

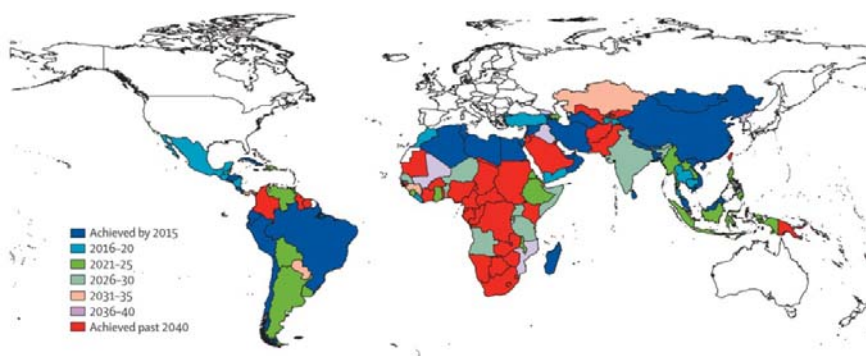
Essential Obstetric and Newborn Care (EONC)

This Essential Obstetric and Newborn Care (EONC) Program Implementation Guidance outlines key steps, identifies available resources, and shares lessons learned to help country programs, donors, and governments to develop high-quality and relevant EONC interventions. This guidance presents experience, evidence and lessons learned from EONC programming in developing countries, with a focus on Africa.

BACKGROUND

Globally, maternal and neonatal mortality remain important health issues for most developing countries. Although the number of maternal deaths worldwide has decreased, the proportion occurring in sub-Saharan Africa increased from 23% in 1980 to 52% in 2008 (Hogan et al. 2010). In addition, maternal mortality rates (MMRs) are substantially higher in sub-Saharan Africa than in other regions—all countries in this region had an MMR higher than 280 deaths per 100,000 live births in 2008 (Hogan et al. 2010).

Figure 1. Most African Countries Unable to Meet MDG 4 and 5



Source: Lozano et al. 2011. *The Lancet*.

Increasing the availability and quality of EONC services is one of the evidence-based global strategies for reducing maternal and neonatal mortality. The term EONC encompasses the evidence-based care that all pregnant women should receive, regardless of where they deliver (**Table 1**). EONC also includes emergency obstetric and newborn care (EmONC). For every 500,000 population, it is recommended there be a minimum of four Basic EmONC (BEmONC) facilities and one Comprehensive EmONC (CEmONC) facility (**Table 2**).

Table 1. Defining Essential Obstetric and Newborn Care (EONC)

Level of Care	Components of Essential Obstetric and Newborn Care*
All Levels of the Health System (home-based care, rural health centers, district hospitals and referral centers)	<ol style="list-style-type: none"> 1. Respectful care for women and their families 2. Infection prevention practices 3. Use of the partograph for clinical decision-making 4. Ambulation during labor; food and fluid intake as desired by the mother 5. Presence of a companion during labor and birth 6. Position of choice for labor and birth 7. Restricted use of episiotomy 8. Active management of the third stage of labor 9. Immediate newborn care (i.e., delayed cord clamping/cutting, clean cord care, drying and warming, immediate and exclusive breastfeeding)
*Evidence-based care that all women should receive to maintain normal labor and birth, and to prevent complications such as: maternal sepsis; obstructed labor; postpartum hemorrhage; and newborn asphyxia, hypothermia and sepsis.	

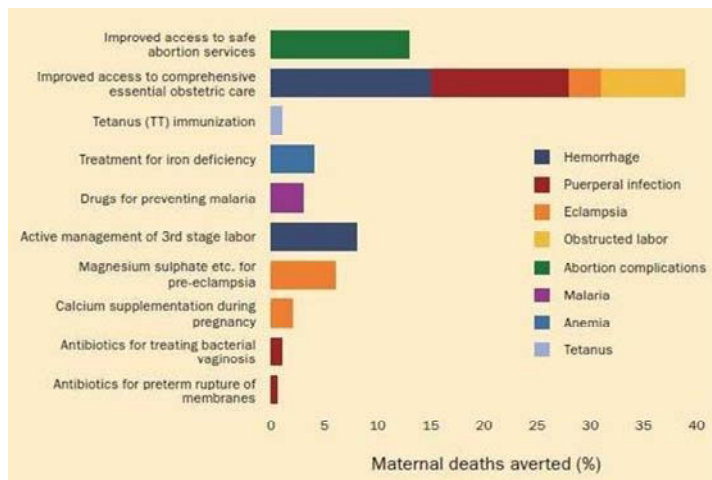
Table 2. Defining “Signal Functions” of Basic and Comprehensive Emergency Obstetric and Newborn Care (EmONC)

Level of Care	Signal EmONC Functions
Health Centers	Basic Emergency Obstetric and Newborn Care (BEmONC) <ol style="list-style-type: none"> 1. Antibiotics 2. Anticonvulsants 3. Uterotonics 4. Manual removal of the placenta 5. Assisted vaginal delivery 6. Removal of retained products 7. Newborn resuscitation
Referral Facilities (Hospitals)	Comprehensive Emergency Obstetric and Newborn Care (CEmONC) Basic EmONC plus: <ol style="list-style-type: none"> 1. Cesarean sections 2. Blood transfusion
Note: Previously, BEmONC was defined as six signal functions—newborn resuscitation has been added.	

Health systems in developing countries are being strengthened to provide both BEmONC and CEmONC in sufficient numbers of facilities in order to improve access to skilled care. As depicted in Figure 2, 74% of maternal deaths could be averted if all women had access to services for managing complications of pregnancy and childbirth, especially EONC. Findings from needs assessments using the United Nations (UN) Process Indicators for Emergency Obstetric Services have shown (Freedman et al. 2007):

- **Met need for emergency obstetric care is low.** National needs assessments in nine countries in sub-Saharan Africa demonstrated that met need was 28% on average, suggesting that too many women in these countries are not receiving treatment for their obstetric complications.
- **Cesarean delivery rates in surveyed African and Asian countries were less than 3% and, therefore, below the UN recommended range of 5–15%.** Further, 33 of the 51 Countdown to 2012 countries with data since 2000 had rural cesarean section rates below 5%, and four—Burkina Faso, Chad, Ethiopia and Niger—had rural rates below 1% (Countdown to 2015 2010). Cesarean section coverage rates below 5% signal a lack of access to EmONC, human resources issues and other health system challenges.

Figure 2. Universal Access to EmONC Could Reduce Maternal Deaths by 74%



Source: UN Millennium Project. 2005. *Who's Got the Power? Transforming Health Systems for Women and Children*.

Access to EONC in Africa is particularly challenging, as evidenced by only modest improvements in maternal and neonatal mortality over the past 20 years. Universal access to EONC in Africa still needs to overcome a number of challenging barriers: lack of national commitment and financial support; poorly functioning health systems; weak referral systems, especially during obstetric and neonatal emergencies; poor logistics for drugs, family planning commodities and equipment; and weak national human resources development and management (WHO 2004).

STEP 1: ADVOCATE WITH EVIDENCE FOR ESSENTIAL OBSTETRIC AND NEWBORN CARE

- Utilize available resources and data.** Global and country-level commitments to the MDGs have generated attention to maternal and neonatal mortality, which has resulted in a large number of resources to address it. The general consensus is that the key interventions to reduce maternal mortality are family planning, skilled care for all deliveries and access to emergency obstetric care for all women with life-threatening complications (Freedman et al. 2007). Available data have been analyzed by Women Deliver, the White Ribbon Alliance and the Countdown to 2015 Initiative, to be more easily digested by stakeholders and policymakers.
- Apply current research and evidence.** Much is known about the causes of maternal, perinatal and neonatal mortality, and which interventions are most effective in addressing them. *The Lancet* has published several series to aggregate evidence and focus attention on both causes and solutions. For example, the 2006 Maternal Survival series recommended:
 - Focus on the intrapartum period, as this period is when most maternal deaths occur.
 - Provide all women with deliveries in health centers by health providers who have basic midwifery skills, with referrals available for CEmONC when needed.
 - Improve women's access to family planning and prevent or manage abortion-related complications.
 - Increase coverage for the excluded and rural poor.
- Improve rates of skilled attendance at birth and cesarean sections.** Increasing both skilled birth attendance rates and cesarean

Step 1: Resources

AMDD. 2010. *Emergency Obstetric Care Women Deliver. Focus on 5*

WHO. 2012. *Accountability for Maternal, Newborn and Child Survival: An Update on Progress in Priority Countries*

UN Millennium Project. 2005. *Who's Got the Power? Transforming Health Systems for Women and Children*

WHO. 2005. *Making Every Mother Count: World Health Report*

2006. *The Lancet Maternal Survival Series Executive Summary*

2005. *The Lancet Neonatal Survival Series*

2011. *The Lancet Stillbirths Series Executive Summary*

MCHIP. 2012. *EONC Annotated Bibliography*

MCHIP. 2011. *Africa Regional Meeting Report: Interventions for Impact in EONC*

MCHIP. 2011. *Better Intrapartum Practices to Reduce Newborn Infection*

MCHIP. 2011. *Improved Labor Care to Reduce Intrapartum-Related Newborn Deaths*

MCHIP. *Postpartum Hemorrhage (PPH) e-Toolkit*, K4Health.org

MCHIP. *Pre-eclampsia/Eclampsia (PE/E) e-Toolkit*, K4Health.org

Step 1: Country-Specific Resources

WHO. 2012. *Countdown to 2015: 2012 Country Profiles*

WHO/AFRO. *Making Pregnancy Safer Country Profiles*

MEASURE. *Demographic and Health Surveys, Country List*

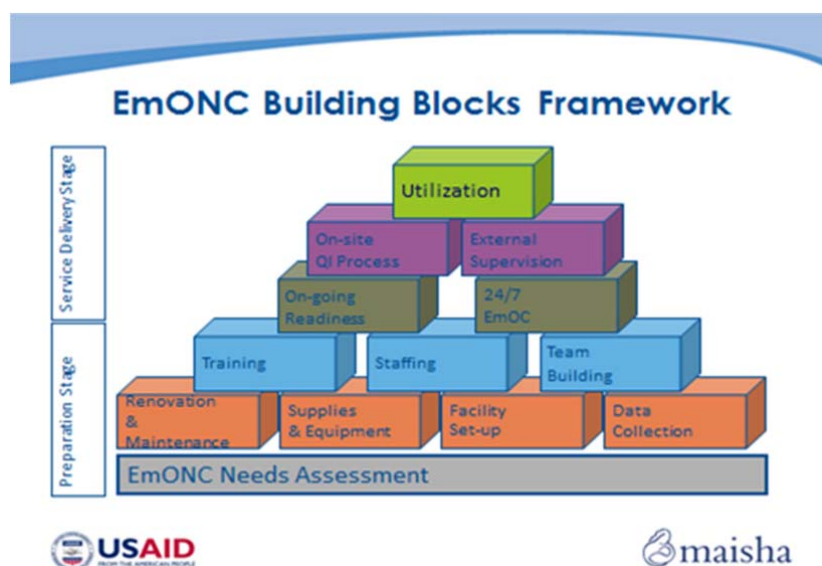
sections rates can cause MMRs to decrease. Analysis from the World Health Organization (WHO) national surveys from 188 countries, however, found that coverage rates need to be at least 40% for skilled delivery attendance and about 10% for safe cesarean sections to substantially reduce both maternal mortality and stillbirth (McClure, Goldenberg, Bann 2007). Interestingly, in countries with mid to high levels of maternal mortality, there is almost no correlation between MMRs and skilled attendance at delivery, suggesting quality of care may be an issue (**Step 4**) (Paxton et al. 2005).

- **Establish and sustain sufficient numbers and quality of BE-mONC and CEmONC services.** Achieving this aim essentially requires a functioning health system, which is still a challenge for many developing countries. Most countries have an adequate number of comprehensive facilities for emergency obstetric care, but very few basic facilities per 500,000 population (Freedman et al. 2007). Advocacy efforts need to encourage policymakers and stakeholders to develop phased strategies and build the capacity to monitor and evaluate their progress. One short-term strategy is to focus efforts on addressing the major causes of maternal and neonatal mortality—especially postpartum hemorrhage and eclampsia—until health systems are sufficiently strengthened to equitably deliver EONC.
- **Secure long-term commitments of sufficient resources to implement plans.** An analysis of 2006 international development assistance concluded that global levels of annual funding for maternal, newborn and child health are inadequate to reach the MDG targets (excluding the larger system-strengthening requirements) (Powell-Jackson et al. 2006). While Africa as a region received the largest total percentage of aid, countries with the greatest need, as determined by health indicators, did not receive higher levels of funding per child. In this context of limited funding, advocacy is crucial to ensure that funding is secured and maternal health programs prioritized. EONC, which costs just 24% of the WHO Mother-Baby Package, is cost-effective and can prevent about half of maternal deaths (Kongnyuy, Hofman, van den Broek 2009).
- **Engage and mobilize professional associations of obstetricians/gynecologists, midwives, pediatricians and anesthesiologists.** Professional associations are effective in developing national evidence-based standards, supporting quality improvement efforts, conducting training and dialoguing with policymakers as advocates (Moyo, Liljestrand, FIGO 2007). Professional associations can also be powerful in promoting task-shifting to address inequity of EONC.

STEP 2: CREATE AN ENABLING POLICY ENVIRONMENT FOR ESSENTIAL OBSTETRIC AND NEWBORN CARE

- **Conduct needs assessments.** Needs assessments are critical to the development of practical implementation strategies that are based on evidence, adapted to the local context, and address supply, demand and equity issues. A number of tools and approaches exist to conduct needs assessments and identify priorities (**Step 5**). The Averting Maternal Death and Disability (AMDD) Building Blocks Framework for EmONC helps providers, managers and policymakers unpack larger systems issues into smaller, actionable areas (**Figure 3**). Hundreds of facilities have used this approach to double the met need for EmONC and halve case fatality rates (Freedman et al. 2007).

Figure 3. Building Blocks Framework for EmONC



Source: AMDD

- Map projects linked with health indicators to prioritize inputs for EONC.** Mapping is useful to measure the UN process indicator for geographic distribution of EmONC facilities per 500,000 population, especially if both public- and private-sector facilities are included. Maps also help visualize where project inputs are focused to identify overlaps and gaps. For example, project mapping of interventions and geographic areas in Burkina Faso identified major gaps in investment in EmONC: only two of the 20 programs were designed to improve the availability of CEmONC and only two comprehensively addressed all components of skilled attendance at delivery (Hounton et al. 2005). The mapping also illustrated under-served districts. Further, maps within projects and districts can be used to identify issues of inequity and uneven coverage of poor or marginalized groups to improve access. Similar to findings from Bangladesh, a study from rural Guinea-Bissau found that the distance to a hospital was one of the strongest predictors of maternal mortality—and more than 90% of women in the study lived more than 5 Km (3 miles) from a hospital (Paxton et al. 2005)
- Strengthen management of health teams and systems.** The policy environment needs to strengthen management capacity of facility and district-level teams and systems. Experience has found that the sustainability of EONC requires building the capacity of district health management teams for planning, management and monitoring (Kongnyuy, Hofman, den Broek 2009). Efforts to strengthen capacity need to focus on systems, such as networking services, staff, facilities and structures with processes (e.g., supervision, budgeting and decision-making) (Freedman et al. 2007). Further, systemic issues need attention at the central level, i.e., policies need to address evidence-based clinical care, and strengthen human resources management, logistics and supervision systems.
- Focus on human resources.** Policies need to tackle the most challenging area: human resources. Developing and maintaining an adequate health workforce requires planning, recruitment, education, deployment and support of health workers. Most developing countries with high levels of maternal and neonatal mortality face a critical shortage of health care workers due to migration, preference for the private sector and, in some places, HIV/AIDS (Mathai 2007). Often,

Step 2: Resources

WHO, ICM, FIGO. 2004. *Making Pregnancy Safer: The Critical Role of the Skilled Birth Attendant*

WHO/AFRO. 2006. *Consensus on Essential Competencies of Skilled Attendants in the African Region*

ACCESS. 2008. *Achieving Results in Improving Maternal and Newborn Care: Building the Capacity and Use of Skilled Birth Attendants*

Step 2: Resources for Scale-Up

CORE Group. 2005. *Background Paper on "Scaling Up" Maternal, Newborn and Child Health Services Health Communication Partnership*. 2007. *Taking Community Empowerment to Scale*

2003. *Scaling up Practices, Tools and Approaches in the Maternal and Neonatal Health Program*

WHO. 2006. *Scaling Up Health Service Innovations: A Framework for Action*

WHO/AFRO. 2004. *Road Map for Accelerating the Attainment of the Millennium Development Goals Relating to Maternal and Newborn Health in Africa* 2007. *The Zimbabwe National Maternal and Neonatal Health Road Map 2007–2015*

WHO. 2011. *Essential Interventions, Commodities and Guidelines for Reproductive, Maternal, Newborn and Child Health: Report, Summary, Poster Presentation*

MCHIP. 2012. *Intrapartum and Emergency Obstetric Care Standards*

equitable distribution of skilled providers is a formidable barrier to delivering EONC to all pregnant women as a result of the low density of health care workers in most rural areas. Experienced staff are difficult to retain because of limited opportunities for career progression and salary increases (Freedman et al. 2007). Availability of EmONC 24 hours a day is limited by availability of staff at night and on weekends, and in some cases, by political insecurity (Dogba and Fournier 2009).

- Eliminate financial barriers.** Policies can remove financial barriers to accessing and improving the quality of care. Health financing schemes have been used in developing countries to address both health worker performance and equity. Although maternal health fees are not a significant revenue source for governments, they can be considerable financial barriers to EONC for the poorest women. Evidence from three African countries from 2003 and 2006 found that more than 90% of women faced out-of-pocket costs for facility-based maternity care, with complicated delivery costing between 10% and 35% of the average monthly income (Perkins et al. 2009). Some countries, such as Ghana, Tanzania and Sierra Leone, have removed user fees to reduce financial barriers to care, with notable success reducing poor-rich gaps in service utilization and outcomes (Freedman et al. 2007). Experience has shown the importance of monitoring coverage, quality and equity together. For example, in Ghana when user fees were removed, the poorest women saved only 14% in out-of-pocket expenses for care, compared with 22% for the richest (Freedman et al. 2007).
- Ensure that policies define, monitor and measure progress on scale-up of EONC services.** Countries need to define for themselves what “scale-up” means in the context of EONC, and ensure that current programs and strategies are developed and implemented to achieve scale.

STEP 3: TRAIN PROVIDERS TO DELIVER ESSENTIAL OBSTETRIC AND NEWBORN CARE

- Minimize barriers to expanding EONC.** Training, deploying and retaining sufficient numbers of skilled providers is a major bottleneck to expanding EONC in many countries with high MMRs. The World Health Report 2005 estimated that 334,000 nurse-midwives, 140,000 midwives or nurses, and 27,000 doctors and technicians must be trained or retrained over the next 10 years (Dogba and Fournier 2009). Although there have been increases in skilled care worldwide, rates of professional coverage at birth have stagnated since the 1990s in rural areas of sub-Saharan Africa, South Asia and Southeast Asia (Koblinsky et al. 2006). Training sufficient numbers of skilled providers must be coordinated with policies for human resources management in order to ensure equitable distribution of EONC. The lack of skilled providers at health facilities creates the perception of poor quality of care and causes low rates of utilization, as reported in Tanzania (Dogba and Fournier 2009).
- Increase access to EONC services with task-shifting.** Task-shifting allows skilled providers to reach women who would otherwise be without access to EONC. Studies have shown that well-trained nurses and midwives can provide BEmONC (Rosenfield, Minn, Freedman 2007). Task-shifting to expand access to emergency obstetric surgery has been successful in the African context. EONC-related task-shifting to non-physician clinicians (NPCs) has been achieved in 25 of 47 sub-Saharan countries. The Ministry of Health in Mozambique has trained non-physicians as surgical technicians, who now perform most emergency obstetric surgeries (including cesarean

deliveries) in rural hospitals. Evidence from Ethiopia illustrates that NPCs perform a significant proportion of emergency obstetric procedures, and post-operative outcomes are similar to those of doctors (Gessesew et al. 2011). NPCs can be developed through shortened training courses and at lower costs. In addition, they can be recruited and/or deployed successfully in rural areas—demonstrating substantial roles in EONC for NPCs in sub-Saharan African countries (Mullan and Frehywot 2007).

- **Employ evidence-based training to update clinical practices.** To save resources, improve quality of care and save lives, training needs to be evidence-based to update clinical practices. Developing countries are investing large amounts of resources in refresher training at various levels of health care. Investment may not result in improved health services and outcomes if training is not based on current clinical evidence and competency-based training approaches. There are a number of available training packages that build on current, international maternal and newborn care standards to train nurses and midwives in BEmONC, doctors in CEmONC and non-specialists in anesthesia for obstetric emergencies. Local adaptation is simple. Further investment can also be made in improving the clinical training sites to ensure that providers complete the training fully skilled and confident.
- **Align actual provider performance in EmONC with national policies, regulation, training and district expectations.** Often, cadres that are expected to provide EmONC are not doing so, due to an ambiguous scope of practice and a lack of an enabling environment at health facilities. For example, registered nurse-midwives are expected to provide BEmONC, but only 9% in Malawi and 14% in Tanzania were performing all seven signal functions (Lobis et al. 2011). While training is necessary to ensure skilled providers, it needs to be consistent with national service delivery policies, deployment plans and clear scopes of practice in regulations.
- **Utilize preservice and inservice training systems to ensure competency in essential and lifesaving skills.** Skilled health care providers are needed in sufficient numbers at BEmONC and CEmONC facilities, especially to manage life-threatening complications and ultimately impact maternal mortality. A review of global EONC training activities found that inservice training is most effective when it is focused on hands-on experience and competency-based, whereas preservice education tended to remain knowledge-based (Penny and Murray 2000). “Studies have shown that scale up for results often requires fundamental changes in both inservice and preservice curricula to emphasize competency (rather than simply knowledge) in a core set of essential skills and to ensure that training fits the infrastructural realities of high-mortality, low-resource settings (Freedman et al. 2007).” Inservice training for EONC, however, is often hindered by poor preservice education and poor application of learning in the workplace, due in part to poorly equipped facilities and a lack of evidence-based clinical protocols. Incorporation of core skills with preservice education for nurses, midwives, doctors and anesthesia providers can ultimately reduce the inservice training burden and expense. For example, a USAID assessment of midwifery preservice training activities concluded: “Particular benefit was derived when BEmONC skills could be incorporated with the midwifery preservice curriculum. These basic skills need to be in the repertoire of midwives when they enter the workforce. Teaching these skills in preservice will, over time, reduce the burden of inservice training (Global Health 2010).” Strengthening preservice education requires a

Step 3: Post-training Follow-up

MNH Program. 2004. *Guidelines for Assessment of Skilled Providers after Training in Maternal and Newborn Healthcare*

AMDD. 2002. *Follow-up of Healthcare Providers Trained in Anesthesia for Emergency Obstetric Care*

2003. *EmOC for Doctors and Midwives*

AMDD/MNH Program. 2003. *Anesthesia for EmOC for Doctors and Midwives*

Step 3: Reference Manuals

Jhpiego. 2004. *Basic Maternal and Newborn Care (BMNC): A Guide for Skilled Providers*

WHO. 2003. *Managing Complications in Pregnancy and Childbirth—A Guide for Midwives and Doctors*

WHO. 2003. *Managing Newborn Problems*

EngenderHealth. 2003. *Infection Prevention Practices in Emergency Obstetric Care*

WHO. 2000. *Anesthesia at the District Hospital*

Step 3: Resources

MCHIP Preservice Education e-Toolkit, K4Health.org

Preservice Education e-Toolkit, K4Health.org

UNFPA. 2010. *State of the World's Midwives Report*

International Confederation of Midwives. 2010. *Global Standards, Competencies and Tools*

long-term investment that has not been prioritized in most countries' short-term strategies to achieve the MDGs by 2015.

- **Work to sustain training and deployment of health teams.** Training and deploying teams is practical and effective, but can be difficult to sustain. The concept of CEmONC teams has been tested and proven in a number of settings. When focusing on rapidly increasing BEmONC coverage, it is recommended that teams of midwives and midwife assistants working in facilities—versus deploying solo health workers for home deliveries—could increase coverage of maternity care by up to 40% by 2015 (Koblinsky et al. 2006). CEmONC teams have also been trained and tested as a possible strategy for district hospitals. For example, teams of assistant medical officers (or NPCs), clinical officers and nurse-midwives were trained for three months, and then effectively provided CEmONC (including anesthesia) in remote health centers in Tanzania (Nyamtema et al. 2011). The Ministry of Health in Senegal trained 11 district emergency obstetric surgery teams (anesthetist, general practitioner and surgical assistant), and found during its evaluation that unmet need remained high and only six teams were still functioning after six years. Supporting providers post-training when they return to their workplace and linking training to broader service delivery improvements are important lessons learned.

STEP 4: IMPROVE QUALITY OF CARE

- **Continually improve and monitor quality of care.** Improving and measuring quality of care is a continual process that engages all staff at the facility—and often the community it serves—to identify gaps, create actionable responses and regularly re-assess progress. Experience demonstrates that using performance and quality improvement approaches can: improve skilled attendance; generate political support for improvements and scale-up; strengthen community awareness and mobilization; promote sustainability; and foster collaboration. There are a number of approaches to improving the quality of care, including COPE® (client-oriented, provider-efficient services) developed by EngenderHealth, Standards-Based Management and Recognition (SBM-R) developed by Jhpiego, and Partner Defined Quality (PDQ) developed by Save the Children. Also, criteria-based audits, verbal autopsies and appreciative inquiry are effective in addressing quality and functionality in facilities.
- **Improve access to EmONC and the quality of care provided.** Improving access to EmONC is not enough to prevent deaths if the quality of care is poor. A substantial proportion of maternal deaths take place in hospitals (Ronsman and Graham 2006). A study in one district of Mali, concluded that poor quality of care will result in higher than expected MMRs in situations where maternity services (skilled attendants at delivery and EmONC) are available (Paxton et al. 2005). Another study from the Dominican Republic, where 97% of women deliver in health facilities, concluded that quality of care limits further reductions in MMRs (<100) (Paxton et al. 2005). A focus, therefore, on improving the quality of care at EONC facilities—beyond upgrading infrastructure and training providers—is critical in the broader context of safe motherhood programs. As one study in northern Tanzania concluded, “It is neither the mothers’ ignorance nor their lack of ability to get to a facility that is the main barrier to receiving quality care when needed, but rather the lack of quality care at the facility (Olsen, Ndeki, Norheim 2004).”
- **Ensure that women receive high-quality care.** A literature review of EONC quality found that women were generally dissatisfied

Step 4: Quality Improvement

MNH Program. 2004. *Site Assessment and Strengthening for MNH Programs*

Jhpiego. 2005. *Standard-Based Management and Recognition: A Field Guide*

EngenderHealth, AMDD. 2003. *Quality Improvement for EmOC*

MNH Program. 2003. *Using Performance and Quality Improvement to Strengthen Skilled Attendance*

Ministry of Health and Social Welfare, Tanzania. 2011. *Quality Improvement Standards for Hospitals*

Ministry of Health and Social Welfare, Tanzania. 2011

Quality Improvement Standards for Health Centers and Dispensaries

IBP Consortium. 2007. *A Guide for Fostering Change to Scale Up Effective Health Services*

AMDD. 2002. *Improving EmOC through Criterion-Based Audit*

Step 4: Job Aids

MNH Program. 2007. *Emergency Obstetric Care: A Quick Reference Guide for Front-line Providers*

WHO. 2006. *Pregnancy, Childbirth, Postpartum and Newborn Care—A Guide for Essential Practice*

GOAL Uganda. *Comfort in Labor Drawings*

WHO. 2003. *Obstetric Safety Protocols*

with the quality of care—experiencing discriminating staff attitudes; lack of respect for traditional beliefs and practices; clinical procedures without explanation; and physical violence and insults, especially in the public hospitals (Dogba and Fournier 2009). The poor quality of care experienced or perceived causes a delay in seeking EONC services. Poor quality within health facilities can also result in poor maternal, perinatal or neonatal outcomes. Efforts to promote humanization of childbirth linked with quality improvement approaches and community involvement in health facility management committees can help increase satisfaction with and use of services.

- **Provide necessary infrastructure and equipment for EONC services.** Infrastructure, supplies and equipment for BEmONC are often insufficient. AMDD assessments in eight countries found that BEmONC facilities were deficient, while CEmONC sites usually met UN standards. BEmONC sites were most frequently unable to conduct assisted vaginal delivery and perform manual removal of the placenta. This finding is consistent with data on EONC provider performance from Malawi and Tanzania, where providers were also less likely to be performing these two signal functions (Lobis et al. 2011).
- **Conduct quality of care assessments.** Quality of care assessments help identify how EONC services are currently functioning to help governments and development partners create actionable plans. As previously discussed, needs assessment are important at the policy level and for measuring quality of care. Both MCHIP and AMDD have developed tools to assess quality of care, and the Demographic and Health Surveys often conduct a Service Provision Assessment that may include EONC (Step 5).

Step 4: Respectful Maternity Care

White Ribbon Alliance. 2011. *Respectful Maternity Care: The Universal Rights of Childbearing Women*

Center for Reproductive Rights. 2007.

Failure to Deliver: Violations of Women's Human Rights in Kenyan Health Facilities

STEP 5: MONITOR AND EVALUATE RESULTS

- **Apply the UN Process Indicators for EmOC during assessment.** UN Process Indicators for EmOC are the standard for EmONC. This set of six indicators measures “if there are enough facilities providing lifesaving procedures; how many women are using the facilities; if women with complications are using the facilities, how many critical lifesaving procedures are performed; and if the quality of care is adequate (Paxton, Bailey, Lobis 2006).” (Table 3.)

Table 3. UN Process Indicators for EmOC

Indicator	Acceptable Level
Availability of EmOC: basic and comprehensive care facilities	There are at least five EmOC facilities (including at least one comprehensive facility) for every 500,000 population.
Geographical distribution of EmOC facilities	All subnational areas have at least five EmOC facilities (including at least one comprehensive facility) for every 500,000 population.
Proportion of all births in EmOC facilities	(Minimum acceptable level to be set locally.)
Met need for EmOC: proportion of women with major direct obstetric complications who are treated in such facilities	100% of women estimated to have major direct obstetric complications are treated in EmOC facilities.
Cesarean sections as a proportion of all births	The estimated proportion of births by cesarean section in the population is not less than 5% or more than 15%.
Direct obstetric case fatality rates	The case fatality rate among women with direct obstetric complications in EmOC facilities is less than 1%.
Source: WHO. 2009. <i>Monitoring emergency obstetric care: A handbook</i> .	

- **Use additional, complementary indicators as well.** Additional indicators are available to specifically complement UN process indicators. While the UN process indicators are well-established and useful as a tool across facilities and countries, there are limitations that can be addressed with complementary indicators. For example, since UN process indicators define an EmOC facility as performing each of the six signal functions at least once within the past three months, they may under-estimate the availability of EmOC services for facilities with few complicated deliveries. One suggestion is that rather than designating these facilities as “non-EmOC,” they should be assessed for equipment, medications and at least one trained staff for signal functions; allowing facilities to be coded as basic (B) or comprehensive (C) minus the signal functions not being provided. A study in Zambia assessed the availability of basic EmOC functions at health centers in one province using this approach (Levine et al. 2008). Only 15% of health centers assessed were providing four or more signal functions, and none were providing all. This system demonstrates the contributions of health facilities to EONC and can also measure changes over time.
- **Consider a third indicator for MDG 5.** MDGs are not measuring availability of EmONC; however, governments and country programs should consider this as the third MDG 5 indicator. MMR and skilled attendance at birth are the current indicators for MDG 5—neither, however, specifically helps countries to measure improvements in the health system that delivers lifesaving care and directly reduces maternal mortality. Countries should consider adding the indicator of availability of EmONC, which can reflect changes over short periods of time. Increases by two to four times were seen in Peru, Mozambique and India in three years when programs focused on upgrading existing facilities (Bailey et al. 2006).
- **Administer needs assessments as effective monitoring and evaluation (M&E) tools.** Needs assessments have been described as an important policy tool (**Step 2**), but they can also monitor and evaluate program and service-delivery progress. Ideally, needs assessments should include of a random sample of all EONC facilities, especially the for-profit segment of the private sector (Paxton, Bailey, Lobis 2006).
- **Include community-based verbal autopsies and facility-based maternal death reviews as monitoring tools.** Community-based verbal autopsies and facility-based maternal death reviews are useful to improve access to and quality of maternal and newborn care. These tools require a confidential, non-threatening environment for analysis of adverse maternal outcomes. Other monitoring tools, such as those focused on maternal morbidity and maternal near-miss cases, can be integrated with existing reviews of facility adverse outcomes or through periodic audits.
- **Focus M&E systems to consistently report district-level achievements without overwhelming reporting systems.** “The challenge is to define a small number of indicators that will not overwhelm fragile reporting systems, but that capture district-level program inputs and management appropriately, which is necessary for both health system strengthening and maternal health specifically (Freedman et al. 2007).”

Step 5: M&E Tools

WHO. 2004. *Beyond the Numbers: Reviewing Maternal Deaths and Complications to Make Pregnancy Safer*

WHO. 2011. *Evaluating the Quality of Care for Severe Pregnancy Complications: The WHO Near-miss Approach for Maternal Health*

WHO. 2009. *Monitoring Emergency Obstetric Care*

AMDD. 2003. *Using the UN Process Indicators for Emergency Obstetric Services: Questions and Answers*

AMDD. 2010. *EmONC Needs Assessment: Introduction to Materials, Data Collectors' Manual, Data Collection Modules, Facilitation Guide*

MCHIP. 2011. *Quality of Care for Prevention and Management of Common Maternal and Newborn Complications in Health Facilities*

REFERENCES

- Bailey P, Paxton A, Lobis S, Fry D. 2006. **Measuring progress towards the MDG for maternal health: including a measure of the health system's capacity to treat obstetric complications.** *Int J Gynaecol Obstet*, 93(3):292–9.
- Countdown to 2015. 2010. **Countdown to 2015 Decade Report (2000–2010).**
- Dogba M and Fournier P. 2009. **Human resources and the quality of emergency obstetric care in developing countries: a systematic review of the literature.** *Hum Resour Health*, 6;7:7.
- Freedman LP, Graham WJ, Brazier E, Smith JM, Ensor T, Fauveau V, Themmen E, Currie S, Agarwal K. 2007. **Practical lessons from global safe motherhood initiatives: time for a new focus on implementation.** *The Lancet*, 370 (9595):1,383–91.
- Gessesew A, Barnabas GA, Prata N, Weidert K. 2011. **Task shifting and sharing in Tigray, Ethiopia, to achieve comprehensive emergency obstetric care.** *Int J Gynaecol Obstet*; 113(1):28–31.
- Global Health Technical Assistance Project. 2010. **Assessment of Midwifery Pre-Service Training Activities of the Access Project.** Global Health Technical Assistance Project.
- Hogan MC, Foreman KJ, Naghavi M, Ahn SY, Wang M, Makela SM, Lopez AD, Lozano R, Murray C. 2010. **Maternal mortality for 181 countries, 1980–2008: A systematic analysis of progress towards Millennium Development Goal 5.** *The Lancet*; 375(9726):1,609–1,623. DOI: 10.1016/S0140-6736(10)60518-1.
- Hounton SH, Meda N, Hussein J, Sombie I, Conombo G, Graham WJ. 2005. **Describing safe motherhood programs for priority setting: the case of Burkina Faso.** *Int J Gynaecol Obstet*; 91(1):97–104.
- Koblinsky M, Matthews Z, Hussein J, Mavalankar D, Mridha MK, Anwar I, Achadi E, Adjei S, Padmanabhan P, Marchal B, De Brouwere V, van Lerberghe W. 2006. **Lancet Maternal Survival Series steering group. Going to scale with professional skilled care.** *The Lancet*; 368(9544):1,377–86.
- Kongnyuy EJ, Hofman JJ, van den Broek N. 2009. **Ensuring effective Essential Obstetric Care in resource-poor settings.** *BJOG*; 116, Suppl 1:41–7.
- Levine AC, Marsh RH, Nelson SW, Tyer-Viola L, Burke TF. 2008. **Measuring access to emergency obstetric care in rural Zambia.** *Int J Emerg Med*; (2):113–9.
- Lobis S, Mbaruku G, Kamwendo F, McAuliffe E, Austin J, de Pinho H. 2011. **Expected to deliver: Alignment of regulation, training, and actual performance of emergency obstetric care providers in Malawi and Tanzania.** *Int J Gynaecol Obstet*; 115(3):322–7.
- Lozano et al. 2011. **Progress towards Millennium Development Goals 4 and 5 on maternal and child mortality: An updated systematic analysis.** *The Lancet*; 378(9797):1,139–1,165.
- Mathai M. 2007. **Working with communities, governments and academic institutions to make pregnancy safer.** *Best Practice and Research Clinical Obstetrics and Gynaecology*.
- McClure EM, Goldenberg RL, Bann CM. 2007. **Maternal mortality, stillbirth and measures of obstetric care in developing and developed countries.** *Int J Gynaecol Obstet*; 96(2):139–46.
- Moyo NT, Liljestrand J; International Federation of Gynecology and Obstetrics (FIGO). 2007. **Emergency obstetric care: Impact on emerging issues.** *Int J Gynaecol Obstet*; 98(2):175–7.

- Mullan F, Frehywot S. 2007. **Non-physician clinicians in 47 sub-Saharan African countries.** *The Lancet*; 370 (9605):2,158–63.
- Nyamtema AS, Pemba SK, Mbaruku G, Rutasha FD, van Roosmalen J. 2011. **Tanzanian lessons in using non-physician clinicians to scale up comprehensive emergency obstetric care in remote and rural areas.** *Hum Resour Health*; (9):28.
- Olsen ØE, Ndeki S, Norheim OF. 2004. **Complicated deliveries, critical care and quality in emergency obstetric care in Northern Tanzania.** *Int J Gynaecol Obstet*; 87(1):98–108.
- Paxton A, Bailey P, Lobis S. 2006. **The United Nations Process Indicators for Emergency Obstetric Care: Reflections based on a decade of experience.** *Int J Gynaecol Obstet*; (2):192–208.
- Paxton A, Maine D, Freedman L, Fry D, Lobis S. 2005. **The evidence for emergency obstetric care.** *Int J Gynaecol Obstet*; 88(2):181–93.
- Penny S, Murray SF. 2000. **Training initiatives for essential obstetric care in developing countries: A “state of the art” review.** *Health Policy Plan*; 15(4):386–93.
- Perkins M et al. 2009. **Out-of-pocket costs for facility-based maternity care in three African countries.** *Health Policy and Planning*; 24:289–300.
- Powell-Jackson T, Borghi J, Mueller D, Patouillard E, Mills A. 2006. **Countdown to 2015: Tracking donor assistance to maternal, newborn and child health.** *The Lancet*; 368(9541):1,077–1,087.
- Ronsmans C, Graham WJ, Lancet Maternal Survival Series Steering Group. 2006. **Maternal mortality: Who, When, Where, and Why.** *The Lancet*; 368 (9542):1,189–200.
- Rosenfield A, Min CJ, Freedman LP. 2007. **Making motherhood safe in developing countries.** *N Engl J Med*; 356(14):1,395–7.
- World Health Organization (WHO). 2004. **Road Map for Accelerating the Attainment of the MDGs Related to Maternal and Newborn Health in Africa.** WHO: Geneva.