

estimated 100,000 to 200,000 new cases each year.

Fortunately, obstetric fistula can be surgically repaired. Success rates are as high as 90 per cent and most women can return to a full and normal life after undergoing surgery. Unfortunately, only a few facilities offer corrective surgery, and even then the cost (averaging about $350) can be prohibitive. The lack of surgical facilities is largely due to a lack of awareness of the problem, the limited training that surgeons and nurses receive, and the unprofitability of the surgery.



UNFPA launched the campaign against fistula in early 2000. The campaign has three primary goals:

- To raise awareness;
- To determine needs;
- To expand services for prevention and treatment.

UNFPA supports a range of activities that lessen a woman's chance of lifelong disability as a result of childbearing.

This includes activities that:

- Advocate to raise the age of marriage and childbearing;
- Ensure access to EmOC for all pregnant women;
- Strengthen capacity for fistula repair.

UNFPA-supported interventions at the country and regional levels

The majority of UNFPA's EmOC activities occur at the regional and country levels. Country offices have been working hard to support maternal mortality reduction through a wide range of programmes. These efforts have been bolstered by UNFPA's regional Country Support Technical Teams (CSTs), all of whom have contributed to advocacy efforts on regional, national and global levels. While their collective work has been extremely valuable, it is impossible to highlight every programme. The following is a selection of some of the more outstanding programmes undertaken by UNFPA field offices since the last *Maternal Mortality Update*.

africa division

The most promising regional maternal mortality reduction project in Africa has been the collaboration between UNFPA and Columbia University's Averting Maternal Death and Disability programme. The project conducted needs assessments in eight sub-Sahran countries to accurately describe the EmOC services offered there. Using process indicators, UNFPA sought to build capacity and to increase the availability and use of EmOC. A companion booklet, in the back pocket of this publication, details the use of indicators to programme for results in several West African countries.
(The publication is also available at www.unfpa.org/publications.)

Needs Assessments

The data collection project began in October 2000 when UNFPA and the governments of **Cameroon**, **Côte d'Ivoire**, **Mauritania**, **Niger** and **Senegal** held a methodology workshop in Dakar, Senegal to promote the use of process indicators. After the workshop, a preparatory consultation was held in each country to clarify definitions of obstetrical complications and to validate data collection strategies. Specially trained paramedical personnel collected data from local, regional and national facilities under the supervision of experts from national research institutions, UNFPA offices and the Ministry of Health.

Dozens of health facilities were assessed. These facilities were selected from among public and private health centres, maternity homes expected to provide basic emergency obstetric care and district hospitals expected to provide comprehensive emergency obstetric care.

Through visits to every facility in **Mauritania**, **Niger and Senegal**, an exhaustive assessment of the situation in these three countries was achieved. In Cameroon, all facilities in five out of its ten provinces were assessed. In **Côte d'Ivoire**, a random sample of facilities was taken as there were too many facilities to assess. In all five countries, the results presented a nationwide picture of the availability, utilization, and quality of EmOC services.

This exercise is currently being replicated in **Gambia**, **Gabon** and **Guinea-Bissau**; similar needs assessments are under way in **Rwanda**, **Burundi**, **Zimbabwe** and **Algeria**. This staged approach most efficiently uses the experience of countries that have already participated in the exercise to streamline and improve the assessments to follow.

The data collection results from Cameroon, Côte d'Ivoire, Mauritania, Niger and Senegal were discussed at a workshop in Nouakchott, Mauritania. For each country, six indicators were produced, following the methodology described in the UNICEF/WHO/UNFPA guidelines issued in 1997, *Monitoring the Availability and Use of Obstetric Services*.

UNFPA/Niger has already successfully raised funds to implement interventions in five districts and has developed detailed project proposals. In the other countries, proposals for strengthening EmOC interventions have been completed and programming will begin shortly.

Training

UNFPA offices in **Angola**, **Nigeria**, **Uganda**, **Ethiopia**, **Sao Tome and Principe** and **Rwanda** have addressed maternal mortality reduction by funding obstetric first aid training for health

MOZAMBIQUE

SUPPORT TO EMERGENCY OBSTETRIC CARE IN SOFALA PROVINCE

Sofala province is home to nearly 1.5 million people. The region has faced civil war and natural disasters over the past decade that have left the health infrastructure badly damaged. In response, a project to increase the functioning, delivery and utilization of basic and comprehensive emergency obstetric services in Sofala province was developed.

During the first year of the project, three rural hospitals and Beira Central Hospital, in the capital of the province, received training for provision of basic and comprehensive EmOC. During this training period, 37 maternal and child health nurses, three surgery technicians and three medical doctors were trained in basic EmOC during a one-month practical training course. In addition, one medical doctor was also trained in surgical skills for obstetric emergencies in a three-month practical training. Middle-level surgery technicians often handle surgical and obstetric emergencies and play a crucial role in the provision of comprehensive EmOC in rural hospitals.

The in-service training programme was held at Beira Central Hospital. This allowed the hospital to network with the peripheral maternities, and train them in the use of process indicators. A list of essential drugs, medical equipment and supplies was made based on the results of a needs assessment for emergency obstetric care. Medications and supplies were purchased and distributed to the selected maternities and rural hospitals.

A pilot form for collecting information on EmOC process indicators from the maternities was created and is currently being tested. This will facilitate the inclusion of this data in the national health information systems. In addition, a provincial Committee for Maternal Mortality Audits was established with the participation of the rural hospital staff to analyse preventable factors contributing to each maternal death and determine ways to improve the management of obstetric emergencies.

The experience of Sofala project is being expanded to other provinces and will eventually cover the entire country. A manual for competency-based training in emergency obstetric has been developed for national use, and the Ministry of Health has developed a National Strategy for Maternal Mortality Reduction and an Operational Plan.

practitioners. **Ethiopia** also conducted a training-of-trainers to further disseminate these skills. **Niger** is currently training midwives to effectively manage complicated labour, including the use of a partogram. To standardize training and EmOC services, Niger is also preparing an EmOC training module for nurses and doctors.

In **Kenya**, training of health service providers focused on record keeping and data collection for monitoring at the service provision level in nine districts. Training of midwives and nurses will be conducted once a training protocol is ratified by the Ministry of Health.

Sierra Leone has conducted orientation workshops for midwives and doctors in emergency and life-saving skills and has provided two-day refresher workshops for aides in safe motherhood in six districts. In spite of this, there is still a lack of personnel. The Ministry of Health has responded by expanding the duties of nurses. Special training programmes were held to give nurses—four men and five women—the skills to

HIGHLIGHTED PROJECT: ERITREA

UNFPA/Eritrea undertook a baseline study of the national reproductive health situation in 2001. This included an analysis of existing data sources and the collection of further data on specific EmOC indicators. Based on the results of this rapid assessment, a national reproductive and sexual health policy was created in collaboration with USAID and UNICEF, which included a new programme for commodity security.

Activities continued with specialized training of nurses, midwives and physicians in obstetric first aid and comprehensive EmOC.

The project also focused on the Southern Red Sea Zone, which is a long and narrow strip of land isolated from the rest of the country. A comprehensive EmOC facility, the Assab Maternity Centre, was constructed and equipped during 2001-2002 to ensure that EmOC services would be available to women living in this remote region. Ambulances were procured by UNFPA to assist with emergency transport as well as monthly community outreach activities.

UNFPA/Eritrea placed considerable emphasis on safe motherhood by allocating a full 70 per cent of reproductive health sub-programme funds to the issue. This amount is well above the average country office allocation, which brings considerable visibility to the issue. This investment also attracted other donor support, and UNFPA is now working with UNICEF, the UK's Department for International Development and USAID on further activities.

administer anaesthesia. Nurses are now considered a part of the core team to be set up in district hospitals as a programming step for maternal mortality reduction.

Zimbabwe focused provider training on post-abortion care, giving new skills to 14 doctors. **Mozambique** began yearly refresher training for staff to ensure that they are prepared to deal with obstetric emergencies.

Infrastructure Development

Niger, **Uganda**, **Rwanda** and **Angola** have procured ambulances and radio communications to improve transport. They have also upgraded existing facilities and equipment and have provided supplies. **Niger** has focused its referral system around a facility in Loga; 64 peripheral facilities refer patients there. In addition, Niger has partnered with CARE and the Population Council in Mali to install a community-based health system. Rwanda has involved 14 hospitals and 116 health centres to expand the availability of EmOC services.

Ethiopia assessed its safe motherhood policies and strategies and discovered that data collection on EmOC indicators had not been conducted since 1996; data will be updated. In addition, Ethiopia has worked to upgrade facilities and increase the flow of equipment and supplies; they have also constructed a commodities warehouse to securely store contraceptives, equipment and other supplies.

UNFPA/**Burundi** collaborated with the national university to ameliorate medical training programmes and assist with the procurement of equipment and supplies. Ultimately, the project built six rural hospitals capable of providing EmOC to the country.

UNFPA/**Kenya** conducted needs assessments of facilities in nine districts to determine ways to improve access to EmOC. Based on their findings, the country office helped the Ministry of Health

procure EmOC supplies (including kits to perform manual vacuum aspiration, Caesarean sections, clean deliveries, and neonatal resuscitation) both locally and abroad. In addition, Norplant® kits were distributed, and the Fund procured radios for health posts.

Policy/Advocacy

In May 2001, UNFPA collaborated with UNICEF and WHO to organize the forum "Vision 2010," which highlighted maternal and neonatal mortality reduction in Central and West Africa. The goals of the forum were to raise awareness, reinforce political commitment, and increase the technical knowledge of decision and policy makers. First Ladies from **Ghana**, **Guinea**, **Burkina Faso**, **Nigeria**, **Senegal**, **Benin** and **Gabon**, and participants from 14 other countries in West and Central Africa attended. UNFPA's deputy executive director participated and addressed the plenary at the opening session.

The event culminated in the drafting of The Bamako Declaration, which expresses the commitment of key players to accelerate maternal and neonatal mortality reduction activities by the year 2010. The document promotes maternal mortality as a human rights issue and focuses on the importance of policy and health system reforms as well as strong political commitment. The Government of Mali later presented the declaration at the Pan African Conference in Cairo.

In **Kenya**, UNFPA collaborated with the Ministry of Health to create EmOC guidelines and protocols. They include specific provisions that allow the administration of anaesthesia and Caesarean section operations to be performed by non-physicians when a physician is unavailable. This helped to address staffing problems that made EmOC difficult to obtain. The project was developed based upon the results of a baseline needs assessment conducted in 2000 with UNFPA assistance. **Zimbabwe** also carried out an assessment of the quality of existing EmOC services.

Liberia worked to develop a national safe motherhood policy using the results of a needs assessment conducted in 2000. Data is now collected on a monthly basis and routine monitoring at the service level has been initiated. **Niger** has also been successful in integrating maternal mortality reduction into the national health plan. In 2001, the country conducted an evaluation of its EmOC intervention strategy.

In **Sierra Leone**, routine monitoring has begun using maternal mortality audits. The reproductive health division of the Ministry of Health and the district hospital health management teams carry out supportive supervision to assess quality of care in hospitals and primary health-care units in project and non-project districts. The country has also begun a programme to reduce the prevalence of obstetric fistula by offering repairs at one of its hospitals.

Nigeria focused a great deal of energy and funding on EmOC. Basic EmOC equipment was distributed to 504 primary health-care facilities, and 50 facilities were upgraded in 12 states. Pre-packed supply kits for performing Caesarean sections were distributed. Nigeria also worked to develop a post-operative reimbursement policy to help poor women receive surgery. The Ministry of Health hired additional anaesthesiologists and provided for overtime pay for doctors and nurses, increasing the availability of 24-hour EmOC coverage. In some cases, on-site accommodations for medical providers were created to further enhance EmOC availability.

Mozambique worked to improve the referral system from rural facilities to a higher level of care by distributing radios and creating a clear protocol on the use of ambulance services.

Community Mobilization

Botswana has focused most of their MMR programming on HIV prevention, emphasizing community mobilization.

Sierra Leone has trained "Blue Flag" Volunteers and health promoters to provide safe motherhood and contraception education in six camps for internally displaced persons and other distressed communities.

In **Sao Tome and Principe**, UNFPA is striving to improve EmOC coverage so that each district will have at least one EmOC centre. At present, only one hospital in the country is offering comprehensive EmOC.

latin america and the caribbean division

UNFPA programming in Latin America and the Caribbean was exceptionally well coordinated at the regional level. Several international conferences were held to develop a region-wide strategy, while individual countries worked to promote the reduction of maternal mortality through a variety of programmes.

HIGHLIGHTED PROJECT:
NICARAGUA—AMDD/UNFPA

In Nicaragua, a needs assessment evaluated 138 existing public and private health-care facilities that offer EmOC. Both qualitative and quantitative methods were used to help identify the greatest needs with respect to treating obstetric complications.

A team of physicians and nurses, in collaboration with health district personnel, investigated 13 hospitals, 83 health centres, 20 private clinics and 12 clinics run by NGOs. They conducted interviews with directors and personnel of EmOC health units, assessed hospital and district data, and directly observed the facilities. Special evaluation and assessment tools were developed, including ones that examined the "care route" of a patient with an obstetrical emergency and the conditions related to her death (such as frequency of medical monitoring, lack of drugs and laboratory tests ordered, and time elapsed between medical orders and medication).

The study identified the regions with the highest rates of maternal death: Jinotega and Managua. Throughout the country, almost half (43.8 per cent) of deaths occurred on weekends, indicating the need to review the distribution and availability of medical staff. Most of these maternal deaths were the result of haemorrhage, which is likely to be related to the fact that many medical personnel lack training in manual removal of the placenta. It was also found that inadequate laboratory facilities limit the ability to analyse and administer donor blood.

In many cases the quality of care and services available at the facilities did not meet the established national standards. Insufficient supplies of medications, particularly antibiotics and anti-hypertensives, made treating obstetric complications difficult. Fewer than half the personnel available to treat emergencies had received specific EmOC training. Insufficient telephone and radio communication and a limited number of ambulances impeded effective referral and transfer of patients with obstetric emergencies.

In spite of this, it was shown that the community and community health workers generally viewed health services in a positive light. Most had considerable knowledge of the risks and danger signs in pregnancy and delivery, though many still did not seek care because of the lack of transportation, long distances, lack of money, opposition from husbands or partners, and the need to care for other children.

All of this valuable information was used to develop a targeted and informed project plan. In the first stage, the project will strengthen hospitals and health centres in regions with a high maternal mortality rate. Then, smaller health centres will be supported and expanded to provide basic EmOC.

Training

In Peru, training in EmOC was addressed as part of a broader Quality of Care in Sexual and Reproductive Health project implemented by the Ministry of Health. In **Ecuador**, provider training in EmOC was offered within larger essential obstetric care programmes with the express purpose of improving 24-hour availability of care. The training was conducted in collaboration with the Pan American Health Organization (PAHO) and WHO. **El Salvador**, **Bolivia** and **Brazil** also included provider training in their programmes, focusing attention on both physicians and midwives.

Infrastructure Development

UNFPA worked with Family Care International (FCI) to bring EmOC and Safe Motherhood to the attention of programme planners, decision makers and the media in **Brazil**, **Bolivia**, **Colombia**, **Ecuador**, **Paraguay** and **Peru**. The project, entitled Safe Motherhood at Ten: Ensuring Access to Information and Resources in Latin America, began by improving access to printed resource materials and technical assistance in understanding and applying the safe motherhood action message at the national and local levels. These materials are considered to be a core resource package for safe motherhood and include a global safe motherhood brochure, policy card, technical and general fact sheets, and a presentation package. In each project country, the presentation package was adapted to include national statistics, safe motherhood policies and programmes, and recommendations for national and district-level action.

The materials developed in the core package are useful for a range of audiences, and can stimulate local partners' interest in creating specific local resources for national programming and policy-making.

The project provided the impetus for the National Task Force on Maternal Mortality Reduction to work collaboratively to operationalize the reduction in maternal mortality plan. National Safe Motherhood Inter-Agency Group partners were essential in making this happen. Sustained communication stimulated the sharing of national advocacy strategies among countries, especially when Ministry of Health involvement was prominent.

Haiti used country core funds to promote access to EmOC. There are now 15 facilities available in the country offering EmOC.

Policy/Advocacy

UNFPA initiated the formation of the Inter-agency Task Force for Maternal Mortality Reduction in Latin America by joining forces with the Pan-American Health Organization, UNICEF, the InterAmerican Development Bank, World Bank and USAID. The coalition works to increase policy makers' and managers' knowledge of effective strategies to reduce maternal morbidity and mortality.

The task force operates on three levels: regional (based in Washington), subregional (Latin America and the Caribbean) and local (country level). EmOC was determined to be one of five thematic areas of focus for the task force. The other areas are policy/legislative issues, financing, gender equity, and skilled attendance at birth.

In 2000–2001 subregional meetings were held in **Nicaragua** and **Bolivia** to educate policy makers and managers and to coordinate efforts throughout the region. The workshops resulted in an Inter-agency Strategy Statement entitled *Latin America and Caribbean Regional Strategy for the Reduction of Maternal Mortality for the Next Decade 2002–2010*. The report will serve both as a techni-

HIGHLIGHTED PROJECT: PANAMA

STRENGTHENING OF THE FAMILY AND IMPROVING THE REPRODUCTIVE HEALTH OF THE NGOBE PEOPLE

Although Panama has one of the lowest maternal mortality rates in Central America, there remain pockets in which access to EmOC is extremely limited. This pilot reproductive health project works in 35 communities within the indigenous Comarca Ngobe Buglé region to strengthen the primary health-care system and increase access to EmOC. The system has very few human and financial resources and lacks proper health facilities. There are no hospitals in the Ngobe Health Region, making access to EmOC extremely difficult. The closest hospital is in another health region, far from most Ngobe communities. UNFPA has assisted this hospital to provide EmOC to Ngobe women. Ideally, an EmOC-equipped hospital will be built in the Comarca region.

The existing health posts in the area were bolstered by the distribution of basic medical and office equipment. The largest, best-staffed and equipped health centre, Hato Chamí, was selected to be expanded into a referral maternity centre. UNFPA is currently collaborating with Medicus Mundi of Spain and the Ministry of Health to make this a reality for the Ngobe region.

During 2001, the project worked with the health director of the region and with ASMUNG, the Ngobe Women's Association, to conduct reproductive health training for the region's limited staff (health assistants, promoters and some nurses). In collaboration with the UNFPA Country Support Team, the project carried out important EmOC-related training activities, covering obstetric norms and standards as they apply to the region and introducing health personnel to the principles of safe motherhood programmes, prompt recognition of emergencies, and proper response and referral.

Thirty-two community midwives were selected and will complete training in 2002. The midwives will work with strong links to the Comarca health system's supervision and referral services.

Transportation to and from the hospital and a radio communication system are still lacking, although the Ministry of Health had promised to install a radio communication system within the Comarca region.

In addition to training health personnel, 49 community "multipliers" (17 men and 32 women) have been trained in reproductive and sexual health. Their main role is to provide the families of the 32 communities with informal education about reproductive health, gender equity, and the prevention of family violence. The multipliers were chosen on the basis of their leadership and respectability within the communities.

cal and an advocacy tool, taking into account common approaches to maternal mortality reduction. Countries with high maternal mortality ratios approved the report, though reaching a consensus for the entire Latin American and Caribbean region required considerable negotiation.

A 12-month advocacy project in **Mexico**, **Bolivia**, **Colombia**, **Ecuador**, and **Haiti** was conducted in collaboration with Family Care International's Safe Motherhood at Ten project. In Colombia, a local NGO, Profamilia, used a workshop entitled Improving Quality of Care to identify weaknesses in their service delivery and client follow-up systems and to generate strategies for action. In **Ecuador**, the workshops helped launch a curriculum review process at the Central University of Ecuador School of Obstetricians.

UNFPA advocated the inclusion of EmOC policy

within the national safe motherhood policy/strategy in both the **Dominican Republic** and in **Peru**. This included monitoring activities at the service level and improving access to 24-hour coverage of EmOC services. This was accomplished through facility upgrades, improving the flow of equipment and supplies, and the training of personnel.

Nicaragua, as part of a joint UNFPA/AMDD project has made great strides in advocacy. The country completed a needs assessment of 128 health-care facilities to determine the state of EmOC services available. This was followed by a qualitative assessment to determine barriers to care. An action plan and project document were created and are waiting for ratification by the Ministry of Health. Findings from these needs assessments, and the assessments done in other Latin American and Caribbean countries will be published in the *International Journal of Obstetrics and Gynecology*.

Community Mobilization

Ecuador emphasized community activities on the rights-based approach. Community-focused activities helped to raise local women's awareness about their right to quality health care and to obstetric care in particular.

asia pacific division

Maternal mortality reduction efforts in Asia span a wide range of interventions that reflect the diversity of the region. Projects range from promoting basic maternity care to sophisticated monitoring and evaluation programmes and improving the blood supply.

Training

Pakistan and **Afghanistan** made considerable investment in the training of midwives to improve access to skilled attendance at birth. UNFPA worked with the Ministry of Health in each country on issues of safe motherhood and EmOC.

Indonesia integrated training of nurses, midwives and doctors into the essential reproductive health trainings for health personnel. This was undertaken based on the results of a needs assessment. The **Lao People's Democratic Republic** also integrated an EmOC component into the esential reproductive health training programme for providers.

As a follow-up to national guidelines for the treatment of obstetric emergencies, UNFPA in **China** sponsored training for obstetricians, nurses and other service providers at the national, county and township levels. In **Thailand**, programme managers created the "Provincial Standard of Care Manual" to be used by providers, which was introduced in a training workshop.

In Phnom Penh, **Cambodia**, UNFPA sponsored a four-month training course for midwives from three different provinces. In **Nepal**, auxiliary nurse midwives attended basic and refresher courses on obstetric emergencies and were given safe delivery kits to aid them in their work. In Thailand, health workers were given foetal monitors, cord care kits, and child development kits.

In **India**, training for medical officers and staff nurses in basic EmOC was conducted in seven UNFPA-supported districts and three UNICEF-supported districts in Rajasthan. A total of 31 teams of medical officers and staff nurses were trained. This was followed up with an evaluation workshop to help make future workshops more effective. Managers were given training to improve the quality of data collection, including a pilot workshop to install and use an improved management information system. A needs assessment was also undertaken to develop a strategy and training module for medical officers and staff nurses in basic EmOC.

Infrastructure Development

UNFPA involvement in building infrastructure for EmOC delivery varies. In the **South Pacific**, support is focused primarily on the provision of equipment and supplies. UNFPA/**Cambodia** has also provided equipment for maternity hospitals as well as two ambulances and 20 radios to improve their referral system. UNFPA/**Indonesia** has invested $703,500 to facilitate safe blood supply for obstetric emergencies.

Data collection was also an important component in developing the infrastructure of the country EmOC programmes. **Indonesia** collected strong baseline data to allow for careful monitoring of progress and to determine areas most in need of intervention. Data on EmOC service indicators was collected by incorporating EmOC questions into the Baseline Survey for Essential Reproductive Health.

The State of Rajasthan in **India** conducted

needs assessments as a part of the AMDD programe. Maps were developed to identify institutions providing basic and comprehensive EmOC services, and a survey of these institutions was completed. Based on the results, an infrastructure improvement plan was developed and 63 health facilities underwent renovations and repairs to promote client and staff comfort and maintenance of asepsis.

Policy/Advocacy

In **Nepal**, the Reproductive Health Coordination Committee was supported to ensure coherence at the policy and operational levels.

Cambodia integrated EmOC into the national safe motherhood guidelines and protocol. This was made available as a pocket-sized reference for physicians and health centres.

In the **South Pacific**, UNFPA country offices and Country Technical Services Teams are advocating for a larger role for midwives. This would allow trained and skilled midwives to perform the life-saving procedures required by a basic EmOC facility. The Country Technical Services Team has been directly involved in integrating a life-saving skills element into existing midwifery curricula.

HIGHLIGHTED PROJECT: MAKING SAFE MOTHERHOOD A REALITY A COLLABORATION WITH THE AVERTING MATERNAL DEATH AND DISABILITY PROGRAMME IN INDIA: THE STATE OF RAJASTHAN

In Rajasthan, UNFPA worked within the larger Integrated Population & Development project to improve the access to and quality of EmOC in seven districts. Activities were initiated with a needs assessment and mapping of existing services.

Seventy-nine health-care facilities were identified for improvement. A mobile team of carpenters, plumbers, electricians and painters efficiently repaired and renovated facilities.

Basic EmOC trainings were conducted by sending 31 teams consisting of a medical officer and a staff nurse to the district hospital for two weeks. Trainees assisted with and attended complicated obstetric cases. Students reported that the training had given them the confidence to handle basic EmOC cases in their institutions and improved staff morale, which resulted in better management of emergency cases.

Empowerment initiatives focused on advocacy and community education, including elected members of local government. Workshops informed all government staff, including politicians and chief medical and health officers, about available services and pregnancy-related complications that require immediate medical attention.

In every district, a group of 30–45 resource people from the community was created. Community leaders decided to keep a list of all pregnant women and talk to their husbands and family members about danger signs. They will also take an active role in arranging transport and alerting the nearest health institutions about referrals. Village chiefs were given pocket cards with information about danger signs during pregnancy and post delivery and information about the nearest EmOC facility. After the training, one block leader publicly honoured people who had offered timely transport to women in an emergency or volunteered to donate blood.

In **China**, UNFPA has worked with the Ministry of Health to establish guidelines to be used by obstetricians and other service providers to handle obstetric emergencies.

In 2001, the Government of **Myanmar** drafted the National Reproductive Health Policy to show their strong commitment to reducing maternal mortality. The policy calls for increasing skilled attendance at birth, minimizing unsafe abortion and integrating reproductive health into the existing maternal care package. This will include technical guidelines for reproductive health policy implementation.

UNFPA also provided support for routine monitoring and evaluation activities in **Nepal** and **Indonesia**.

Community Mobilization

Indonesia has several innovative community mobilization projects. One focuses on alleviating transportation difficulties for women experiencing complications of pregnancy. UNFPA is providing mini-grants to support a community response to maternal emergencies in remote areas. Other programmes include the "Mother Friendly Movement" and "Suami Siaga."

Transportation remains problematic in the **South Pacific** as well. In many cases, UNFPA boats are used to transport women with obstetric emergencies to a higher level of care. Because this service is limited, the Fund is also working to educate the community about other services available and encourages community-sponsored transportation schemes.

Cambodia has a unique system of Health Centre Feedback Committees in six provinces. These committees are made up of village representatives and meet on a monthly basis to give feedback to local health centres. UNFPA used these meetings to provide community safe motherhood education. It also took advantage of village development committees to present information on safe motherhood to more than 26,000 women in 852 villages. The project also conducted training for trainers to provide community safe motherhood educators. Two hundred and forty people in six provinces received the training.

division of arab states and europe

The Division of Arab States and Europe participated in many projects to address the general reproductive health of the community. The Pan-Arab Project for Family Health provided ministries of health, welfare and maternal and child health organizations, and research and policy centres in the region with reliable information to help formulate, implement, monitor and evaluate reproductive health policies and programmes in a cost-effective manner. This included the creation of national and regional reproductive health data banks as well as seminars and workshops designed to enhance the capacity to plan, coordinate and manage comprehensive integrated reproductive health surveys. Guidance manuals and instruction materials for training policy makers and programme managers were also created.

The recent changes in the governments of Central Asia have resulted in a worrisome deterioration in reproductive health in the countries of the former Soviet Union. Access to good nutrition and perinatal care has declined, with a corresponding increase in birth-related complications, stillbirths, and low birth-weight babies. UNFPA is working through the country offices to address these concerns.

Training

UNFPA offices in **Turkey** are preparing to improve EmOC training in the basic health curricula of medical and midwifery schools beginning in 2002. **Tunisia** and **Moldova** already discuss EmOC within the context of a broader reproductive and sexual health training for family doctors, nurses, medical assistants, ob/gyns, teachers and psychologists. The **Russian Federation** conducted reproductive health training for doctors in the northern Caucasus, including sessions on the diagnosis, treatment and prevention of sexually transmitted infections. **Syria** focused training activities on advanced technology in obstetric care for ob/gyns, and on training midwives and health visitors on reproductive health services. **Romania** provided reproductive and sexual health training for providers, though EmOC was not covered at length.

Infrastructure Development

In **Armenia**, UNFPA offices provided necessary medical equipment for EmOC as well as a car to help in transporting patients to district or central hospitals. UNFPA trained and supported an emergency team to staff the vehicle. The **Russian Federation** worked to procure the medications necessary for EmOC and to facilitate delivery of the drugs to emergency zones.

Policy/Advocacy

The Pan-Arabic Health Project worked in several Arab countries to encourage the social and educational development of Arab women, and worked with Islamic leaders to promote family planning and maternal health in a culturally appropriate way. This often included projects to promote girls' education and raise the age of marriage.

Community Mobilization

The **Armenia** office began a community mobilization component that focuses on birth preparedness, transportation and encouraging the community to demand access to EmOC.

In **Morocco**, **Tunisia**, **Sudan**, the **West Bank and Gaza**, **Jordan**, **Bahrain**, and the **United Arab Emirates** a community education project was implemented to educate young people

participating in the Girl Guides and Boy Scouts about reproductive health issues including family planning and prevention of sexually transmitted infections.

Monitoring and Evaluation

Monitoring and evaluation were key components of the programme. Health personnel from 10 maternity hospitals, including managers and clinicians, were trained to use the EmOC process indicators and a criterion-based audit methodology to evaluate maternal deaths and obstetric complications.

Training workshops covered the accurate and efficient performance of an audit and ways to track maternal complications. Operational research protocols were developed to assess EmOC services, including specific tools to monitor the administration of oxytoxics, management of uterine rupture, and other complications. The research protocol gathered information regarding provider attitudes and client perspectives on emergencies in childbirth. Following the conferences, a manual was developed to address maternal death audits and audits for near-misses. This will be used in all project regions, and supportive site visits will be conducted to regions that have difficulties, or do not complete data analysis. The workshops proved to be an excellent forum to share ideas and exchange information among regions.

In addition to educating staff about the importance and use of process indicators, the task of monitoring has been facilitated by the installation of computers with monitoring software and printers in 16 maternity hospitals. Ideally, this will lead to the creation of a national management information system for maternal and neonatal deaths and a central location for data analysis.

HIGHLIGHTED PROJECT:
MAKING SAFE MOTHERHOOD A REALITY: MOROCCO

The Making Safe Motherhood a Reality project in Morocco is part of a collaboration between UNFPA and Columbia University's Averting Maternal Death and Disability programme. It covers 13 provinces with a population of 5.5 million, which represents approximately 20 per cent of the total population of Morocco. The project focuses on:

- Increasing the availability of comprehensive EmOC in 10 maternity hospitals
- Increasing the availability of basic EmOC in 102 maternity homes
- Instituting comprehensive EmOC in five rural hospitals

Programming began by increasing the number of practitioners able to provide EmOC services. This required updating and revising training manuals, reaching consensus on the treatment of obstetric emergencies and training 150 ob/gyn specialists, general practitioners and midwives. Some were trained to perform ultrasounds. In addition, 18 technicians were trained to collect and administer blood from donors.

As a result of these efforts, six new comprehensive EmOC facilities are now functioning. In three instances, the community itself contributed funds and furniture for the improvement of facilities. The remaining funds have been contributed by health sector reform projects funded by the World Bank.

humanitarian response unit

Angola, Burundi, the Democratic Republic of the Congo, Eritrea, Guinea, Indonesia, the Democratic People's Republic of Korea, Occupied Palestinian Territories, Peru, Sierra Leone, Somalia, Sudan and Tajikistan used Humanitarian Response Unit (HRU) funds for maternal mortality reduction projects.

Needs Assessments

In **Burundi**, UNFPA carried out an assessment of reproductive health needs in three provinces. In **Somalia**, project funds were used to collect and analyse gender and reproductive health data. UNFPA/**Peru** supported a reproductive health needs assessment focusing on obstetric care and the immediate health needs of expectant mothers following the earthquake. In **Guinea**, a comprehensive survey on the reproductive health needs of the displaced population was undertaken and results were disseminated widely to sensitize national authorities and development agencies to the plight of the displaced.

Training

UNFPA supported the training of health-care providers on reproductive health and on essential obstetrics skills training in **Angola**. In **Somalia**, UNFPA supported a training session on the collection, compilation and analysis of reproductive health and gender-related data. In **Tajikistan**, medical personnel in a number of selected primary health-care facilities were trained on reproductive health and contraceptives. In **Eritrea**, a programme has been developed to train 50 medical staff—including medical officers and technicians—in reproductive health; a separate programme has been created for outreach workers. In **Indonesia**, community-based counsellors were trained to counsel internally displaced women. In **Angola**, a manual and a training programme on safe motherhood practices, family planning, STI/AIDS counselling, health education and adolescent reproductive and sexual health was developed in cooperation with the Ministry of Health.

Infrastructure Development

In the **Occupied Palestinian Territories**, HRU funds supported the development of a logistics system for the Ministry of Health. Plans are under way for similar activities in **Sierra Leone**. In **Sudan**, a project officer has been recruited to develop implementation modalities, recruit and liaise with partners, and carry out the planned activities. With the support of UNFPA, a reproductive health referral system has been developed and put into place by a local NGO that focuses on youth.

Policy/Advocacy

Most of the countries supported by HRU have carried out advocacy efforts to promote EmOC and reproductive health issues, but the most comprehensive activity took place in **Angola**. The advocacy initiatives there consisted of a range of activities to promote positive and responsible behaviour on reproductive health issues and improve access to health services. Over 40 journalists were trained to help spread the reproductive health message to the general population. As part of this set of activities, reproductive health-related information and advice were broadcast in

THE MINIMUM INITIAL SERVICES PACKAGE OBJECTIVES

IDENTIFY organization(s) and individual(s) to facilitate the coordination and implementation of the Minimum Initial Services Package;

PREVENT and manage the consequences of sexual violence;

REDUCE HIV transmission by enforcing respect for universal precautions against HIV/AIDS and guaranteeing the availability of free condoms;

PREVENT excess neonatal and maternal morbidity and mortality by: providing clean delivery kits for use by mothers or birth attendants to promote clean home deliveries; providing midwife delivery kits to facilitate clean and safe deliveries at the health facility and initiating the establishment of a referral system to manage obstetric emergencies;

PLAN for the provision of comprehensive reproductive health services, integrated into primary health care, as the situation permits.

Portuguese and in local languages. A large number of wind-up radios with solar panels were distributed encourage listening. In **Eritrea**, funds were used to assist the Ministry of Health to produce behaviour change communications, advocacy and training materials.

Procurement (Reproductive Health Commodities and Medical Equipment)

Nearly every country assisted by this project is facing an emergency. A considerable portion of the total funds were used to procure and distribute basic reproductive health kits, drugs, and medical equipment for obstetric care services and maternity units. Some of the funds were also used to procure or develop counselling kits, to rehabilitate hospitals and health units damaged by natural disasters or war, and to procure office furniture and supplies for health units and hospitals. Countries that used the funds in this way include, **Angola**, **Burundi**, **Eritrea**, **Democratic Republic of the Congo**, **Indonesia**, **Democratic People's Republic of Korea**, **Occupied Palestinian Territories**, **Peru**, **Sierra Leone** and **Tajikistan**.

In addition, UNFPA prepared a Minimum Initial Service Package for emergencies. The health kits contain materials for universal precautions for infection control, equipment, supplies and drugs for deliveries at health centres, obstetric emergencies and post-rape management. UNFPA has supplied these kits in **Liberia**, **Uganda** and in many other countries free of charge. Kits are also available at low cost to any health ministry.

Funds & Beneficiaries

UNFPA allocated a total of $4,144,000 to support the humanitarian activities described above. Some UNFPA field offices have also contributed funds and raised additional money to complement activities begun by UNFPA. The HRU estimates that nearly three million people were served by their activities.

Evaluation

A swift response to emergency situations remains a challenge. It often entails overcoming difficulties with security, inadequate staffing in the

field, lack of experience or desire by the host governments to cooperate, and delays in the supply and delivery of reproductive and other health commodities resulting from poor logistical support on the ground.

Fortunately, all countries with HRU activities have reported that advocacy efforts were greatly enhanced by UNFPA assistance. Through the relentless efforts of the UNFPA country offices, service delivery and the quality of services improved greatly. Through UNFPA's efforts, local partners increased their commitment to reproductive health-related issues and mobilized their own resources. The target users are now more aware of services and have made an effort to demand reproductive health services.

emergency obstetric care
CHECKLIST FOR PLANNERS

UNFPA's three-pronged strategy to reducing maternal mortality includes:

- Family planning to ensure that every birth is wanted
- Skilled care by a health professional with midwifery skills for every pregnant woman during pregnancy and childbirth
- Emergency Obstetric Care (EmOC) to ensure timely access to care for women experiencing complications.

This checklist focuses on EmOC specifically.

Why Emergency Obstetric Care matters:

Maternal mortality claims 514,000 women's lives each year. Nearly all these lives could be saved if affordable, good-quality obstetric care were available 24 hours a day, 7 days a week.

Most of the deaths are caused by haemorrhage, obstructed labour, infection (sepsis), unsafe abortion and eclampsia (pregnancy-induced hypertension). Indirect causes like malaria, HIV and anaemia also contribute to maternal deaths.

For every woman who dies, an estimated 15 to 30 women suffer from chronic illnesses or injuries as a result of their pregnancies. Obstetric fistula is a serious and isolating injury that would be significantly prevented through EmOC.

About fifteen per cent of all pregnancies will result in complications. Most complications occur randomly across all pregnancies, both high- and low-risk. They cannot be accurately predicted and most often cannot be prevented, but they *can* be treated.

Standards for basic and comprehensive EmOC *

Basic EmOC Functions Performed in a health centre without the need for an operating theatre	Comprehensive EmOC Functions Requires an operating theatre and is usually performed in district hospitals
■ IV/IM antibiotics ■ IV/IM oxytoxics ■ IV/IM anticonvulsants ■ Manual removal of placenta ■ Assisted vaginal delivery ■ Removal of retained products	All six Basic EmOC functions plus: ■ Caesarean section ■ Blood transfusion

* For a facility to meet these standards, all six or eight functions must be performed regularly and assessed every three to six months.

It is recommended that for every 500,000 people there should be at least four facilities offering Basic EmOC and one facility offering Comprehensive EmOC (appropriately distributed).

Policies	Yes/No	Action Points/Notes
Are national policies in place to promote safe motherhood in general and EmOC, in particular?		
Do policies explicitly mention the rights of patients?		
Who is accountable for monitoring and evaluation at the country level?		
Who is accountable for monitoring and evaluation at the regional level?		
Is EmOC included in : ▪ Standard definitions and official discussions of maternal care and reproductive health?		
▪ The basic/essential health care package?		
Is EmOC addressed in multi-agency processes such as: ▪ Sector-wide approaches?		
▪ Poverty Reduction Strategy Papers and Support Credits frameworks?		
▪ Common Country Assessments and Development Assistance Frameworks?		
▪ Millennium Development Goals reporting?		

Resource Mobilization & Donor Coordination	Action Points/Notes
What maternal health activities are funded?	
How much government funding is allocated to EmOC activities?	
Are there any SWAps in place or currently being negotiated for the health sector?	
Are additional private (NGOs, philanthropic organizations or the academic sector) or public funding sources available?	
Are need-based subsidies available for EmOC when complications arise?	
Are cost recovery systems in place?	

Availability and Quality of EmOC	Yes/No	Action Points/Notes
Has a needs assessment of obstetric services been done?		
▪ If so, by whom? When?		
▪ Does this include the use of EmOC process indicators?		
▪ Does it include qualitative and quantitative data?		
▪ Does it cover public and private services?		
Are the basic and comprehensive EmOC facilities adequate in terms of geographic distribution and numbers (4 basic and 1 comprehensive per 500,000 people)?		
When were these services last mapped?		
Are these facilities adequately staffed to perform EmOC functions?		

Obstetric Fistula	Action Points/Notes
What is the estimated prevalence of obstetric fistula?	
What is the estimated backlog of patients awaiting repair?	
Are activities in place for : • Prevention?	
• Repair?	
• Rehabilitation?	
If repairs of obstetric fistula are available, how many are performed each year?	
What is the average cost?	

Human Resources	Yes/No	Action Points/Notes
Were human resources country-wide, and for each region/district, recently assessed for Obstetricians/gynecologists		
Anaesthesiologists/nurse anaesthesiologists		
Surgeons/urologists		
Midwives/nurses		
General practitioners with midwifery skills		
Social workers		
Ancillary staff/community health workers		
Does the country have a human resources development plan for the health sector?		
Is there a plan for placement of health professionals in underserved areas?		
Is training competency based?		
How is competency assessed?		
How are clinical protocols and procedures implemented?		

These three delays contribute to many maternal deaths:

- Delay in deciding to seek care
- Delay in reaching appropriate care
- Delay in receiving care at the health facility

For Each EmOC Facility

Facility Renovation & Maintenance	Yes/No	Action Points/Notes
Is the physical building well structured and well maintained?		
If no, what renovation (for example, painting or restructuring for privacy, electrical systems, running water and sanitation, ventilation) is needed before services are offered?		
Is a room by room inspection performed regularly to ensure that equipment and supplies needed for EmOC is present and functioning?		
Are infection prevention measures in place?		
Is a management system in place to ensure that EmOC is available 24 hours a day?		
Is a list of standard maternal care equipment available?		
Does the facility equipment correspond to the above standards?		
• Is the equipment in working order?		
• What is the plan if equipment fails?		
• How is equipment repaired?		
• Where do spare parts come from?		
• Are supplies properly stored?		
Are communication systems in place between health hospitals and ambulances?		
Are manuals detailing standards of practice available and accessible for staff use?		
Are data collected in accordance with EmOC-related indicators?		
Are signal functions performed regularly and assessed every three to six months?		
Does the logbook document obstetric complications?		
Are clinical audits conducted?		
Who is accountable for monitoring and evaluation at the facility level?		

emergency obstetric care
CHECKLIST FOR PLANNERS

Mapping Community Needs and Resources	Yes/No	Action Points/Notes
Is EmOC affordable to poorer families?		
Is it supported by the community?		
Have community perspectives on health care been taken into account?		
Does the community know the danger signs in labour?		
Are newlyweds and young couples informed about family planning options and danger signs in labour?		
Are adequate transportation options to medical care facilities available?		
Are communication systems (radios/phones) available for referrals?		
Are community leaders interested in the subject of maternal mortality?		
In what ways could they be helpful in mobilizing and educating the community?		

This checklist has been prepared with generous support from the Averting Maternal Death and Disability programme at Columbia University, USA. It accompanies the Maternal Mortality Update, 2002, which can be viewed at www.unfpa.org/pubs.

220 East 42nd Street
New York, NY 10017 USA
http://www.unfpa.org/publications