

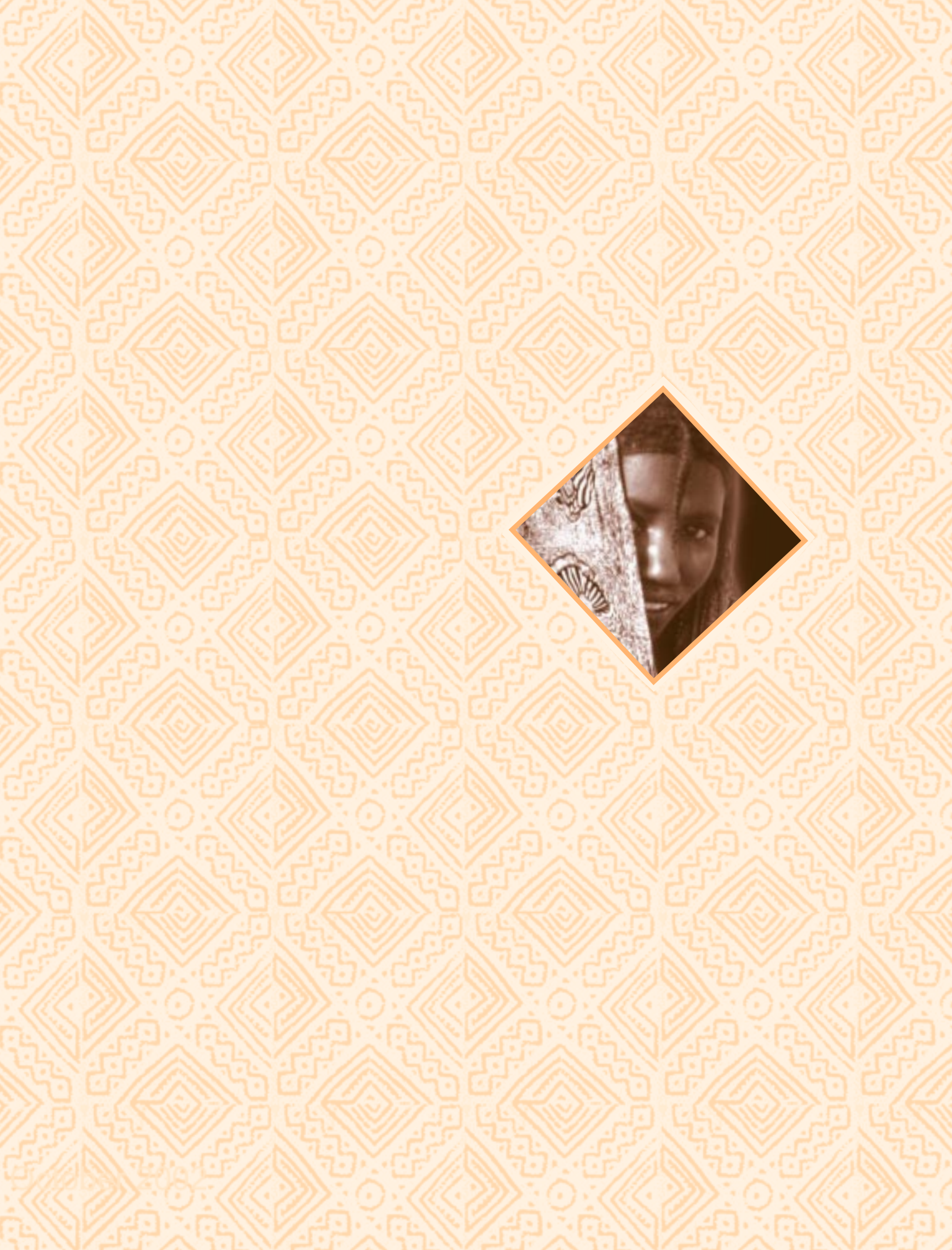
making **safe motherhood** a reality in **west africa**

using  
indicators  
to programme  
for results



**AMDD**  
Averting Maternal Death and Disability







## contents

- 2 Foreword
- 3 Introduction
- 5 Understanding the Methodology
- 7 Collecting and Understanding the Data
  - Cameroon
  - Côte d'Ivoire
  - Mauritania
  - Niger
  - Senegal
- 30 Mobilizing Support
- 31 Notes



### TABLES

- 6 Table 1: The Six Process Indicators
- 8 Table 2: West Africa Needs Assessment Findings at a Glance
- 11 Table 3: Findings from Five Provinces of Cameroon
- 23 Table 4: Obstetric Complications Treated in Niger
- 24 Table 5: Percentage of Caesarean Sections Performed in Niger

### FIGURES

- 12 Figure 1: Case Fatality Rate in Five Cameroon Provinces
- 15 Figure 2: Availability of Basic EmOC Facilities in Côte d'Ivoire
- 16 Figure 3: Availability of Comprehensive EmOC Facilities in Côte d'Ivoire
- 17 Figure 4: Case Fatality Rate in Côte d'Ivoire
- 27 Figure 5: Availability of EmOC Facilities in Senegal
- 28 Figure 6: Proportion of Births in all Facilities in Senegal
- 28 Figure 7: Treatment of Complications in all Facilities in Senegal
- 29 Figure 8: Case Fatality Rate in Facilities in Senegal



## foreword

For too long, maternal mortality reduction efforts stalled, in large part because the facts underlying the problem—and the best strategies to address it—were poorly understood. That is why we are so proud to present this report as the first outcome of a collaborative effort between UNFPA and the Governments of Cameroon, Côte d’Ivoire, Mauritania, Niger and Senegal. This report is a tangible reflection of our determination to address maternal mortality using a strategic and practical evidence-based approach in a region where data has been scarce, and where too many women have died.

This document represents the first careful assessment of obstetric services in these five countries using emergency obstetric care process indicators. Process indicators assess the critical emergency obstetric care functions that should be made available to all women experiencing complications of pregnancy. These indicators are sensitive, relatively easy to collect, and therefore suitable for monitoring progress in our collective fight against maternal mortality and morbidity. Most important, they can identify problems and suggest their amelioration within a fairly short period of time. This can help programme managers stay on track and save women’s lives.

In the countries surveyed, Ministries of Health collaborated with UNFPA and played leadership roles during national workshops aimed at sharing the assessments with other agencies involved in safe motherhood programmes, including WHO and UNICEF. This kind of collaboration and knowledge sharing is extremely useful for strengthening programmes. It not only ensures full ownership of the process but also spotlights those services that need urgent attention by all partners.

Malawi and Morocco, which earlier carried out similar initiatives, contributed to the process by sharing their experiences in collecting and using process indicators at the methodology workshop that launched this project. Since then, word of these studies has spread to other countries, and The Gambia, Gabon and Guinea-Bissau are replicating this exercise, with UNFPA support. This phased approach means we can continue to build on past efforts and to use our resources effectively as we move forward. Our hope is that many other partners will support the respective Governments in their efforts to reduce maternal mortality rates as part of our commitment to the Millennium Development Goals.

The Maternal Mortality Update 2002, which is published as a companion piece to this report, documents other efforts of UNFPA to make childbearing safer for women around the world. Together these documents underscore UNFPA’s larger commitment to fulfilling women’s right to life and reproductive health.



Mari Simonen  
Director  
Technical Support Division



Fama Hane-Ba  
Director  
Africa Division

## introduction

“Women [should] have ready access to essential obstetric care, well equipped and adequately staffed maternal health-care services, skilled attendance at delivery, emergency obstetric care, effective referral and transport to higher levels of care when necessary, postpartum care and family planning.”

—From ICPD+5 Key Actions, 1999

Sudden complications during pregnancy and childbirth are the main causes of maternal mortality and morbidity. Most complications cannot be predicted and therefore occur as emergencies. But they can be successfully treated provided women reach functioning obstetric services in time.

Since the International Conference on Population and Development (ICPD) was held in Cairo in 1994, there has been a growing understanding of the pathways to maternal death and disability and the approaches that best produce results. As a result, by the time of the five-year review of ICPD, emergency obstetric care had been incorporated as a key element of successful approaches to reduce maternal death and disability.<sup>1</sup> This is now part of the global consensus.

Yet providing quality emergency obstetric care (EmOC) and monitoring its use remained a challenge for many planners and programme managers, who had no tools with which to tell if women were able to get the care they needed in time to save their lives. In 1997, a way forward was presented in the *Guidelines for Monitoring the Availability and Use of Obstetric Services*, produced jointly by the United Nations Children’s Fund (UNICEF), the World Health Organization (WHO) and UNFPA. The Guidelines

are based on a methodology devised by teams working at Columbia University and UNICEF. A major contribution of the *Guidelines* was that it introduced a set of six process indicators that show whether:

- Enough obstetric services exist to serve the population;
- Services are within reach of the women who need them;
- The community is using these facilities;
- The quality of service provided is of acceptable standard.

These process indicators can be used *both* to assess needs as well as to monitor progress in programme interventions. They have now been used by almost 60 developing countries in every region of the world in projects addressing maternal mortality. As part of this worldwide movement, the Averting Maternal Death and Disability (AMDD) programme at Columbia University’s Joseph L. Mailman School of Public Health and UNFPA reached an \$8 million, five-year agreement in March 2000 to support projects that provide EmOC in Morocco, Mozambique, the state of Rajasthan in India and Nicaragua. EmOC needs assessments were conducted for each country; results for Cameroon, Mozambique, Senegal, India and

Nicaragua were presented in the *International Journal of Gynecology & Obstetrics* as part of a series of publications dedicated to UN process indicators.

Each partner uniquely contributes to this collaboration:

- UNFPA’s policy and strategies to reduce maternal death include: family planning to avoid unwanted and mis-timed pregnancies; skilled attendance at birth for all women; and access to emergency obstetric and neonatal care in case of complications. UNFPA has an extensive field network and provides expertise in all areas of programme management for reproductive health, enabling it to integrate EmOC within broader country programmes.
- The AMDD programme at Columbia University brings 15 years of expertise on the subject of maternal death, including publications, tools and resources developed during the 10-year operations research Prevention of Maternal Mortality programme; a model that connects technical and managerial expertise with human rights objectives; and funding granted by the Bill & Melinda Gates Foundation.

All projects are undertaken in cooperation with national governments; the mutual objective is to integrate EmOC into national health programmes to reduce maternal mortality.

Within the framework of their joint programme, UNFPA and AMDD, in close collaboration with national governments, agreed to support nationwide data collection to assess current EmOC availability in five African countries—Cameroon, Côte d’Ivoire, Mauritania, Niger and Senegal. The aim was to provide the hard information necessary to design programmes and to mobilize funding and political support.

The exercise was launched at a subregional workshop in October 2000 and data was reviewed at a second subregional workshop in Nouakchott in May 2001. The participation of five countries in this exercise resulted in valuable economies of scale and brought synergies to each country’s needs assessment by providing the opportunity to learn from the experience of others. Country teams are currently designing interventions and mobilizing support.

#### EMERGENCY OBSTETRIC CARE FOR SAFE MOTHERHOOD: THE TIME LINE

Oct. 2000	Oct.-Nov. 2000	April 2001	May 2001	2001-2002
Subregional workshop in Dakar, Senegal	Recruitment of coordinator	Completion of data collection in all five countries	Subregional workshop in Nouakchott, Mauritania	Programme design and mobilization of support
Presentation of methodology and approach	Finalization of project management systems; start of data collection		Presentation of data; control and refinement of calculations; situation analysis	Reporting to national authorities; selection of project sites; design of project interventions; national & international fundraising



## understanding the methodology

The traditional approach to monitoring maternal mortality uses “impact indicators” such as maternal mortality rates or ratios to measure progress. There are several problems regarding the calculation of impact indicators. Many developing countries do not have sophisticated vital registration systems and do not regularly record births, deaths or the causes of death. Incomplete records can be a problem even in major industrialized countries such as the United Kingdom and the United States. Consequently, rates or ratios determined from these data sources alone are simply inaccurate.

This leads to the use of household surveys to complete the picture. However, because maternal mortality is a statistically rare event, even in areas of high prevalence, household surveys produce a wide margin of error unless a very large sample size is used. Such surveys are also inappropriate for measuring programme progress as the data collected refers to a period in the past. Moreover, the process is costly and time consuming. In short, while impact indicators give a snapshot of the maternal mortality situation in a country at a given moment, they are not helpful for either programme design or monitoring.

Process indicators differ from impact indicators in that they monitor the factors that lead to a result, rather than the result itself. Regarding maternal death, the process indicators issued in the UNICEF/WHO/UNFPA Guidelines monitor the interventions known to be effective in reducing maternal deaths rather than monitoring maternal mortality itself. We can be sure we are

reducing maternal death and disability if services are available, accessible and being utilized by the target population.

Using the process indicators is cost-effective and far less labour-intensive because data collection can be integrated into the day-to-day work of health facilities. Most importantly, the indicators provide the data necessary for programme design as well as for programme management. The indicators are sensitive to change and can be used to record progress or identify problems within a relatively short time frame (which could be as little as six months), helping programme managers keep implementation on track. Since much of this report covers how the process indicators were used in the needs assessments conducted by each of the five countries, it is worth briefly describing the indicators at this stage.<sup>2</sup> The process indicators are based on the medical functions that are absolutely necessary to save the lives of women experiencing obstetric complications. There are eight such functions:

- (1) parenteral<sup>3</sup> administration of antibiotics;
- (2) parenteral administration of oxytocic drugs;
- (3) parenteral administration of anti-convulsants;
- (4) manual removal of placenta;
- (5) removal of retained products (e.g., manual vacuum aspiration);
- (6) assisted vaginal delivery;
- (7) surgery;
- (8) blood transfusions.<sup>4</sup>

By knowing the key functions that a health facility must perform to save women’s lives, it

is possible to find out whether facilities are in fact performing these functions or if the staff need more skills, equipment or supplies to do so. Not every health facility has to perform all eight functions. In fact, to treat the complications that lead to maternal death, health facilities can be divided into two levels of care: basic EmOC facilities, which perform the first six signal functions, and comprehensive EmOC facilities, which perform the first six plus surgery and blood transfusions. The process indicators establish acceptable levels for provision of services to women experiencing complications. This helps to alert national planners or facility managers to problems they need to address. The process indicators and acceptable levels are given in Table 1.

The first two process indicators tell us

whether facilities providing EmOC are available. Indicators 3, 4 and 5 tell us the extent to which the population is using these facilities. Indicator 4 is actually the most meaningful one regarding utilization, but because it is difficult to measure, indicator 3 sometimes provides an easier way to track utilization patterns.<sup>5</sup> Indicator 6 gives a sense of the quality of care at the facilities under consideration.

Host country nationals have been learning how to use the process indicators “as they go along.” This report is an expression of their consensual efforts. Data for the indicators will be refined during the project process, making the indicators themselves invaluable for monitoring projects and comparing each country’s situation.

**TABLE 1: THE SIX PROCESS INDICATORS**

INDICATOR	ACCEPTABLE LEVEL
1. Amount of essential obstetric care ■ basic EmOC facilities ■ comprehensive EmOC facilities	For every 500,000 population, there should be: ■ At least 4 basic EmOC facilities ■ At least 1 comprehensive EmOC facility
2. Geographic distribution of facilities	The minimum level in indicator 1 for the amount of emergency obstetric care should be met in subnational areas (i.e., facilities must be well distributed at the provincial or district level to be within reach of women in emergency situations).
3. Proportion of all births in basic EmOC and comprehensive EmOC facilities	At least 15% of all births in the population should take place in either basic or comprehensive EmOC facilities.
4. Met need	All women (100%) estimated to have obstetric complications are treated.
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 in the population.
6. Case fatality rate	The case fatality rate among women with obstetric complications is less than 1% at the facility.

## collecting and understanding the data



The data collection process in the five West African countries began in the year 2000. The initiative was implemented by UNFPA's Technical Support Division, its Country Support Team in Dakar and the five country offices. Three international consultants and the AMDD programme also provided support, primarily during the subregional workshops. UNFPA hosted a methodological workshop in Dakar 11–12 October 2000 for government maternal health programmers in Cameroon, Côte d'Ivoire, Mauritania, Niger and Senegal—as well as for UNFPA health staff. The experiences from Morocco and Malawi were presented at the workshop, which helped to clarify concepts, definitions and process issues to the 24 participants.<sup>6</sup>

Thereafter, a preparatory consultation was held in each country to clarify and reach consensus around definitions of obstetric complications. In addition, data collection strategies were defined and methodologies were tested at two facilities before beginning the assessment. A national team coordinated the study. Paramedical personnel were trained to conduct interviews and collect data at the facilities and at the local, regional and national level. Experts from national research institutions, UNFPA officers and Ministry of Health counterparts were responsible for training and supervision. The data collection took place between November 2000 and April 2001.

The performance of dozens of health facilities, both public and private, was assessed in the study. The facilities included both health centres and maternity homes, which were

expected to provide basic emergency obstetric care (i.e., were expected to be basic EmOC facilities), and district hospitals, which were expected to provide comprehensive care (comprehensive EmOC facilities).

In Mauritania, Niger and Senegal, all facilities were visited, providing for an exhaustive assessment of the situation. In Cameroon, five of the country's ten provinces were covered. In Côte d'Ivoire, a random selection was necessary because of the large number of facilities. Nevertheless, in all countries, the results give a good picture of the situation with respect to the availability (indicators 1, 2), utilization (indicators 3, 4, 5), and quality (indicator 6) of services, as shown in Table 2.

Before turning to the data in Table 2, it is worth noting that the use of the six process indicators is new, not just in West Africa but in many countries around the world, ranging from Peru to Bangladesh to Tajikistan. Using indicators is often a challenge to non-statisticians (and most service providers and programme managers are non-statisticians) because it requires collection, calculation and interpretation of figures. As has been the case in countries in other regions, some of the data collection initiatives went beyond the information required by the UNICEF/WHO/UNFPA Guidelines, which is of course the prerogative of governments. The presentation in Table 2 makes clear which is which.

Some questions also arose during the data collection exercises in different regions. In general, the most common issues include:

**TABLE 2: WEST AFRICA NEEDS ASSESSMENT FINDINGS AT A GLANCE<sup>7</sup>**

PROCESS INDICATORS	CAMEROON 5 out of 10 provinces: pop. 7,481,920	CÔTE D'IVOIRE 16 out of 46 districts: pop. 5,083,504	MAURITANIA All facilities: pop. 2,591,878	NIGER 85 facilities: pop. 10,951,862	SENEGAL All facilities: pop. 9.8 million
1. AMOUNT OF EmOC For every 500,000 population: At least 4 basic facilities At least 1 comprehensive facility	5 basic, 21 comprehensive 0.33 1.4	104 basic, 15 comprehensive 10.2 1.5	1 basic, 7 comprehensive 0.2 1.4	54 basic, 22 comprehensive 2.5 1.0	5 basic, 33 comprehensive 0.25 1.7
2. GEOGRAPHIC DISTRIBUTION OF FACILITIES Minimum level for amount of EmOC is met in subnational areas	n/a	68.8% of districts had basic, 81.3% had com- prehensive	4 out of 7 comprehensive EmOC facilities in Nouakchott	Low accessibility in rural areas	n/a
3. PROPORTION OF BIRTHS IN BASIC AND COMPREHENSIVE EmOC FACILITIES At least 15% of all births in the population ■ EmOC facilities ■ All facilities	n/a 5.9%	31.3% 45.1%	n/a 35%	n/a 11%	9.7% 28.6%
4. MET NEED At least 100% of women estimated to have obstetric complications are treated at EmOC facilities ■ EmOC facilities ■ All facilities	3.0% 8.2%	42.8% n/a	n/a 35%	n/a 19.8%	11.5% 19.4%
5. CAESAREAN SECTIONS AS A PERCENTAGE OF ALL BIRTHS Not less than 5% or more than 15% of all births in the population	0.2%	0.8%	0.5%	0.5%	1.1%
6. CASE FATALITY RATE The case fatality rate is less than of 1% women with obstetric complications in the facilities	5.7%	2.7%	1.9%	2.2%	4%

n/a - not available

- Data is sometimes calculated for all health facilities, and not just facilities known to be providing full basic or comprehensive EmOC;
- Some efforts have confused births by skilled attendants with births in basic or comprehensive EmOC facilities, as these are not necessarily one and the same;
- There is sometimes a lack of clarity as to which complications should be included in the calculation of “met need.”

The reason why the process indicators focus exclusively on facilities providing basic or comprehensive EmOC services, rather than all facilities, is that the majority of obstetric deaths are caused by complications that can only be treated in facilities that provide obstetric services. Normal deliveries can take place in a variety of environments with skilled attendants. The real issue is what happens during an emergency. The aim is not to have all births take place at a facility, but rather to ensure that there are enough facilities to provide emergency services within reach of the women who need them.

As people become more familiar with the process indicators and how to calculate them, the data will become both more accurate and more comparable, allowing for comparisons across countries. More importantly, they

will give service providers the confidence to use indicators to monitor and manage their facilities and to show positive results.

Turning now to Table 2, we find a mixed picture. While the availability of comprehensive EmOC services is satisfactory, the number of basic EmOC facilities is largely insufficient. Moreover, the use of both types of services is far too low, translating into a large need for EmOC that is not met. In Côte d’Ivoire, for instance, fewer than half (42.8 per cent) of women who need emergency care receive it. In Cameroon, only 3 per cent of women who develop complications receive EmOC, whereas the minimum acceptable level in process indicator 4 is at least 100 per cent. However, it should be noted that the met need indicator for Côte d’Ivoire shows a good deal of progress and is higher than that of many developing countries. The Caesarean section rate is well below the minimum threshold of 5 per cent (established in indicator 5), even in urban areas. The levels of these two indicators reveal that the majority of women experiencing obstetric complications in the five countries are not receiving treatment: they are dying or suffering insults. Quality of care, as expressed by the case fatality rate, is also problematic as none of the countries are below the level of 1 per cent recommended by indicator 6.



The data collection exercise in Cameroon was conducted in five provinces. It began with orientation workshops for the rural data collection teams. Results from a previous programme evaluation were incorporated into these workshops and used to sensitize political stakeholders, including the secretary of the Ministry of Health, to the importance of the exercise. Some of the constraints during the exercise involved occasional inconsistent or improperly adapted methods of data collection, inadequately trained personnel and lack of community involvement.

**AVAILABILITY:** The needs assessment revealed that EmOC was insufficiently available, as can be seen in Table 3 below. Of the facilities that were supposed to provide such care, 13 were unable to do so because they lacked materials and/or human resources.

Poor resource management was a main reason facilities were functioning under capacity, particularly when it came to allocation of

personnel, equipment and supplies. Access to emergency services was difficult during off-hours. At night, facilities were more likely to be staffed by less qualified personnel than during day shifts. Basic EmOC facilities—especially those in rural areas—rarely offered all-night service.

In urban areas, doctors, nurses and midwives staffed both basic and comprehensive EmOC facilities. In rural areas, comprehensive EmOC facilities were always well staffed, but basic EmOC ones only had nurses and/or nurses' aides at best. Urban facilities usually offered all-night service; however, EmOC was not provided by qualified personnel in a consistent manner. In many cases auxiliary staff performed interventions beyond their skill level and a doctor was only called in case of emergency. In rural settings, facilities sometimes closed during off-hours, and occasionally even during scheduled hours.

**TABLE 3: FINDINGS FROM FIVE PROVINCES IN CAMEROON**

PROVINCE	TOTAL POPULATION	PROCESS INDICATOR 1					
		Comprehensive EmOC			Basic EmOC		
		Number	Per 500,000 population	Acceptable level	Number	Per 500,000 population	Acceptable level
Centre	2,154,094	5	1.16	yes	0	0	No
Est	692,183	1	0.72	no	0	0	No
Extrême-Nord	2,533,953	7	1.35	yes	5	0.95	No
Nord	1,604,000	3	0.94	no	0	0	No
Sud	497,690	5	5.02	yes	0	0	No
<b>TOTAL</b>	<b>7,481,920</b>	<b>21</b>	<b>1.4</b>	<b>YES</b>	<b>5</b>	<b>0.33</b>	<b>NO</b>

**UTILIZATION:** The data revealed that only 5.9 per cent of all births took place in health facilities (this was calculated for all facilities; indicator 3 sets the minimum acceptable level at 15 per cent for EmOC facilities). Met need was estimated to be 3.0 per cent at EmOC facilities, whereas the minimum acceptable level in indicator 4 is 100 per cent. At 0.2 per cent, Caesarean sections were below the level of 5 per cent set in indicator 5. Among other findings, significant differences in the cost of services were noted. In urban areas tests and Caesarean sections were extremely expensive, whereas such services were far more affordable in rural areas.

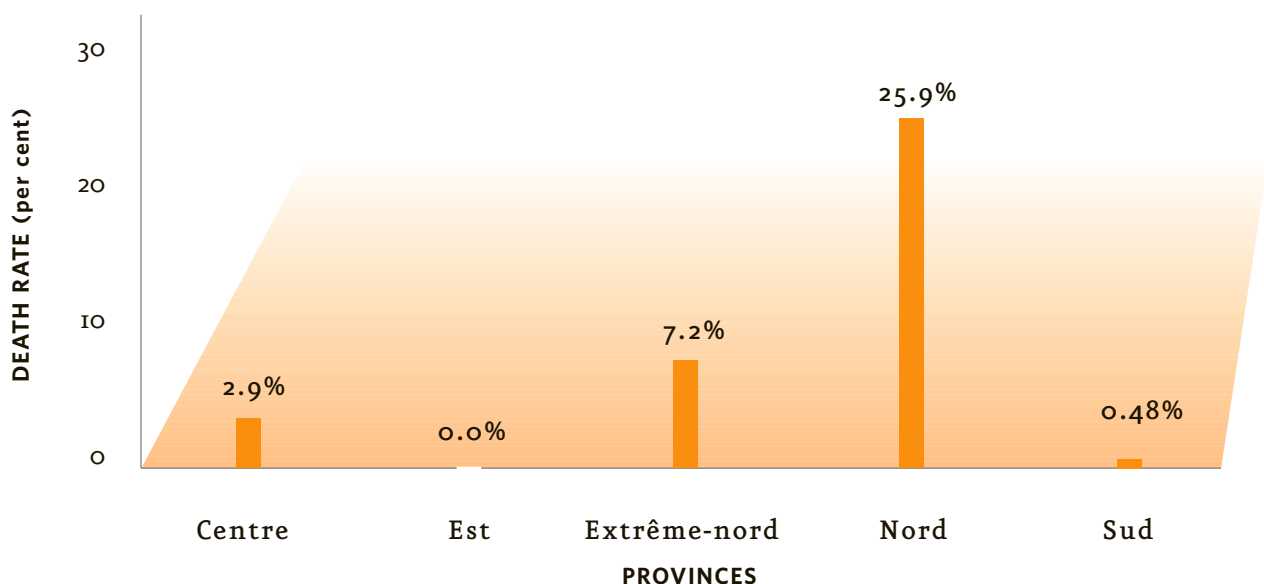
**QUALITY:** Data was gathered from delivery registries as well as from operating theatre and surgical emergency registries. This data is likely to be incomplete as many deaths are not recorded. Figure 1 below shows case fatality rates in the five provinces. In only two of them

is this less than 1 per cent, the level established in indicator 6.

Many of the recorded deaths could have been avoided by having properly trained personnel, improved referral and emergency transport systems, and access to appropriate equipment and supplies. Delays in referring patients to a higher level of care and delays in attending to patients' tertiary care facilities contributed to high death rates. Ineffective infection control was also factored into the high maternal mortality rate.

**PROGRAMME STRATEGIES TO UPGRADE EMOC SERVICES:** Data analysis pointed to several steps to strengthen the availability and quality of EmOC services, including ensuring permanent, reliable 24-hour service. This would involve reorganization of services to improve logistical management, decentralization of financial and material resources, training and use of personnel, funding for supplies and

**FIGURE 1: CASE FATALITY RATE IN FIVE CAMEROON PROVINCES**





materials, and the quality of health information systems for ongoing monitoring of the situation. In particular, there was a need to reorganize training at the district level and to compile, disseminate and ensure utilization of standards and procedures to improve staff competence when addressing obstetric complications. There is a need for more in-depth analysis of the costs of EmOC and, in particular, Caesarean sections. Further research on the determinants of modern treatment-seeking behaviour during pregnancy and delivery would also be helpful.

This information is being used in programme strategies to improve maternal care in Cameroon. Services will be reorganized to integrate EmOC into the full spectrum of reproductive health services envisaged in the national strategy for Cameroon. The goal is decentralized management of reproductive health programmes to improve programme efficiency. Local and regional centres will receive strong support from the central level, including support for training conducted at the local level. Central and local level support for studies and research will help to strengthen existing programmes. In addition, there will be increased support for monitoring and evaluation activities and coordination of efforts and support among development partners.

More specifically, EmOC services can be strengthened by: ameliorating obstetric care and ensuring the availability of essential

EmOC functions; developing a working system of referrals; and promoting community cost-sharing and transportation schemes for the emergency care of women experiencing complications.

As the number and quality of services increase, it is expected that demand will grow accordingly. This growth will include community mobilization and an information, education and communication strategy for each targeted group. Aimed at adolescent populations, this strategy will promote and support reproductive health information and services.

**MONITORING:** The process indicators will be used to monitor improvements in EmOC services within the range of tools used for the Making Safe Motherhood a Reality project. These will be continually updated and modified to include variables addressing infant mortality, training and monitoring. Tools will involve careful collection of data pertaining to deliveries, health personnel (including the training that staff have received) and the date and outcome of their most recent evaluations.

Much of this information will be gathered from existing databases including health centre delivery registers, hospital referral lists and the supervisor's manual. Data can also be recorded from operating theatre registers, charts, partographs and hospital consultation records. Further information concerning the distribution of personnel will be available in personnel records.





An exhaustive assessment of health facilities was conducted in 16 of 46 districts. Data was collected between March and April 2001 by both national and local research teams; data came from registers and other records as well as from service providers. Many activity reports did not account for obstetric complications and deaths and persistent complications were poorly reported. Other areas of concern include referrals, admissions protocol and clear job descriptions.

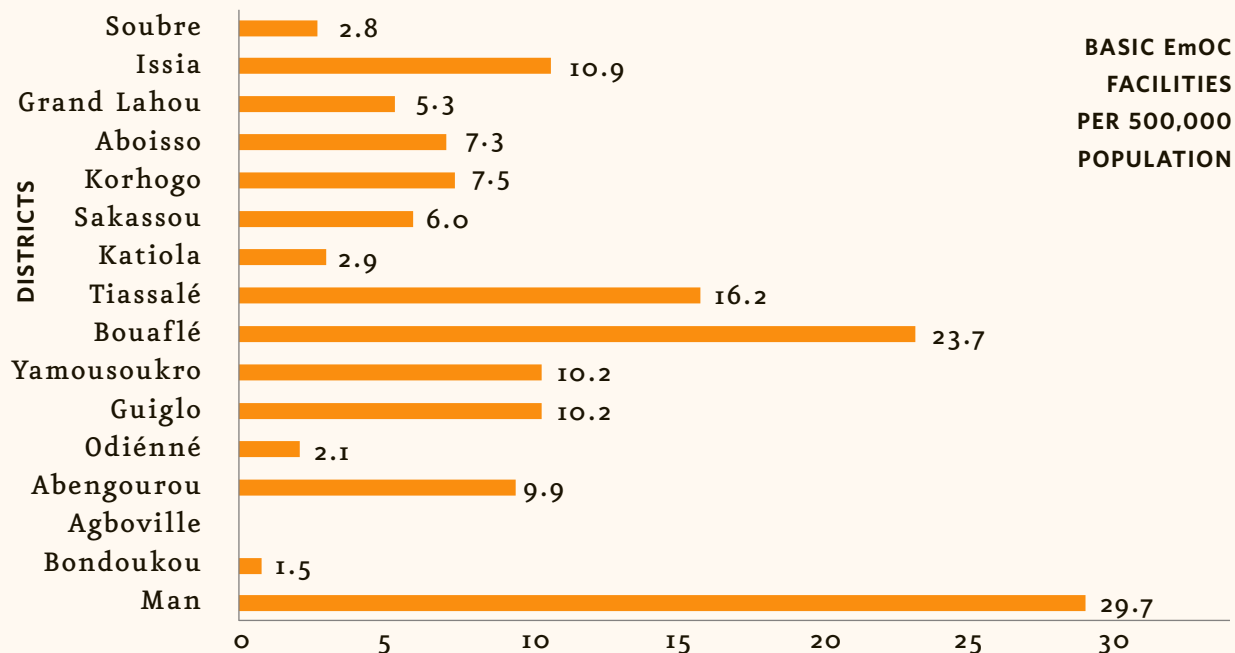
**AVAILABILITY:** Figures 2 and 3 show the distribution of basic and comprehensive EmOC facilities by district.

Nevertheless, while more than 50 per cent

of the population has access to health-care facilities, many women remain outside the health infrastructure catchment area. Furthermore, Côte d'Ivoire has a poor referral system and there is limited access to ambulances and other transportation.

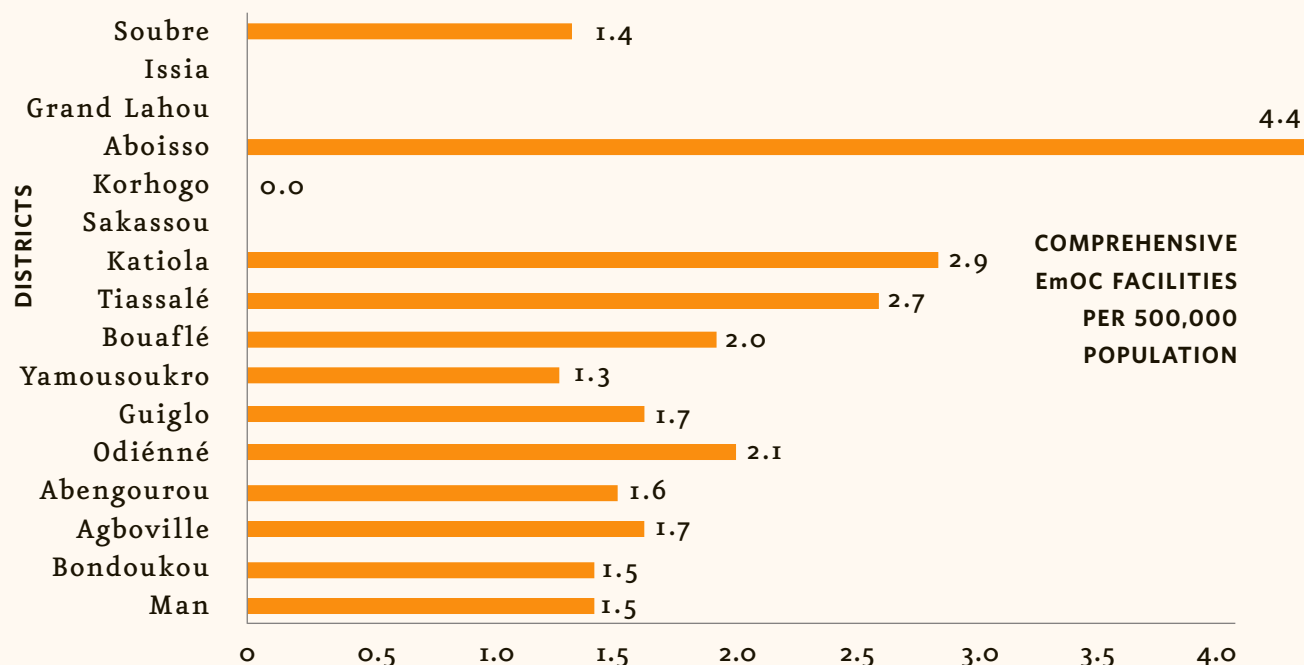
Six health centres classified as basic EmOC facilities have the potential to become comprehensive EmOC ones if resources became available. Currently, facilities in both Korhogo and Bouaflé cannot meet the need for blood transfusions while facilities in Tiébissou, Tiassalé, Grand Lahou and Issia lack functioning operating theatres.

**FIGURE 2: AVAILABILITY OF BASIC EmOC FACILITIES IN CÔTE D'IVOIRE**



NOTE: Absence of data indicates that these districts were not included in the sample.

FIGURE 3: AVAILABILITY OF COMPREHENSIVE EmOC FACILITIES IN CÔTE D'IVOIRE



NOTE: Absence of data indicates that these districts were not included in the sample.

Nevertheless, while more than 50 per cent of the population has access to health-care facilities, many women remain outside the health infrastructure catchment area. Furthermore, Côte d'Ivoire has a poor referral system and there is limited access to ambulances and other transportation.

Six health centres classified as basic EmOC facilities have the potential to become comprehensive EmOC ones if resources became available. Currently, facilities in both Korhogo and Bouaflé cannot meet the need for blood transfusions while facilities in Tiébissou, Tiassalé, Grand Lahou and Issia lack functioning operating theatres.

Both basic and comprehensive EmOC facilities are staffed as recommended: basic EmOC facilities by nurses and midwives and comprehensive EmOC ones by nurses, midwives, general practitioners, obstetrician/gynaecologists and general surgeons. Rural facilities are open

and staffed 24 hours a day. In urban facilities, midwives and doctors use an emergency alert system to provide speciality staff needed for more complex cases. However, both rural and urban facilities often have problems keeping essential drugs in stock.

Almost every facility has poor access to drugs, equipment and supplies. Furthermore, the buildings are commonly in need of repair. The assessment also determined the need to increase staff and improve training for already available staff. Common causes of such shortcomings are: insufficient geographic distribution of health facilities; poor human resource planning; ineffective management of medications and supplies; and inadequate monitoring, supervision, and evaluation of activities.

**UTILIZATION:** Slightly more than 31 per cent of all births take place in basic and comprehensive EmOC facilities, a higher percentage than that required for indicator 3. Met need for

EmOC by district averages at 42.8 per cent, which is below the acceptable level but still better than in many other developing countries. A staggeringly low 0.8 per cent of women receive Caesarean sections (indicator 5 dictates that 5–15 per cent of women should be receiving them).

**QUALITY:** The survey revealed that the average case fatality rate was 2.7 per cent for the 16 districts, with the rate in Soubre being as high as 7.9 per cent, as shown in Figure 4.

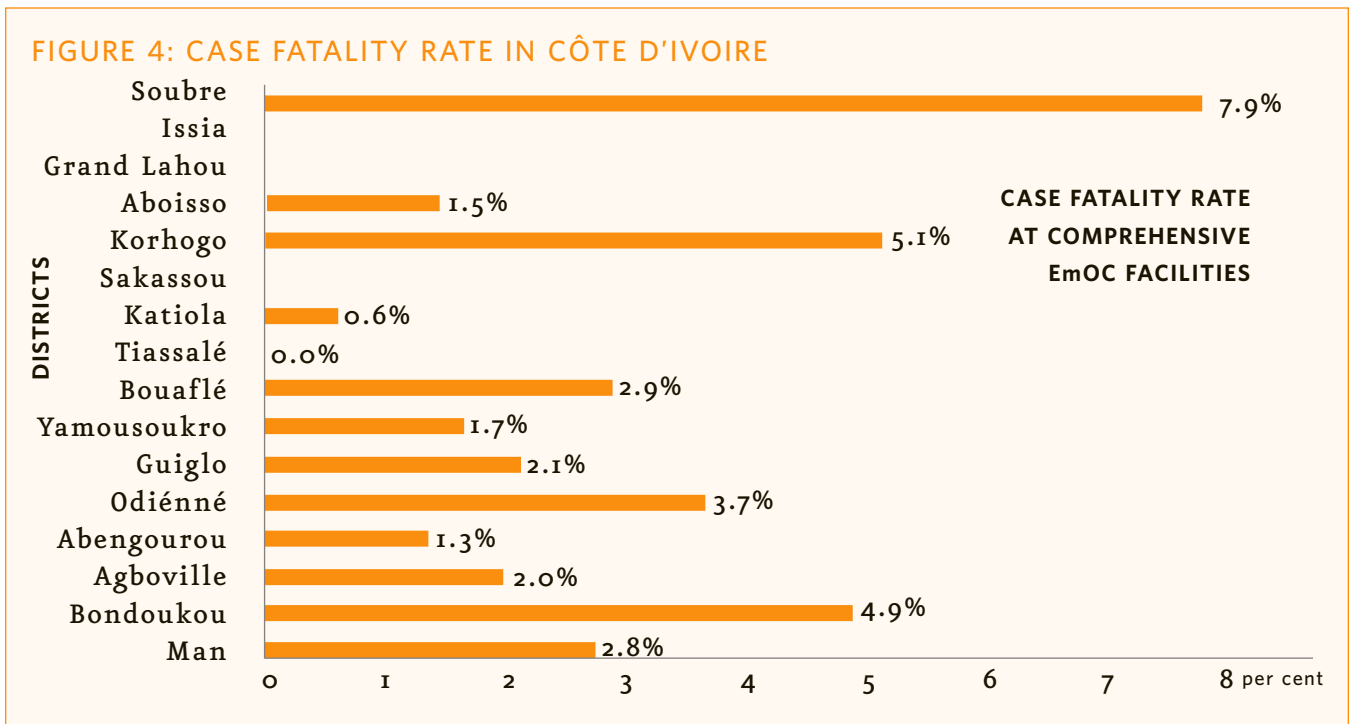
**PROGRAMME STRATEGIES TO UPGRADE**

**EMOC SERVICES:** The National Plan for Health Sector Development 1996-2005 has made maternal mortality reduction a national priority. The needs assessment is contributing to strategies to improve accessibility to and quality of EmOC as well as to stimulate greater community demand for services.

At the district level, the priority is to improve the availability of EmOC by transform-

ing potential EmOC services into fully functioning ones by improving personnel and drug supply systems. For comprehensive EmOC facilities, the priority is to procure equipment for operating theatres and blood transfusions. It was determined that an essential drug policy should be instated and that drugs should be available at reduced cost. Generic drugs should also be promoted as a means of cost reduction. A comprehensive system for the procurement of essential drugs should include a central sales facility that offers credit to all health facilities and allows drugs to be obtained at a 10 per cent discount and prior to payment.

**MONITORING:** Monitoring will be conducted at the district level and integrated into the existing monitoring system. District and local teams for data collection, production and utilization of process indicators will be formed. However, the limited availability of resources and support staff may constrain plans.



NOTE: Absence of data indicates that these districts were not included in the sample.



Mauritania's health infrastructure is highly concentrated in the district of the capital, Nouakchott. The data collection exercise covered 67 health facilities in 13 *wilaya* (districts). The principal problems revealed by the assessment include an insufficient number of staff—many of whom had little motivation and a low skill set—and insufficient staff supervision.

**AVAILABILITY:** Only one of the wilayas surveyed, Tiris Zemour, had a basic EmOC facility, whereas the country's population of 2,591,878 would require a minimum of 20 well-distributed basic EmOC facilities, according to the process indicators. Although there are seven comprehensive EmOC facilities, four of them are located in Nouakchott—well beyond the reach of many women who need surgery or blood transfusions.

Some facilities that have the potential to provide basic and comprehensive EmOC are not well utilized—particularly the facilities in Bir Mogrein and Tichitt. All facilities lack the necessary staff and 75 per cent lack material resources (e.g., equipment and supplies), both of which are necessary to provide an acceptable standard of EmOC. The insufficiency in material resources is largely due to poor management of equipment, supplies and funds, as well as to poor maintenance of the facilities themselves. Mauritania's overall health delivery system suffers from a lack of supervision at the central level and poor management of human resources.

**UTILIZATION:** The calculations for Mauritania used the number of births taking

place in all facilities—not just in basic and comprehensive EmOC ones. As for indicator 5, Caesarean sections only account for 0.5 per cent of births rather than between 5 per cent and 15 per cent. In other words, the vast majority of women who need surgery are not receiving it and either die or suffer disability. Among other factors inhibiting utilization, transport is difficult due to long distances and rough terrain, which gets worse during the rainy season. Furthermore, there are few regularly scheduled vehicles. Cost is another factor; a normal vaginal delivery in a hospital can cost UM3,000 to UM7,500, while a Caesarean costs UM16,000–UM20,000. (To put this into context, the average monthly salary for a civil servant is UM15,000.)

**QUALITY:** The average case fatality rate (indicator 6) is 1.9 per cent. This data came from death and birth registries, operation reports and monthly activity reports. The quality of the data is intermittent, at best. According to sources, most deaths are due to haemorrhage and ruptured uteri. Some respondents mentioned poor skills and motivation as factors affecting the quality of care.

#### **PROGRAMME STRATEGIES TO UPGRADE**

**EMOC SERVICES:** Several initiatives are under way to improve maternal care in Mauritania. These programmes develop infrastructure by: constructing, extending and renovating facilities; ensuring adequate access to supplies and equipment; improving existing human resources; and bettering national, regional and local monitoring and evaluation.

The programmes include: an initiative to ameliorate the quality of care for sexual and reproductive health services; a programme to ensure safe blood transfusions; an initiative to set up a central drug procurement unit; and efforts to reform the National Institute for Midwifery Training. The findings of the needs assessment exercise will be integrated into ongoing programmes.

A key programme that has the potential to be replicated on a national scale is the Safe Motherhood Programme for Nouakchott. This programme is coordinated by the Ministries of Health, Social Affairs and the National Central Hospital and is supported by both the French Government and WHO. A thorough situational analysis underpins programme activities, which include reviewing and incorporating the WHO standards and guidelines, perinatal and socio-anthropological surveys, and an assessment of the reproductive health situation in Nouakchott.

The programme recognizes that before referrals can be promoted, facilities must be strengthened. Fortifications will include the construction of a maternal operating theatre in Sebkhah with two operating rooms, an intensive care unit, and provision of equipment. In addition, the new Cheikh Zayed Hospital will provide maternity care. A national blood transfusion policy will be put into place and monitored.

Staff training will enhance available services offered in both referral centres and basic EmOC facilities. Improvements will include: providing training for 100 midwives; regular training seminars for doctors at health centres; and the provision of libraries at all centres. In addition, 12 midwives will be trained to give obstetric

sonograms. The pilot site will be the training centre in Teyaret.

Social mobilization, among other things, will promote a dialogue between service providers and patients through user committees at health facilities. In addition, intra-facility committees will also be formed and there will be enhanced administrative supervision, improved geographic distribution of professionals, and continuing education for all staff. An effort to improve communication among rural and district centres will be promoted. Finally, a committee dedicated to preventing maternal deaths will be formed.

At the national level, efforts to improve EmOC services include the following: regional trainers must have an understanding of standards of care, procedures and development of a more comprehensive human resource policy that includes effective management systems. The referral and feedback system will also be expanded and will include a supervisory and mentoring system. Efforts will be made to mobilize community participation in developing a financing system. In this regard, it is worth mentioning a UN Foundation-funded UNFPA/WHO/UNICEF project currently in place to improve quality of care through a partnership of service providers and users. **MONITORING:** For better data collection, systems will need to be uniform and functional at all levels. Staff and health managers need practical field training in data collection and calculation of indicators. Training will help address the current lack of interest in monitoring. This disinterest has resulted in the irregular dissemination of information and a poor use of data in improving facility functions.



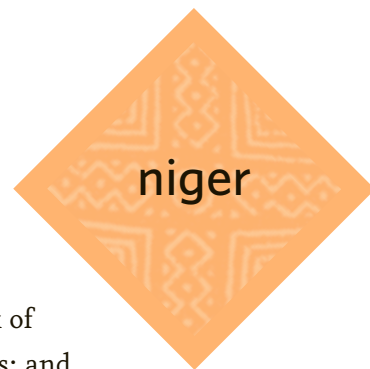
The plan is to establish a monitoring schedule that produces monthly EmOC reports, trimester regional reports, and bi-annual and annual national activity reports. Data will be collected from delivery and operating theatre registers and reports, as well as from pre- and post-natal registers. In addition to process indicator data, information regarding the

number of complications and emergency transfers requested and received will be regularly collected.

The existing national health information system will be used to process and record this data. It is not necessary to create new networks, but rather to ameliorate the existing system and to involve its regional managers.







The survey in Niger covered the entire country; data was collected between February and April 2001 from 85 potential EmOC health facilities (22 comprehensive and 63 basic). Primary sources were delivery registers and partographs, maternity hospital registers, operation registers and abortion registers. Valuable information was also gained from both birth and death registers and certificates as well as from women’s identification cards. Activity reports for training conducted by the facilities were analysed. Other sources of information, such as temperature logs, were also used.

Data collection in Niger was difficult. The number of deaths is uncertain as death registers are not well maintained. There is a wide variation in quality of data among regions; often women’s ages are not included. There is clearly a significant problem with under-reporting of complications associated with maternal and neonatal deaths. Data collection took longer

than expected as: (1) the surveyed area was extremely expansive; (2) there was a lack of standardization among sources; and (3) Niger has a low standard of record keeping.

**AVAILABILITY:** Analysis of the data showed that the availability of basic and comprehensive EmOC was lower than expected. Facilities are unable to function as planned, largely because quotas set for midwives, doctors trained in emergency surgery, surgical aides and anaesthetists have not been met.

Agadez is a vast region, which makes access to EmOC difficult, except for the urban population. In Diffa, although the population is dispersed, health coverage is good. In contrast, Tahoua, Dosso, Maradi and Zinder have high concentrations of population, but offer poor health coverage. As in many other countries, the lack and poor distribution of qualified personnel contribute to the lack of adequate EmOC services. Inadequate training, lack of

**TABLE 4: OBSTETRIC COMPLICATIONS TREATED IN NIGER**

REGION	POPULATION	EXPECTED BIRTHS	EXPECTED COMPLICATIONS	COMPLICATIONS TREATED	PERCENTAGE OF MET NEED
Agadez	407,084	21,168	3,175	1,678	52.85
Dosso	1,590,261	82,694	12,404	954	7.69
Diffa	221,482	11,517	1,727	352	20.38
Maradi	2,201,129	114,459	17,168	2,411	14.04
Zinder	2,098,884	109,142	16,371	5,815	35.52
Tahoua	1,905,960	99,110	148,666	2,055	1.38
Tillaberi	2,022,256	105,157	15,773	725	4.60
C. U. Niamey	685,650	35,862	10,284	3,218	31.29
<b>Niger Total</b>	<b>11,136,706</b>	<b>579,109</b>	<b>86,866</b>	<b>17,218</b>	<b>19.82</b>

**TABLE 5: PERCENTAGE OF CAESAREAN SECTIONS PERFORMED IN NIGER**

REGION	TOTAL POPULATION	EXPECTED BIRTHS	NO. OF C-SECTIONS PERFORMED	% OF C-SECTIONS PERFORMED
Diffa	221,482	11,517	39	0.33
Dosso	1,590,261	82,694	194	0.23
Maradi	2,201,129	114,459	541	0.47
Zinder	2,098,884	109,142	299	0.27
Agadez	407,084	21,168	83	0.39
Tahoua	1,905,960	99,110	534	0.53
Tillaberi	2,022,256	105,157	101	0.096
C.U. Niamey	685,650	35,862	1,100	3.06
<b>Niger Total</b>	<b>11,132,706</b>	<b>579,109</b>	<b>2,891</b>	<b>0.49</b>

equipment and supplies exacerbate the situation, as do the vast distances to be traversed and the poor referral systems in place.

**UTILIZATION:** Tables 4 and 5 contain data on utilization of facilities. However, the number of obstetric complications was calculated for all facilities, not just for EmOC ones. The percentage of Caesarean sections performed (0.5 per cent) is far lower than the acceptable level of 5 per cent.

One reason for low utilization is the low comfort level experienced by patients, who complain that health centres are cramped and that personnel are unfriendly and/or lack motivation. Another major reason cited for low utilization is the cost of services, which is beyond the reach of the majority of the population, although a fee limit has been set for indigent women. In addition, medications and supplies are expensive. The scattered population, poor state of roads, and inadequate means of transportation also contribute to low levels of utilization.

One reason for the perceived lack of staff

motivation may be poor training. Many personnel have not mastered the necessary technical procedures—nor have they been trained in the use of protocols, standards and procedures.

In urban areas, personnel who are on duty are required to be present in the facility. In rural areas, personnel may spend on-call time at home and are summoned for emergencies. However, this presents a problem as many providers live far from the centre. Providing housing closer to health facilities for doctors and midwives is a possible solution.

**QUALITY:** The case fatality rate of 2.2 per cent shown in Table 2 is higher than the minimum acceptable level established by indicator 6.

**PROGRAMME STRATEGIES TO UPGRADE**

**EMOC SERVICES:** In order to improve provision of EmOC services within its health system, Niger—in partnership with UNFPA, UNICEF, WHO, the African Development Bank and the European Union—will strengthen its National Reproductive Health Programme. Several other ongoing programmes are already in place. Specific activities relating to EmOC include:

■ Increasing the availability of basic EmOC facilities from 3.18 to 4.36 per 500,000 population in the priority regions of Diffa, Maradi, Tillaberi, Agadez and Zinder by reinforcing providers' knowledge in using a vacuum extractor and introducing reproductive health into the core curriculum.

■ Increasing the availability of comprehensive EmOC facilities from just under 1 to 1.98 per 500,000 with 21 facilities in the priority regions of Maradi, Diffa, Agadez, Zinder, Tillaberi, Tahoua, Dosso and C.U. Niamey.

In general, at both basic and comprehensive EmOC facilities, efforts will focus on better referral systems, improved record keeping and compilation of data, better logistics and communication, and improved supervision and training. Training of personnel is an essential strategy and existing efforts must be enhanced by upgrading providers' knowledge and skills in the use of vacuum extraction. Technical meetings to provide training will be organized and monitored at the national level.

Health-care team management will enhance the quality of EmOC services. It is also necessary to develop a cost recovery system for drugs and purchasing centres at the regional and sub-regional levels.

Decentralizing the health system and further developing existing health districts will subsequently improve EmOC services. Ensuring utilization of services also requires a careful evaluation of fees to ensure that the

system takes both the cost of services and the ability of patients to pay into account.

Once services are upgraded, efforts will promote community utilization of and participation in the management of the facilities through various committees, and reaching out to non-governmental organizations.

**MONITORING:** Much of the information gathered will be synthesized into new reproductive health standards and procedures. Continued data collection and monitoring will be promoted and improved. Included will be a review of underserved populations in order to analyse accessibility, use of services, clients' needs, and upcoming project implementation.

A system to monitor and evaluate the progress of initiatives to upgrade services is being set up. An indicator chart will be included in all maternity registers. Indicators will be calculated for assisted births, obstetric complications treated, and Caesarean sections. The plan of action for monitoring, which will address all levels of service, will be elaborated during a national workshop. All stakeholders will be involved during coordination and supervision meetings and the work will be integrated into the National Health Information System planned for 2002.

Constraints to be addressed include fund-raising, lack of harmonization in the process of definition of obstetric complications, and under-reporting of data, especially concerning case fatalities.





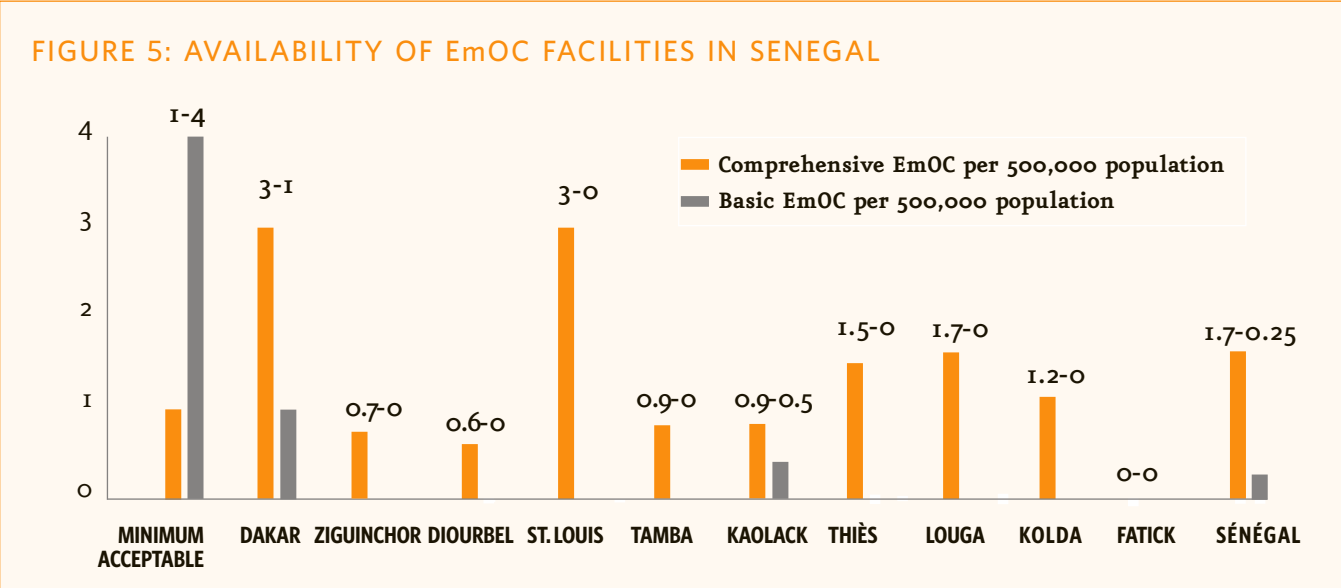


The needs assessment in Senegal was exhaustive and took into account the many other evaluation projects already under way. Current projects include an evaluation of essential obstetric services in the area of Tambacounda (undertaken by WHO) and a national epidemiological study of pelvic dystocia (conducted by the French government in cooperation with WHO). The needs assessment began with identification and cataloging of the country’s resources, including both public and private health facilities.

**AVAILABILITY:** As Figure 5 shows, Senegal has very few fully functioning basic EmOC facilities, primarily due to the scarcity of personnel capable of performing manually assisted delivery (with use of forceps or a vacuum extractor). Most facilities include all required functions save vacuum extraction. Such facilities were called “potential basic EmOC facilities.”

The number of qualified medical staff is insufficient. The national average is only one gynaecologist per 30,458 women of reproductive age. This shortage may worsen as the number of medical personnel appears to be dwindling while the population is growing. The geographic distribution of qualified health personnel also plays a part in the lack of access to appropriate care. Unfortunately, the vast majority of qualified health personnel (76 per cent) are practicing in the capital, although only 41 per cent of the population is urban—making EmOC inaccessible to most women.

**UTILIZATION:** In terms of utilization, the proportion of births in EmOC facilities is 9.7 per cent, while met need is 11.5 per cent. Figures 6 and 7 show the proportions of births and treatment of complications at all facilities rather than at EmOC facilities. Few obstetric complications are treated in Senegal, which



explains the country's high maternal mortality rate (510 maternal deaths per 100,000 live births). In addition, Caesarean sections are reported to be well below the acceptable level at 1.1 per cent.

**QUALITY:** The case fatality rate is high at 4 per cent at all EmOC facilities (Figure 8). The major medical causes of death are haemorrhage and eclampsia. There is a dire shortage of staff and an urgent need for better skills

and protocols for treatment.

**PROGRAMME STRATEGIES TO UPGRADE**

**EMOC SERVICES:** The needs assessment pointed to the areas where investment in services was necessary. A number of interventions were suggested, of which staff training was perhaps the most important:

- Short-term training of gynaecologists and midwives to perform vacuum extraction.
- A long-term national training plan to

FIGURE 6: PROPORTION OF BIRTHS IN ALL FACILITIES IN SENEGAL

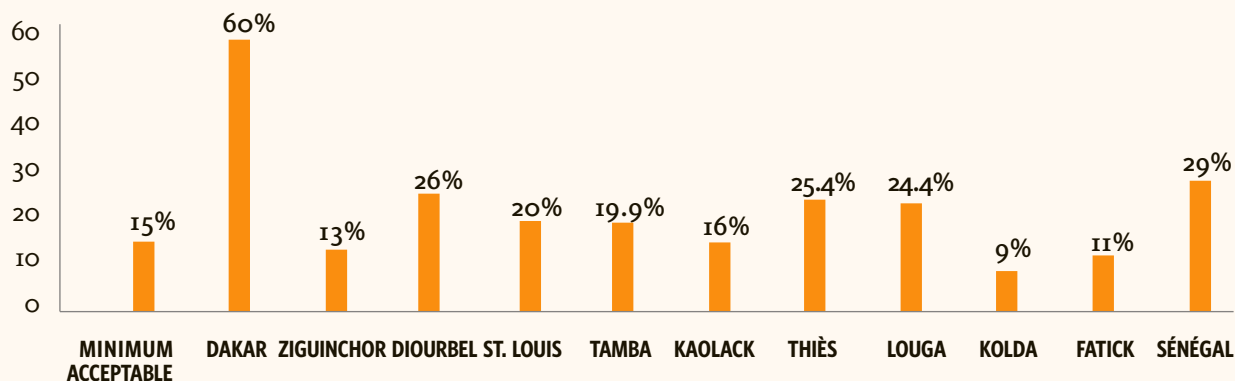


FIGURE 7: TREATMENT OF COMPLICATIONS IN ALL FACILITIES IN SENEGAL

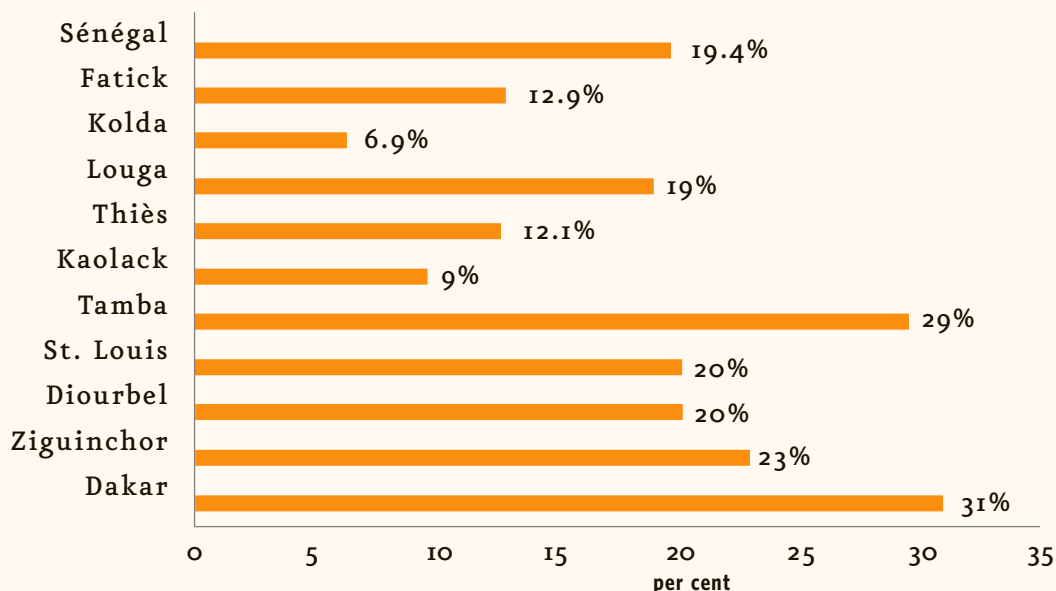
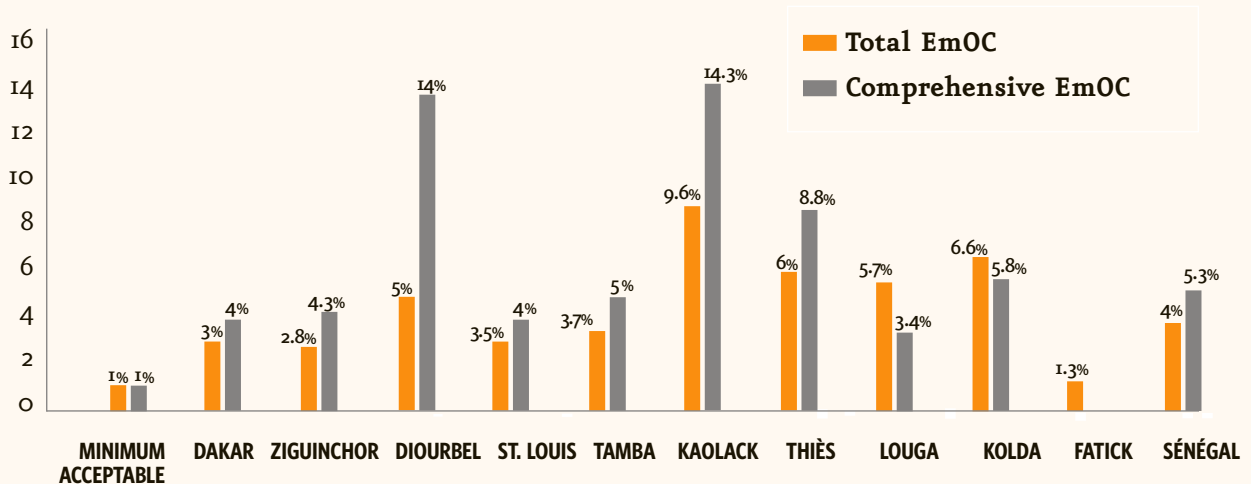




FIGURE 8: CASE FATALITY RATE IN FACILITIES IN SENEGAL



reinforce the ability of health personnel to diagnose and treat obstetric complications: establish a full training curriculum for doctors and midwives; create an EmOC training curriculum for chief nurses who would supervise assisted births in their facilities; and train anaesthetists and midwives.

- Renovate and furnish facilities.
- Decentralize budgetary posts for Ministry of Health personnel.
- Improve access to EmOC facilities, including both geographic distribution and financial accessibility.
- Equip appropriate health centres with blood supplies and provide them the ability to perform transfusions and Caesarean sections.
- Improve transport within the referral system (telephone/radio contact, ambulance, community transport, etc.).
- Promote the training and decentralization of midwives to improve access to skilled attendance at birth.

- Educate the population on the importance of skilled birth attendants, hospital transport when necessary, and mobilizing the community to reduce the delay in deciding to seek medical care.

**MONITORING:** The assessments indicated a need for ongoing monitoring at the national level. Plans for monthly and biannual activity reports should contain a column for EmOC. EmOC monitoring activities should also be integrated into other tri-annual supervisory activities performed by district team managers. Data will include total population, expected births, pregnancy complications and deliveries expected, maternal and neonatal deaths, and the use and number of delivery rooms and operating theatres, resuscitations and administrative services. The sources will be register reports and all data should be uniform for integration into the national Health Information System.

## mobilizing support

The previous section described data collection, analysis and planning initiatives in five West African countries. The entire exercise cost \$50,000. The data was collected to stimulate action. Based on the mapping of obstetric services and the identification of sites most in need of support to expand obstetric services, project proposals are being drafted and discussed with governments and donors. In this regard, the needs assessment project has already been successful in generating funding and support. Funding has been mobilized in three countries, with good prospects for the two others. Moreover, the data collection exercise will be replicated in Gabon, The Gambia and Guinea-Bissau, with the intention to expand it to the entire subregion.

**UNFPA/Niger** has already successfully obtained funding from Luxembourg to implement interventions in five districts and has developed detailed project proposals. In **Senegal**, survey results—which were shared with national authorities, including the newly appointed Minister of Health—will lead both to a selection of areas with the greatest need and to the drafting of a national report. Interventions focusing on EmOC are included in the UNFPA country programme for Senegal and funds are available. The UNFPA office will support these same data collection activities in **The Gambia**. In **Cameroon**, UNFPA developed a project proposal for 10 districts in preparation for larger inputs into the next country programme. A national workshop was

held at the end of 2001. Results were shared with representatives from the Ministry of Health and development partners. The results of a pilot project will be integrated into a national safe motherhood and reproductive health strategy. In Mauritania, a documentary video has been produced and a report was written. Fund-raising proposals have been drafted by each of the five countries (Cameroon, Côte d'Ivoire, Mauritania, Niger, though it has already received funds from Luxembourg, and Senegal).

A proposal to strengthen EmOC interventions in **Côte d'Ivoire** has been completed. Funding from bilateral donors and development banks is currently being negotiated. In **Mauritania**, a national meeting will be held to review and coordinate the various safe motherhood initiatives.

In some cases, funds were expected to become available through a mechanism similar to the sector-wide approach (SWAp) for assistance and national resources, as in Cameroon, Côte d'Ivoire, and Senegal. UNICEF is now embarking on a similar needs assessment in four countries: Benin, Chad, Guinea and Mali. With technical assistance from UNFPA, a regional assessment meeting will be organized for the end of 2003. At the meeting, strategies will be discussed to strengthen EmOC services and to further expand the integration of EmOC into health systems in a sustainable manner. UNFPA can and will make a strong contribution to making safe motherhood a reality.

## notes

- 1 Essential obstetric care (EOC) is used to refer to the full list of services that should be provided during pregnancy and childbirth. WHO has issued several publications that discuss this package of services (e.g., the Mother Baby Package and Managing Complications in Pregnancy and Childbirth). In this report, the term “emergency obstetric care” (EmOC) refers to those services that are critical to saving a woman’s life in case she experiences complications during pregnancy, at childbirth or in the post-partum period. Although some conditions can be treated before becoming true emergencies (for example, a Caesarean section can be done in the case of prolonged labour before the woman is seriously ill), we use the word “emergency” to convey the importance of prompt medical treatment.
- 2 For more information about process indicators, readers are referred to the Guidelines as well as to the UNFPA-AMDD distance learning course, *Reducing Maternal Deaths: Selecting Priorities, Tracking Progress*.
- 3 *Parenteral*: by injection or intravenous infusion.
- 4 These eight functions are known as “signal functions.”
- 5 Indicator 3 is **not** intended to suggest that all births should take place in facilities. It has been estimated that, in any population of pregnant women anywhere in the world, 15 per cent will experience an obstetric complication. Thus, if we know that 15 per cent of births are taking place in facilities that provide EmOC, then this is an indication—although just one indication—that the population is making use of these facilities.
- 6 The workshop report is available from UNFPA.
- 7 For information on how to calculate the process indicators, check the AMDD Workbook, *(Almost) Everything You Want to Know about Using the UN Process Indicators of Emergency Obstetric Services—Questions and Answers*, by Anne Paxton, Deborah Maine and Nadia Hijab.





October 2012

