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TECHNICAL REFERENCE MATERIALS

2014

Maternal and Newborn Care



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INTRODUCTION TO THE TECHNICAL REFERENCE MATERIALS

The Technical Reference Materials (TRMs), a product of the U.S. Agency for International Development, Bureau for Global Health, Office of Health, Infectious Disease, and Nutrition (USAID/GH/HIDN), are a series of guides to help program planners and implementers consider the many elements in a particular technical area of the Child Survival and Health Grants Program (CSHGP). These guides do not serve as an official policy for practice; rather, they are basic everyday summaries to be used as field reference documents. They also can be accessed in the form of electronic tool kits on the [Knowledge for Health](#) website.

The TRMs are organized in modules that correspond to the primary interventions and key strategies that are central to CSHGP. Each module covers the essential elements that need to be considered during implementation, provides resources for nongovernmental organizations (NGOs) and others implementing community-oriented programs to consult when planning interventions, and as examples of tools most commonly used among CSHGP grantees to collect baseline population-level data.

The TRM modules cover the following topics:

Technical Interventions

- Family Planning and Reproductive Health
- Immunization
- Malaria
- Maternal and Newborn Care
- Nutrition
- Pneumonia Case Management and Control of Diarrheal Disease

Cross-Cutting Strategies

- Social and Behavior Change
- Health System Strengthening
- Monitoring and Evaluation
- Quality Improvement

Technical specialists in the USAID collaborating agency community, CORE Group Working Groups, USAID technical staff, and community-oriented practitioners all contribute to updating the TRMs on an ongoing basis. The revision date for each TRM module is at the bottom of each page. The modules are living documents, and we depend on readers to tell us of the usefulness of the information, the need for additions or amendments, and general comments. This will help us keep the modules alive and responsive to your needs. Please share comments with MCHIP at info@mchipngo.net.

MCHIP is grateful for the many contributions and reviews by staff in the Offices of the Bureau for Global Health and many collaborating agencies, CORE Group working groups, and private voluntary organization (PVO) and NGO partners that use these guides and provide valuable insight on how to improve them. Contributor to this TRM include Mary Ellen Stanton, USAID; Ali Abdelmegeid, MCHIP; Gbaïke Ajayi, MCHIP; Kate Brickson, MCHIP; Sheena Currie, MCHIP; Goldy Mazia, MCHIP; Tanvi Monga, MCHIP; Melanie Morrow, MCHIP; GERALYN Sue Prullage, Kibogora Hospital in Rwanda and CORE Group; Jeff Smith, MCHIP; Alan Talens, World Renew and CORE Group; Kirsten Unfried, MCHIP; John Varallo, MCHIP; and Jennifer Yourkavitch, MCHIP.

ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
CA	Collaborating Agency
CHW	Community Health Worker
CSHGP	Child Survival and Health Grant Program
DHS	Demographic and Health Survey
EBF	Exclusive Breastfeeding
EmONC	Emergency Obstetric and Newborn Care
ENAP	Every Newborn: an action plan to end preventable deaths
EPCMD	Ending Preventable Child and Maternal Deaths
EPMM	Ending Preventable Maternal Mortality
FP	Family Planning
HFA	Health Facility Assessment
HIS	Health Information System
HIV	Human Immunodeficiency Virus
ITN	Insecticide-Treated Nets
KMC	Kangaroo Mother Care
KPC	Knowledge, Practice, and Coverage (Survey)
LAM	Lactational Amenorrhea Method
LBW	Low-Birth Weight
LiST	Lives Saved Tool
M&E	Monitoring and Evaluation
MCHIP	Maternal and Child Integrated Program
MNC	Maternal and Newborn Care
MNCH	Maternal, Newborn, and Child Health
MNH	Maternal and Newborn Health
MOH	Ministry of Health
NGO	Nongovernmental Organization
PE-E	Pre-Eclampsia or Eclampsia
PAC	Post-Abortion Care
PMTCT	Prevention of Mother-to-Child Transmission

PNC	Postnatal Care
PPH	Postpartum Hemorrhage
PVO	Private Voluntary Organization
SBA	Skilled Birth Attendant
STI	Sexually Transmitted Infection
TBA	Traditional Birth Attendant
TRM	Technical Reference Materials
USAID	United States Agency for International Development
WHO	World Health Organization

MATERNAL AND NEWBORN CARE TERMINOLOGY¹

Perinatal period begins at 22 completed weeks (154 days) of gestation and ends 7 completed days after birth.

Early neonatal period is the first 7 days of life.

Immediate postnatal period is the first 24 hours of life.

Late neonatal period is the 3 weeks of life after the early neonatal period (8–28 days).

Neonatal period is the first 28 days of life.

Postnatal care is care for the mother and newborn as a unit during the first 6-week period following birth.²

Infant applies to children between the ages of 1 and 12 months (1–11 months)

Caretaker is an individual who has primary responsibility for the care of a child. Usually, it is the child's mother, but it also could be his or her father, grandparent, older sibling, or other member of the community.

Maternal mortality is the death of a pregnant woman during her pregnancy or within 42 days of pregnancy termination, regardless of the duration of the pregnancy, from any cause related to the pregnancy or aggravated by it or its management, but it does not apply to death resulting from accidental or incidental causes.

OVERVIEW

A continuum of care across life stages, from home to health facility, and from prevention through treatment, is crucial to ensure a person's health. Maternal and newborn care (MNC) is a key component of that continuum. MNC benefits the health and well-being of not only the woman and her baby, whose health is closely linked to the mother's from conception through birth and beyond, but also to families and communities. Many women, however, do not have access to quality MNC information or services, and sometimes services are lacking all together.

Worldwide, maternal mortality remains unacceptably high, especially in poor countries. While the total number of maternal deaths decreased from 543,000 in 1990 to 287,000 in 2010, and the maternal mortality ratio decreased from 400 maternal deaths per 100,000 live births to 210 in 2010, wide variations persist between rich and poor countries. Every two minutes, a woman dies from complications related to pregnancy and childbirth—that means almost 800 deaths every day—more than a quarter of a million deaths every year worldwide, with the vast majority (99 percent) of these deaths occurring in the developing world.³ The majority of maternal deaths can be prevented if women have access to and use skilled care during pregnancy, childbirth, and the first month after delivery; quality family planning (FP) services; post-abortion care (PAC) services; and, where permissible, safe abortion services. Reducing the number of women dying in childbirth by three-quarters by 2015 is one of the Millennium Development Goals.

1 in 36: The risk of an African woman dying from a complication related to pregnancy or childbirth.⁴

1 in 4,300: The risk of a woman from an industrialized country dying from a complication related to pregnancy or childbirth.⁵

More than 80 percent of maternal deaths worldwide have five main causes: hemorrhage (excessive bleeding), unsafe abortion, pregnancy-induced hypertension disorders (eclampsia), sepsis (infections), and obstructed labor. The major direct causes of maternal death are postpartum hemorrhage (PPH) and pre-eclampsia or eclampsia (PE-E), which together account for more than 40% of maternal mortality. Maternal anemia, malaria, and HIV are also large contributors to maternal morbidity and mortality. For every death that occurs, an estimated 20 additional women suffer major complications of pregnancy.⁶

Poor maternal health and nutrition and inadequate maternal care directly affect perinatal, neonatal, and infant mortality rates. An estimated 3.1 million neonatal deaths occur annually; three-quarters of those deaths occur in the first week of life, with one-quarter to one-half dying within the first 24 hours.⁷ Preterm birth complications are the most common causes of newborn death and the second cause of deaths of children under 5 years of age in developing countries. Newborn infections and birth asphyxia are other common causes, and together with preterm birth complications they account for 80% of newborn mortality.⁸ Preterm and low-birth weight (LBW) babies need special care, including attention to feeding and keeping them warm. In endemic areas, malaria can contribute significantly to both LBW and maternal anemia.

Governments have a responsibility to ensure that every woman has access to quality maternal care, a skilled birth attendant to assist her and her baby at childbirth, and special care and referral services if serious problems arise for either of them. It is, however, difficult for many women

and babies to access quality care because of poverty, distance, insufficient information, inadequate services, or cultural practices. Governments and local authorities also have a responsibility to address these barriers to ensure that women receive the quality health care they need and that they and their newborns have a right to receive it.

Community-oriented programs with an MNC component implemented by nongovernmental and community-based organizations (CBOs) can play a substantial role. Community health workers (CHWs) and CBOs can provide women and their families with the education and counseling, and in some cases services that they need; CBOs and CHWs also can link community members to the health system.

USAID is committed to Ending Preventable Child and Maternal Deaths (EPCMD) and aims to save the lives of 15 million children and nearly 600,000 women by 2020. Please refer to the report [Acting on the Call: Ending Preventable Child and Maternal Deaths](#) for details. Specifics on USAID's strategy for working with global partners to End Preventable Maternal Mortality (EPMM) are further described in USAID's [Maternal Health Vision for Action](#), published in June 2014. For newborn health, USAID endorses the global action plan led by WHO and UNICEF, called [Every Newborn: an action plan to end preventable deaths](#) (ENAP).

Key Resources on Maternal and Newborn Care

- USAID, UNFPA and UNICEF, 2014. [Acting on the Call: ending preventable child and maternal deaths](#)
- USAID, 2014. [USAID Maternal Health Vision for Action](#)
- WHO, 2014. [Every Newborn: an action plan to end preventable deaths](#)
- WHO, 2000. [Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Doctors](#)
- WHO, 2003. [Managing Newborn Problems: A Guide for Doctors, Nurses and Midwives.](#)
- WHO, 2007. [Recommended Interventions for Improving Maternal and Newborn Health](#)
- WHO, 2007. [Standards for Maternal and Neonatal Care](#)
- WHO, 2003. [Pregnancy, Childbirth, Postpartum and Newborn Care: A Guide for Essential Practice](#)
- Partnership for Maternal and Child Health, 2011. [Essential Interventions, Commodities and Guidelines for Reproductive, Maternal, Newborn, and Child Health \(RMNCH\).](#)
- WHO, 2010. [Packages of Interventions for Family Planning, Safe Abortion Care, Maternal, Newborn and Child Health](#)
- The Lancet, 2014. [Every Newborn Series.](#)
- The Lancet, 2006. [Series on Maternal Survival](#)
- The Lancet, 2014. [Series on Midwifery](#)
- USAID, 2010. [Finding Common Ground: Harmonizing the Application of Different Quality Improvement Models in Maternal, Newborn, and Child Health Programs](#)
- ACCESS Project, 2005. [Household-to-Hospital Continuum of Maternal and Newborn Care](#)
- Hesperian, 1997, 2012. [Where Women Have No Doctor: A Health Guide for Women](#)
- Jhpiego, 2004. [Basic Maternal and Newborn Care: A Guide for Skilled Providers](#)
- White Ribbon Alliance for Safe Motherhood/India, 2002. [Saving Mothers' Lives: What Works—A Field Guide for Implementing Best Practices in Safe Motherhood](#)
- Policy Project, 2003. [What Works: A Policy and Program Guide to the Evidence on Family Planning, Safe Motherhood, and STI/HIV/AIDS Interventions](#)
- John Snow, Inc., 1994. [The Warming Project: A Participatory Approach to Improve Maternal and Neonatal Health: An Implementer's Manual](#)
- [WHO Reproductive Health Library](#)
- [MCHIP](#), 2014. USAID's Flagship Maternal and Child Health Integrated Program. The website provides access to clinical and community maternal, newborn, and women's health service information.

PRECONCEPTION AND INTERCONCEPTION CARE

The periods before becoming pregnant and between pregnancies provide many opportunities to set the foundation for a healthy pregnancy. Preconception care is the provision of preventive, promotive, and curative health services, plus social interventions before conception occurs.

Interconception care is the provision of preventive, promotive, and curative health services, plus social interventions between pregnancies.

Preconception and interconception care⁹ includes these services:

- Promoting healthy nutrition (including micronutrient supplementation), healthy lifestyles (exercise, avoiding tobacco or other drug use, limiting alcohol intake), and addressing environmental risks, such as indoor smoke or pollution
- Empowering and educating girls and women
- Ensuring a secure environment for girls and women and addressing violence against women
- Preventing, screening, and treating sexually transmitted infections (STIs), including HIV
- Supporting family planning
- Encouraging the delay of marriage

Family planning is a key component of safe motherhood and reproductive health services. It enables couples to determine whether, when, and how often to have children, and it is vital to safe motherhood and child health. Infant, child, and maternal mortality can be reduced by limiting births and preventing closely spaced births or births to very young or old mothers. More than 90% of women during their first year postpartum either want to delay the next pregnancy for at least two years or avoid future pregnancies altogether. An important strategy for reducing maternal mortality is to prevent unintended pregnancies because that reduces exposure to obstetric risks. Avoiding these unintended pregnancies could prevent an estimated 25% of maternal mortality.¹⁰ Spacing pregnancies reduces the risk of induced abortion, miscarriage, newborn death, stillbirth, preterm birth, low-birth weight, and maternal death. After a live birth, women should wait at least 24 months before attempting the next pregnancy to reduce the risk of adverse maternal, perinatal, and infant outcomes. After a miscarriage or induced abortion, women should wait at least six months before attempting the next pregnancy. Adolescents should delay first pregnancy until at least 18 years of age.¹¹ See the [Family Planning TRM](#) to learn more about the recommended birth-to-pregnancy interval, contraceptive methods, integration with other topics, community-base programming considerations, and key messages.

ANTENATAL CARE

Antenatal care (ANC), sometimes referred to as prenatal care, is associated with better outcomes for both the mother and infant when of sufficient quality. The international recommendation is to attend ANC at least four times.¹² Yet in developing countries, while 80% of women attended ANC at least once, only 56% of women had at least four ANC visits, according to UN data.¹³ Most countries provide routine ANC through government health facilities and outreach programs; however, use rates vary, depending on demand, availability, quality, and access.

ANC visits are opportunities to provide preventive care and health education, identify and treat illnesses, encourage skilled attendance at birth, and prepare the mother and her family for possible emergencies. The WHO ANC model, intended for women without evidence of pregnancy-related complications, medical conditions, or major health related risk factors, was studied in a randomized-control trial and suggests specific goals and activities for each of the four recommended ANC visits.^{14 15}

Key Resources for Antenatal Care

- WHO, 2010. [Essential Newborn Care Course](#)
- WHO, 2013. [WHO Policy Brief for the Implementation of Intermittent Preventive Treatment of Malaria in Pregnancy Using Sulfadoxine-Pyrimethamine](#)
- WHO, 2013. [Consensus Statement: Optimizing the Delivery of Malaria-in-Pregnancy Interventions](#)
- Mathai M, 2011. [Alternative versus Standard Packages of Antenatal Care for Low-risk Pregnancy: RHL Commentary](#)
- Jhpiego, 2004. [Maternal and Neonatal Health Program: Birth Preparedness and Complication Readiness Poster](#)
- Jhpiego, 2004. [Monitoring Birth Preparedness and Complication Readiness: Tools and Indicators for Maternal and Newborn Health](#)
- WHO, 2002. [WHO antenatal care randomized trial: manual for implementation of the new model.](#) (document WHO/RHR/01.30)
- WHO 2007. [1.6 Provision of effective antenatal care](#); in [Standards of Maternal and Neonatal Care. Group 1: General standards of care for healthy pregnancy and childbirth.](#)

Identification of Complications During Pregnancy

Approximately 15% of all women will experience potentially life-threatening pregnancy-related complications, many of which cannot be detected in advance through risk screening. Identification of actual complications, such as infection or hypertension, is more helpful than identification of risk, especially demographic risk (e.g., too young, too old, too many, too closely spaced.) *All women are at risk for complications and should receive basic care.* Women with a known high-risk condition, such as multiple gestations, breech presentation, or hypertension, should receive special care for their condition(s).

Health care providers should offer services for prevention, early detection, and management of pregnancy-related problems, starting in the first trimester. Identification of complications should address only those factors for which concrete and appropriate interventions are available. If a health care provider identifies a problem that she or he is not equipped to manage, that provider must refer the woman to the next level of care. In addition, providers should educate all expectant mothers, their families, and community members about pregnancy-related danger signs and what to do if complications arise. The conditions that are the most important to address during pregnancy, and their associated preventive services should be incorporated in the ANC program:

- **Anemia:** (see Nutrition TRM)
 - Nutritional counseling
 - Iron, folate supplementation
 - Helminthes treatment in endemic areas
 - Malaria prevention and case management in endemic areas
- **Pre-eclampsia:**
 - Check blood pressure; treat or refer to higher level of care, if necessary

- Instruct families to watch for danger signs, such as headache, blurry vision, abdominal pain, swelling (edema), and convulsions, and to seek help if needed
- Treatment may vary by context; see [MCHIP's Pre-eclampsia-Eclampsia Briefer](#) for a summary of WHO recommendations
- **Malaria:**
 - Intermittent preventive treatment during pregnancy
 - Insecticide treated net (ITN) distribution and counseling on proper use
 - Testing (microscopy or rapid diagnostic tests) and case management (treatment or referral) in endemic areas
- **Reproductive tract infections (RTIs), STIs** screening, treatment, and, if detected, referral of the woman and her partner:.
 - **Gonorrhea and Chlamydia** are particularly important to detect because they can be passed from an infected mother to her newborn in the birth canal, causing a number of conditions, including ophthalmia neonatorum (neonatal conjunctivitis), which can lead to blindness if not treated. In resource-poor settings, newborns should be given antibiotic eye drops or ointment in both eyes within an hour of delivery as the most practical intervention
 - **Syphilis** can cause perinatal death, mental retardation, and other neurological problems. (See the syphilis subsection later.)
 - **Bacteriuria and urinary tract infection** can cause pre-term births and vaginosis
- **HIV:** Counseling, testing, and prevention of mother-to-child-transmission (PMTCT) services
- **Tuberculosis:** Health education, testing, and treatment and referral, if necessary

Pre-eclampsia and Eclampsia

The second greatest causes of maternal death, pre-eclampsia and eclampsia (PE-E) are account for nearly 10% of maternal deaths in Africa and Asia and 25% of maternal deaths in Latin America. Persistent hypertension characterizes these conditions,¹⁶ which are difficult to prevent or predict.¹⁷

Criteria for Diagnosis of Pre-eclampsia and Eclampsia

Pre-eclampsia

Onset of a new episode of hypertension during pregnancy, characterized by:

- Persistent hypertension (diastolic blood pressure $>/ 90$ mm HG) **and**
- Substantial proteinuria ($>.3$ g/24hrs).

Eclampsia

- Generalized seizures, typically in addition to pre-eclampsia criteria

Timely and effective evidence-based care can prevent most PE-E deaths. Blood pressure monitoring for pregnant women alerts health providers at ANC to potential risks. In addition, families can watch for danger signs such as headache, blurry vision, abdominal pain, swelling (edema), and convulsions, and seek help if needed. Interventions using calcium¹⁸ and magnesium sulfate¹⁹ have been documented; clinical practice recommendations can be found in MCHIP's PE-E Briefer. NGOs that work to increase awareness of PE-E, improve the quality of care at ANC services, and increase ANC coverage contribute to reducing the risk of maternal mortality as a result of these conditions. In addition, advocacy is needed to update national policies to include evidence-based practices.²⁰ More information can be found in MCHIP's PE-E tool kit.

Key Resources for Pre-Eclampsia and Eclampsia

- MCHIP, 2012. [WHO Recommendations for Prevention and Treatment of Pre-eclampsia and Eclampsia Implications and Actions](#)
- MCHIP, 2013. [Saving Mothers' Lives with Calcium: An Innovative Program to Prevent Pre-eclampsia in Nepal](#)
- MCHIP, 2014. [Pre-Eclampsia-Eclampsia: Prevention, Detection, and Management Toolkit](#)
- MCHIP, 2011 [Pre-Eclampsia-Eclampsia: Prevention, Detection, and Management Technical Brief](#)

The Syndromic Approach to RTI-STI Case Management

RTI-STI case management of symptomatic men and women at the primary level typically uses the syndromic approach:

- | | |
|------------------------|-------------------------|
| 1. Syndromic diagnosis | 5. Condom promotion |
| 2. Treatment | 6. Partner notification |
| 3. Education | 7. Follow-up |
| 4. Counseling | |

The syndromic approach misses many cases, particularly in asymptomatic individuals. It also can lead to overtreatment, which has costs, causes unnecessary side effects, and has resistance implications. The syndromic approach, however, can be effective for the most common syndromes, which account for the vast majority of cases, and it is easy to learn and can be performed at all levels of a health system.

Key Resource for RTI/STI Case Management

- WHO, 2005. [Sexually Transmitted and Other Reproductive Tract Infections: A Guide to Essential Practice](#)

Practical Issues Related to Screening for and Treatment of Syphilis

Syphilis is a largely ignored maternal and perinatal health problem in many developing countries. Newman et al. (2013) estimates that syphilis is responsible for 520,000 adverse pregnancy outcomes, including 215,000 stillbirths or early fetal deaths, 90,000 neonatal deaths, 65,000 LBW or premature infants, and 150,000 infected newborns. Congenital syphilis can cause mental retardation and other neurological problems. The study states, “The vast majority of outcomes that occurred in 2008 could have been prevented had the women received quality early ANC that included syphilis testing and access to effective therapies, as recommended by WHO.”²¹

Recently, relatively inexpensive rapid strip tests for syphilis became available and now testing can be carried out by ANC providers. WHO recommends a single dose of 2.4 million units of benzathine penicillin G for recently acquired syphilis and a three-week course of 7.2 million units if the person has had syphilis at least one year. The woman’s sexual partner should also be treated to prevent reinfection. Ideally, women should be tested twice, once in early pregnancy and once during the final stages of the third trimester.

WHO recommends that an asymptomatic neonate born to a venereal disease research laboratory (VDRL) or rapid plasma reagin (RPR) test positive mother should receive 50,000 units/kg of benzathine benzyl penicillin in a single intramuscular dose. Symptomatic infants are noted as LBW; palms and soles with red rash, gray patches, blisters or skin peeling; snuffles or rhinitis with nasal obstruction, which is highly infectious; and abdominal distention due to big liver and spleen; jaundice; and anemia. Some VLBW babies with syphilis have signs of severe sepsis with lethargy, respiratory distress, skin petechiae or other bleeding. These symptomatic infants should receive procaine benzyl penicillin 50,000 units per kg as a single dose daily for 10 days or benzyl penicillin 50,000 units per kg every 12 hours intramuscular or intravenous for the first seven days of life, and then every 8 hours for the next 3 days.²²

Key Resources for Syphilis

- Newman et al., 2013. [Global Estimates of Syphilis in Pregnancy and Associated Adverse Outcomes: Analysis of Multinational Antenatal Surveillance Data](#)
- Galvao et al., 2013. [Safety of Benzathine Penicillin for Preventing Congenital Syphilis: A Systematic Review](#)
- WHO, 2005. [Pocket Book of Hospital Care for Children: Guideline for the Management of Common Illnesses With Limited Resources](#)
- PAHO, 2013. [Regional Initiative for the Elimination of Mother-to-Child Transmission of HIV and Congenital Syphilis in Latin America and the Caribbean](#)

Self-Care During Pregnancy

Improved self-care during pregnancy can enhance positive pregnancy outcomes. The following community-based behavior change strategies and interventions should focus on key behaviors that can improve health and reduce pregnancy risks:

- Decrease workload and increase rest periods

- Increase consumption of diverse, nutrient dense foods (See Nutrition TRM)
- Take iron, folate supplements regularly
- Prevent infectious diseases (e.g., appropriate hand washing, safe water use, condom use)
- Access ANC services regularly (i.e., at least four times)
- Sleep under an ITN in malaria-endemic areas (See Malaria TRM)
- Learn to recognize danger signs and complications (e.g., bleeding, convulsions, pallor, labored breathing, headache, swollen hands or face, fever) and know what to do if they arise
- Develop an appropriate birth plan:
 - Set aside resources for normal birth and for emergencies
 - Select an appropriate place for delivery
 - Identify a skilled birth attendant (SBA) to be present at delivery
 - Identify potential blood donors in case of emergency
 - Identify the family decision-maker, if it is not the woman herself

LABOR AND DELIVERY

Skilled Birth Attendance

WHO advocates for an SBA, or health professional (a doctor, nurse, or midwife), to be present at every birth—whether the birth occurs in a facility (preferred) or at home—because complications can arise even in a normal pregnancy. Moreover, emergency obstetric and newborn care (EmONC, described later) should be available if complications arise. The SBA’s ability to monitor a woman closely, support the normal birth process, recognize complications as they develop, and give rapid, appropriate care, including referral to a setting with EmONC services, if not already available, is critical.

An SBA should attend home births with a traditional birth attendant (TBA), a family member, or both also present. If it not possible for an SBA to be present, the TBA or designated person attending the birth should be able to recognize signs of PPH and take rapid action if needed. If immediate transport to a health center is not a feasible or practical option, the attendants should consider immediate actions at the household level to slow or stop the bleeding. This can mean using a uterotonic, such as misoprostol.²³

Clean delivery practices should always be used—both during facility and home births—regardless of an SBA’s presence.

- Clean hands of the birth attendant
- Clean cutting of the umbilical cord¹
- Clean delivery surface
- Clean water and soap

¹ Should be done in a sterile manner at facilities.

- Clean string to tie the cord
- Clean cloth for the mother and for the baby (one to dry and one to wrap)

Key Resources for Labor and Delivery

- WHO, 2000. [Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Doctors](#)
- WHO, 2010. [Essential Newborn Care Course](#)
- MCHIP, 2013. [Respectful Maternity Care Toolkit](#)
- Jhpiego, 2012. [Guidelines for In-Service Training in Basic and Comprehensive Emergency Obstetric and Newborn Care](#)
- PATH, 2005. [Evaluation of a Clean Delivery Kit Intervention in Preventing Cord Infection and Puerperal Sepsis in Mwanza, Tanzania: Final Research Report](#)
- [American College of Nurse–Midwives](#) (ACNM) is the professional association for nurse-midwives and has a wide range of resources, including some related to global health (e.g., in-service and pre-service training, community education and mobilization).
- Hesperian, 2004; updated 2013. [A Book for Midwives: A Manual for Traditional Birth Attendants and Community Midwives](#)
- [Home Based Life Saving Skills](#) (HBLSS), developed by the American College of Nurse–Midwives, trains birth attendants to manage life-threatening situations involving childbearing woman and newborns. The goal is to stabilize the woman and perform emergency care that is not only safe but also culturally acceptable and feasible in the home until referral is possible.

Maternity Waiting Homes to Increase Skilled Birth Attendance

To increase access to SBAs and EmONC, some programs have developed maternity waiting homes (MWHs) or alternative birth locations. MWHs provide pregnant women with a place to await their delivery; shortly before delivery. If complications arise, they are moved to a nearby health facility. Anecdotal evidence suggests that MWHs are successful in reducing mortality; however, little quantitative evidence is available to prove their efficacy.²⁴

Key Resources for Maternity Waiting Homes

- Van Lonkhuijzen L, et al., 2012. [Maternity Waiting Facilities for Improving Maternal and Neonatal Outcomes in Low-Resource Countries](#)
- Wild K, et al., 2011. [The Tyranny of Distance: Maternity Waiting Homes and Access to Birthing Facilities in Rural Timor-Leste](#)

Postpartum Hemorrhage and Active Management of the Third Stage of Labor

PPH is the leading direct cause of maternal death. Two-thirds of women who experience PPH have no identifiable risk factors. SBAs should actively manage the third stage of labor to help prevent PPH. Active management of the third stage of labor (AMSTL) includes:

1. Administration of a uterotonic soon after birth
2. Delivery of the placenta by controlled cord traction
3. Uterine massage

WHO still recommends that even if AMSTL is not practiced, a uterotonic be administered to the woman during the third stage of labor to prevent PPH. Studies in Indonesia, Nepal, and Afghanistan suggest that, for women who deliver at home without access to skilled care, education, instruction, and community-based distribution of misoprostol (to prevent bleeding) by well-trained and supervised CHWs may be an important strategy to reduce maternal morbidity and mortality resulting from postpartum hemorrhage.²⁵ Oxytocin in Uniject™ is also a possibility. Programs should ensure that they work within national MOH policy guidelines on uterotonic use, including community-based distribution of misoprostol.

Key Resources for PPH Prevention and AMSTL

- MCHIP, 2011. [Postpartum Hemorrhage: Prevention and Management Toolkit](#)
- MCHIP, 2012. [Active Management of the Third Stage of Labour: New WHO Recommendations Help to Focus Implementation](#)
- MCHIP, 2012. [WHO Recommendations on Prevention and Treatment of Postpartum Haemorrhage](#)
- Jhpiego. [Active Management of the Third Stage of Labor: A Demonstration](#)
- POPPHI, 2007. [Prevention of Postpartum Hemorrhage: Implementing Active Management of Third State of Labor \(AMSTL\): A Reference Manual for Health Care Providers](#)
- Pathfinder. [Clinical and Community Action to Address Postpartum Hemorrhage: AMSTL](#)
- PATH, 2011. [Postpartum Hemorrhage Toolkit](#)
- FIGO, 2012. [Prevention and Treatment of Postpartum Hemorrhage in Low-Resource Settings](#)
- FIGO, 2012. [Prevention of Postpartum Hemorrhage with Misoprostol](#)
- MCHIP, 2012. [WHO Recommendations on Prevention and Treatment of Postpartum Haemorrhage](#)

Key Misoprostol-Specific Resources

- MCHIP, 2011. [Advance Distribution of Misoprostol Program Resources](#)
- FIGO, 2012. [Misoprostol Recommended Dosages 2012](#)
- Oladapo O, 2012. [Misoprostol for Preventing and Treating Postpartum Hemorrhage in the Community: A Closer Look at the Evidence](#)
- Mobeen N, et al., 2010. [Administration of Misoprostol by Trained Traditional Birth Attendants to Prevent Postpartum Haemorrhage in Homebirths in Pakistan: A Randomized Placebo-Controlled Trial](#)

Emergency Obstetric and Newborn Care

Timing is critical in preventing maternal and newborn mortality and morbidity. PPH can kill a woman in less than 2 hours; for most other complications, a woman has 6 or more hours to receive emergency care. Most perinatal deaths occur during labor and delivery or during the following 48 hours. A majority of the maternal and early newborn deaths can be avoided by ensuring availability of EmONC services within reasonable travel distance. To manage obstetric complications, a facility must have at least two skilled attendants and trained support staff on duty at all times. For surgeries, facilities must have a functional operating theater and must be able to administer blood transfusions and anesthesia. Basic EmONC (BEmONC) has seven components; comprehensive EmONC (CEmONC) has two additional components. Birth attendants need to be skilled in essential care of the newborn at birth and basic resuscitation. [Helping Babies Breathe](#) (HBB) is a simplified basic resuscitation curriculum developed by the American Academy of Pediatrics, appropriate for birth attendants from peripheral facilities. The HBB Development Alliance is a public-private partnership of USAID, the National Institute of Child Health and Human Development, Saving Newborn Lives/Save the Children, Laerdal Medical, the American Academy of Pediatrics, and USAID implementing partners to work toward achieving a significant reduction in neonatal mortality by increasing the availability of resuscitation to manage newborn asphyxia during birth.

Basic EmONC (BEmONC)

1. Parenteral treatment of infection (antibiotics)
2. Parenteral treatment of severe pre-eclampsia/eclampsia (e.g., MgSO₄)
3. Treatment of PPH (e.g., uterotonics)
4. Manual vacuum aspiration of retained products of conception
5. Assisted vaginal delivery (e.g., vacuum-assisted delivery)
6. Manual removal of placenta
7. Newborn resuscitationⁱⁱ

Comprehensive EmONC

All components of BEmONC plus:

1. Surgical capability, including anesthesia (e.g., Cesarean section)
2. Blood transfusion

ⁱⁱ All newborn signal functions except for resuscitation are proposed as additions to the existing UN signal functions. Gabrysch S, et al. New Signal Functions to Measure the Ability of Health Facilities to Provide Routine and Emergency Newborn Care. PLoS Med 2012; 9(11): e1001340. doi:10.1371/journal.pmed.1001340.

Key Resources for EmONC

- WHO, 2000. [Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Doctors](#)
- MCHIP, 2011. [Postpartum Hemorrhage: Prevention and Management Toolkit](#)
- ACNM, 2008. [Life-Saving Skills Manual for Midwives \(4th edition\)](#)
- American Academy of Pediatrics, 2011. [Guide for Implementation of Helping Babies Breathe \(HBB\): Strengthening Neonatal Resuscitation in Sustainable Programs of Essential Newborn Care](#)
- FIGO, 2012. [Treatment of Postpartum Haemorrhage With Misoprostol](#)
- AMDD, 2003. [Using the UN Process Indicators of Emergency Obstetric Services: Questions and Answers](#)
- WHO, 2004. [Beyond the Numbers: Reviewing Maternal Deaths and Newborn Care](#)
- UNFPA, 2009. [Monitoring Emergency Obstetric Care](#)
- WHO, 2009. [Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Doctors](#)
- American Academy of Pediatrics, 2007. [Helping Babies Breathe](#)
- WHO, 2012. [Basic Newborn Resuscitation](#)
- WHO, 2003. [Managing Newborn Problems: A Guide for Doctors, Nurses, and Midwives](#)

Facility Care

Facilities need to be equipped to prevent and manage the most common obstetrical and newborn complications.²⁶ According to the USAID Maternal Health Strategy, to achieve the greatest public health impact where maternal mortality is very high, the priority focus should be on BEmONC rather than CEmONC, with a plan to phase in CEmONC as the situation allows. The MOH should assess the capacity of its facilities to provide EmONC. This means that essential facilities, equipment, drugs, and supplies are available; protocols are established; providers are adequately trained and supervised; and a quality improvement system is in place with regular measurement and monitoring of key indicators.

Most deliveries at facilities are not emergencies, and providers should be able to support the normal birth process and monitor all deliveries using a partograph, which is a graphical record of progress during labor to identify deviations from normal and to prevent prolonged labor, infection, birth asphyxia, and obstetric fistula. Providers also should be trained to provide supportive and respectful care to a woman and her family during labor and delivery.

Respectful Maternity Care

Abuse of women in maternity care and disrespect toward them has been documented globally.²⁷ This presents a barrier to accessing skilled care and constitutes a disregard for human rights, causing women to suffer during a vulnerable time. In some cases, providers may not know that their practices are disrespectful; in other cases, they may recognize it, but lack a clear way to address it.

NGOs can promote and support respectful maternity care (RMC) in several ways, including training, monitoring, and advocacy activities. MCHIP's [Respectful Maternity Care Toolkit](#)

describes RMC as a pervasive attitude, rather than a checklist or intervention. The tool kit provides program-learning documents that describe experiences with RMC, training materials for a clinician workshop, advocacy materials, tools, and indicators to monitor RMC, job aids for health care providers, and other resources.

Key Resources for Respectful Care:

- MCHIP, 2014. [Respectful Maternity Care Toolkit](#)
- Traction Project, 2013. [Respectful Care During Childbirth](#)
- White Ribbon Alliance, 2013. [Respectful Maternity Care](#)
- Maternal Health Task Force. [Respectful Maternity Care](#)

Immediate Newborn Care

Following is a list of basic immediate newborn care:

- Wiping, drying, warming (ideally skin-to-skin contact) and wrapping, and providing skin-to-skin contact
- Evaluating breathing
- Using a sterile method to cut the cord
- To prevent infant anemia, delaying cord clamping for 1–3 minutes after birth or until pulsations cease
- Initiating exclusive breastfeeding in the first hour
- Using chlorhexidine for umbilical cord care
- Caring for the eyes, including prophylaxisⁱⁱⁱ according to national policy guidelines
- Resuscitating a baby that is not breathing at birth

After the baby is delivered and before the cord is cut, the baby should be wiped, dried, and placed directly on the mother's abdomen in skin-to-skin contact while the birth attendant evaluates respiration and waits 1–3 minutes before clamping the cord. The mother should be encouraged to breastfeed within the first hour, with skin-to-skin contact with the baby on her chest. If the baby is not breathing at birth, steps should be taken within one minute after birth to resuscitate the infant (aspiration of airways, stimulation, bag and mask ventilation).

ⁱⁱⁱ Eye care prophylaxis: 1% silver nitrate eye drops, or preferably a tetracycline or erythromycin eye ointment, should be applied to newborns' eyes within 1 hour of delivery to prevent infection caused by gonorrhea and chlamydia. Delay in applying the ointment is a key reason for failure of eye prophylaxis. Untreated infections can result in blindness.

POSTNATAL CARE

Every woman and newborn should be closely monitored together after childbirth; both should be checked every 15 minutes for the first 2 hours and then regularly for the next 24 hours. The early postpartum period is a critical time for the onset of PPH in the mother. The baby needs to be monitored for respiration, temperature, breastfeeding, and bleeding from the cord.²⁸

The mother and newborn must be assessed carefully before they are discharged from the facility or before the care provider leaves the mother's home to detect any high-risk factors or potential problems that might need closer observation. *Newborns delivered in health facilities should not be sent home in the critical first 24 hours after birth.*²⁹ Mothers who deliver at home should be checked within the first 24 hours. Subsequent checks, regardless of delivery location, should take place on Day 3 after birth, in the first 2–3 weeks, and at 6 weeks.³⁰ These checks are also an opportunity for the care provider to counsel the mother and family members on preventive care, detect danger signs, and encourage appropriate care seeking.

The following components are part of routine PNC³¹:

- Check health of mother and newborn.
- Counsel the mother on FP methods and provide the method the mother chooses.
- Counsel on the mother breastfeeding,³² nutrition,³³ hygiene, rest, and infant care, including cord care.^{iv}
- Counsel the mother on danger signs (see the following paragraphs) and care-seeking.
- Counsel the mother on sleeping under an ITN in malaria-endemic areas.
- Promote birth registration and timely immunization according to national schedules for the newborn (see immunizations in later paragraphs).
- Promote daily maternal iron and folate supplementation for 3 months in areas where anemia prevalence among pregnant women is greater than 40%. In other areas, promote daily maternal supplementation until the woman has consumed 180 tablets if she did not complete 6 months of daily iron and folate supplementation during pregnancy.

Danger Signs

Mothers should be counseled on the following *maternal* danger signs:

- Excessive bleeding
- Headache
- Fits
- Fever
- Feeling very weak
- Breathing difficulties

^{iv} In high-risk settings, apply antiseptic (selected antiseptic is 4% chlorhexidine) after cutting cord, apply Chlorhexidine to the cord's tip, stump, and around stump base. Repeat daily in the first week or until cord separates—whichever comes first.

- Foul-smelling discharge
- Painful urination
- Severe abdominal or perineal pain

Mothers should be counseled on the following *newborn* danger signs:

- Poor sucking or inability to suck
- Inactivity or lethargy
- Fast breathing, difficulty in breathing, chest or subcostal retraction
- Fever or body too cold;
- Vomiting or abdominal distention
- Convulsions
- Signs of umbilical infection (pus discharge at base, surrounding redness or swelling, foul smell)

Immunizations

Newborns should receive vaccines according to national immunization guidelines. BCG should be given as soon as possible after birth; OPV0 should be given between birth and 2 weeks of age. Perinatal transmission of Hepatitis B (HB) is common, and HB vaccine, if given before infection, can prevent disease and keep nearly all individuals, including infants, from becoming carriers. The vaccine is most effectively used as a routine part of the infant immunization schedule, although it can be used at any age.

Key Resources for Postnatal Care

- WHO, 2010. [Essential Newborn Care Course](#)
- WHO, 2013. [WHO Recommendations of Postnatal Care of the Mother and Newborn](#)
- WHO 2012. [Caring for the Newborn at Home: A Training Course for Community Health Workers](#)
- Save the Children, 2014. [Ending Newborn Deaths: Ensuring Every Baby Survives](#)
- American Academy of Pediatrics, 2014. [Essential Care for Every Baby.](#)
- Chlorhexidine Working Group, 2014. [Chlorhexidine for Umbilical Cord Care](#)
- WHO, 2003. [Kangaroo Mother Care: A Practical Guide](#)
- WHO, 2006. [Optimal Feeding of Low-Birth-Weight Infants](#)
- WHO, 2003. [Managing Newborn Problems](#)
- CORE Group, 2011. [Taking Care of a Baby at Home After Birth](#)
- Save the Children, 2009. [Newborn Care Charts: Management of Sick and Small Newborns in Hospital](#)

Postnatal Care at the Community Level

Healthy women and their newborns should stay at a health facility at least 24 hours, but after that, postnatal care (PNC) does not need to be facility-based. In many settings, properly trained

health providers or CHWs can provide basic PNC at home.³⁴ Regardless of where the birth took place, mothers and babies need at least four postnatal visits in the first 6 weeks: (1) within the first 24 hours, (2) 3 days after birth, (3) between 1 and 2 weeks (Days 3–14) after birth, and (4) 6 weeks after birth. Traditional practices often keep the mother and her baby at home for variable periods up to 6 weeks after birth. Thus, CHWs can play a role in making home visits in the postnatal period. Community mobilization and home visits by CHWs, in synergy, would increase coverage of newborn care practices and reduce neonatal deaths. Both timing of visits and treatment interventions are critical.^{35,36}

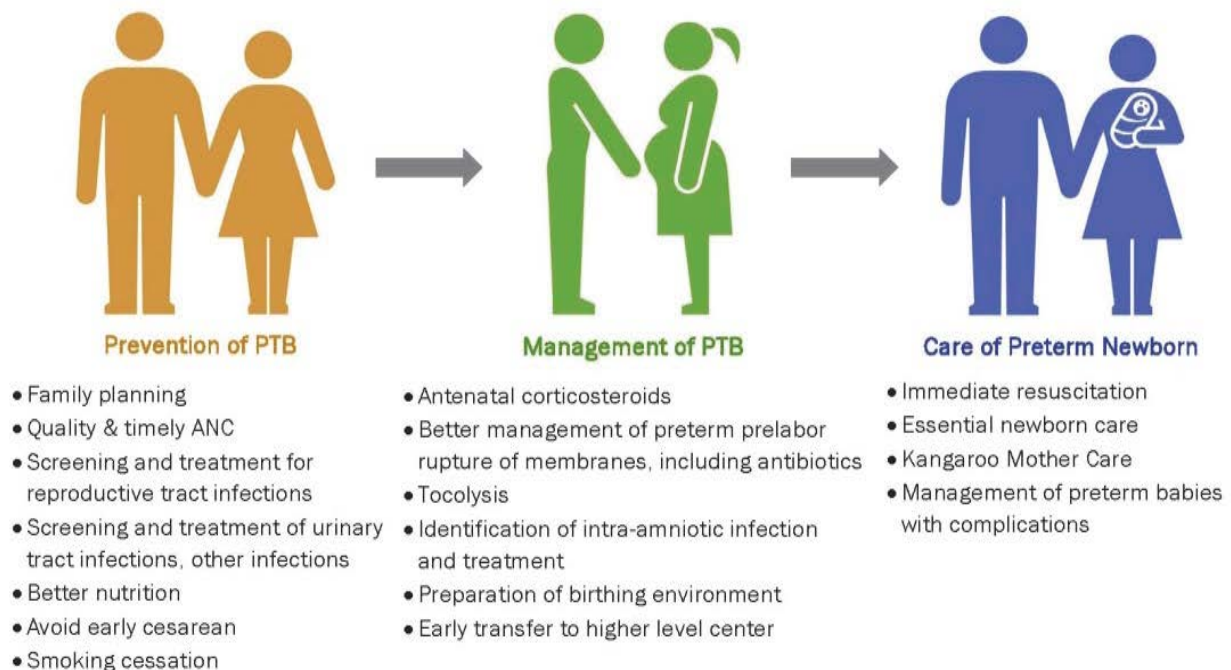
In addition to defining the timing and number of PNC visits, it is essential to state content clearly so that each visit is goal-oriented. A newborn care package can be tailored to specific contexts, depending on variables, such as the availability, accessibility, and utilization of skilled providers and health facilities or the primary causes of neonatal mortality in a region.

It is important to consider that more women receive ANC than PNC, and women and their families should be knowledgeable about newborn danger signs, newborn care, and postpartum family planning before the baby is born. Mothers and their families should learn about these topics and the importance of PNC in the antenatal period, and these lessons should be reinforced during the postnatal period.

Care of Preterm Birth

Babies born before 37 completed weeks of gestation are preterm, which totals about 10% of all births.³⁷ Preterm birth (PTB) and resulting complications are the leading causes of newborn deaths, leading to more than one million deaths per year. Preterm babies have difficulties feeding and maintaining body temperature. A three-phased approach to PTB is illustrated in Figure 1.³⁸

Figure 1. Three-phased approach to preterm birth



Kangaroo Mother Care

Kangaroo mother care (KMC) helps a newborn maintain body temperature by promoting continuous skin-to-skin contact and feeding exclusively with human milk. It promotes early discharge with close follow-up for preterm and LBW babies. Although KMC was conceived as a facility-based strategy for low-resource settings (in Bogota, Colombia), evidence shows an approximately 50% reduction in newborn mortality, and the method is used even in high-technology settings for better outcomes and humanization of neonatal care. Current evidence is insufficient for KMC initiated in the community.³⁹

Antenatal Corticosteroids

Administration of antenatal corticosteroids (ACS) is the single most beneficial intervention for newborns born prematurely. ACS reduces respiratory distress syndrome and other preterm morbidities, and ultimately, death by more than 30%. ACS is a facility-based intervention but NGOs can intervene in a few ways: Refer women at risk of PTB to a higher level facility for care; advocate for national protocols for the use of ACS in PTB management; ensure a functioning supply and delivery system for medication and supplies; ensure ANC includes information about conditions that predispose a woman for PTB-like preterm uterine contractions, preterm rupture of membranes, and symptoms of PE-E; increase community awareness of PTB prevention and signs of threatened PTB; and support provision of essential newborn care with appropriate services like KMC for premature babies.⁴⁰

Key Resources for Care of Preterm Birth

- WHO, 2003. [Kangaroo Mother Care: A Practical Guide](#)
- Partnership for Maternal, Neonatal, and Child Health, 2012. [Born Too Soon](#)
- MCHIP, 2013. [Administration of Antenatal Corticosteroids: Technical Guidance for Program Implementation](#)
- MotherNewBorNet, 2009. [Close Encounters: The Case for Kangaroo Mother Care](#)
- MCHIP, 2012. [Kangaroo Mother Care Implementation Guide](#)
- Healthy Newborn Network, 2013. [An Overview of Kangaroo Mother Care](#)

Integrated Management of Neonatal and Childhood Illnesses

Health workers also can be trained in Integrated Management of Neonatal and Childhood Illnesses to prevent, recognize, and manage problems such as *ophthalmia neonatorum* and cord infections, among others. Sick newborns are screened with the Integrated Management of Neonatal and Childhood Illnesses case management algorithm for infants 2 weeks of age or younger. This approach assesses, classifies, treats, and refers newborns when necessary and ensures that mothers are appropriately counseled in breastfeeding, nutrition, and homecare.

Key Resource for Integrated Management of Neonatal and Childhood Illnesses

- UNICEF India. Integrated Management of Neonatal and Childhood Illnesses (IMNCI) Strategy Information
- WHO, 2007. [IMCI Computerized Adaptation and Training Tool](#)

Breastfeeding

“Breastfeeding is today the single most effective preventive intervention for improving the survival and health of children”—WHO Secretariat, 2011.⁴¹ Breastfeeding provides optimal nutrition for infants. Bhutta, writing for the [Lancet 2013 Series on Maternal and Child Nutrition](#), cites a review that suggests that breastfeeding initiation within 24 hours of birth is associated with at least a 44% reduction in all-cause and infection-related neonatal mortality.^{42,43} Exclusive feeding with human milk in the first hour after birth has been shown to reduce newborn mortality by 22%.⁴⁴ According to UNICEF, data indicate that only 36% of infants 5 months old or younger in the developing world are exclusively breastfed, and only 43% of newborns started breastfeeding within the first hour after birth.⁴⁵

Mothers also benefit from breastfeeding. Immediately after delivery, the oxytocin released when a mother begins breastfeeding her child causes the uterus to contract, helping to minimize postpartum bleeding. Exclusive breastfeeding also delays the return of ovulation and menstruation. Longer term, breastfeeding reduces type 2 diabetes and breast, uterine, and ovarian cancer. Studies have also found an association between early cessation of breastfeeding and postnatal depression in mothers.⁴⁶

NGOs also can support breastfeeding by training CHWs and health workers or volunteers how to address common issues related to [latch, position, breast health](#), and [feeding questions or concerns](#).^v

Health care providers should be aware of the elements of the [Baby-Friendly Hospital Initiative](#) (BFHI), a global effort launched by WHO and UNICEF in 1991 to implement practices that protect, promote, and support breastfeeding. BFHI materials were revised, updated, and expanded for integrated care in 2009.

^v The LINKAGES Project ended in 2006, but its website has many good resources for supporting breastfeeding. Resources related to HIV and infant feeding, however, are out of date. Please see the WHO statement (2010) for current guidance.

Key Resources for Breastfeeding

- [LINKAGES Project](#) (1996-2006) was a USAID-funded project that provided technical information, assistance, and training to organizations on breastfeeding, related complementary feeding and maternal dietary practices, and the lactational amenorrhea method, a modern postpartum method of contraception for women who breastfeed. Many useful publications and tools are still available on the project website.
- UNICEF, 2013. [Nutrition: Breastfeeding](#)
- MCHIP, 2014. [Nutrition TRM](#)
- WHO, 2003. [Community-Based Strategies for Breastfeeding Promotion and Support in Developing Countries](#)

POST-ABORTION CARE FOR UNSAFE INDUCED AND INCOMPLETE SPONTANEOUS ABORTIONS

WHO estimates that of the 211 million pregnancies that occur worldwide each year, about 46 million end in induced abortion,⁴⁷ with approximately 40% carried out under unsafe conditions. Roughly 68,000 women die from unsafe abortions each year, which accounts for a considerable portion (10% to 50%, depending on the country) of all maternal deaths. Many of these deaths could be prevented if women could avoid unwanted pregnancies and had access to safe abortion services, including post-abortion care (PAC).

PAC includes services for early recognition and management of abortion-related complications, such as hemorrhage and sepsis, and post-abortion counseling, including contraceptive services or referral. To lower a woman's risks of anemia and of adverse health outcomes (for example, pre-term birth, low-birth weight, premature rupture of membranes) in her next pregnancy, a woman should use an effective family planning method of her choice for at least 6 months before becoming pregnant again.⁴⁸

Manual vacuum aspiration to remove retained products of conception results in fewer complications than traditional dilatation and curettage, and it can be carried out effectively by non-physician providers such as midwives.

Community attitudes influence demand for unsafe abortions and how women who suffer from complications are treated. Provision of safe, effective contraceptive methods at the community level can reduce the number of unintended pregnancies and, thus, reduce the number of abortions (spontaneous or induced). Systems in place for emergency transport of complicated deliveries also can be used for complications from unsafe induced or incomplete spontaneous abortions.

In many countries, inducing an abortion is illegal, but this often does not stop women from seeking abortions. The health system needs to be able to handle abortion-related complications and provide information and counseling to women. Furthermore, national and internal organizational policies will influence how programs can address PAC.

Key Resources for PAC

- EngenderHealth, 2003. [Counseling the Post-Abortion Client: A Training Curriculum](#)
- WHO, 1997. [Post-Abortion Family Planning: A Practical Guide for Programme Managers](#)
- Population Council, 2000. [Meeting Women's Health Care Needs After Abortion](#)

PROGRAM DESIGN

All health programs need to consider four program elements to ensure effectiveness:

1. Increasing knowledge and demand
2. Improving access
3. Ensuring quality services
4. Developing a supportive policy and social environment

It is not essential that a program address all of these elements; however, if a situation analysis indicates significant barriers in any of these areas, it is important to consider how those barriers might best be addressed to ensure the success of the program. If the program itself does not have the resources to address the identified barriers, it might look for options to leverage other resources or to work with collaborators to address the gaps.

Key Resource for MNC Program Design

- CORE Group, 2004. [Maternal and Newborn Standards and Indicators Compendium](#)

COMMUNITY-BASED MATERNAL AND NEWBORN CARE

Community-based MNC strategies bring MNC information and services to the communities and create or strengthen linkages between communities and health facilities. Traditionally, strategies have focused on improving awareness, demand, access, availability, and acceptability of healthy behaviors and services through these activities:

- Promotion of prevention, early recognition, referral, and treatment of complications
- Technical competence, supportive systems, and supplies for normal deliveries and obstetrical emergencies
- Quality education and training for community-based MNC
- Effective quality assurance systems for facility- and community-level services

Community-level activities effectively can increase access to MNC services in underserved rural and urban areas and also increase interest and demand for them and in the following cases:

- When demand for MNC is high, but access to services is low
- When demand for, access to, and use of MNC is low
- When demand for and use of MNC services is low, but access to services is high, and there is an interest in increasing demand
- Where the health infrastructure is weak; community-based programs use a variety of community-based channels, particularly CHWs, and in some cases, trained TBAs or community midwives

Community-based programs involve a significant level of community ownership. Key steps to encourage community ownership include working with leaders, stakeholders, and community members to identify challenges and priorities for improving MNC, and subsequently involving them in identifying and implementing strategies and activities to address any concerns. These groups include women of reproductive age, partners, in-laws, traditional and religious leaders, politicians, health representatives, CHWs, representatives of special interest groups, community organizations, and local NGOs. This involvement creates a program that is responsive to the community's needs. Community members will then be more likely to recognize and accept the program's benefits. This participation also fosters community ownership and responsibility for the program's success and contributes both to behavior change and to sustainability.

Community-level activities should be linked to the government's health system to avoid duplicating, replacing, or ignoring the system. A program must choose its activities based on MOH policy, community needs, and resources. Programs need to ensure that quality MNC services are available at the referral health facilities and address identified health facility strengthening needs in their project plan or through partners' plans.

UNDERSTANDING THE SITUATION

Women do not practice healthy MNC behaviors or use health system services for several reasons, including social and cultural factors. Thaddeus and Maine (1994) explain the three delays⁴⁹ that contribute to maternal death:

- Delays in seeking care may be caused by failure to recognize signs of complications, failure to perceive the severity of illness, cost considerations, previous negative experiences with the health care system, and transportation difficulties.
- Delays in reaching care may be created by the distance from a woman's home to a facility or provider, the condition of roads, and a lack of emergency transportation.
- Delays in receiving care may result from a lack of health care personnel, poor skills of health care providers, unprofessional attitudes of providers, and shortages of supplies and basic equipment.

The first step in developing MNC interventions is to understand the situation. A situation analysis allows for an assessment of MNC knowledge, attitudes, and practices, as well as barriers and enabling factors that influence use of MNC services and adoption of healthy behaviors. It is important to understand what is happening at both the community and facility levels and what links exist between the two.

By identifying specific barriers or enabling factors, a project can better develop an effective [social and behavior change \(SBC\) strategy](#) and can target its interventions strategically. In a

situation analysis, secondary data sources may include national surveys, health facility registers, and reporting forms. Primary data sources may include small-sample household surveys, focus group discussions, in-depth interviews, and health center exit surveys. Generally a mixture of qualitative and quantitative data is most informative. Following is a list of potential resources:

- [Knowledge, Practice, and Coverage \(KPC\) Survey](#): Small-sample household survey that enables understanding of the MNC situation in a project area before and after implementation.
- [Demographic and Health Surveys \(DHS\)](#): Country-wide household surveys that cover many MNC issues, with indicators often disaggregated by region, age, and rural or urban.
- [Barrier Analysis](#): A rapid assessment tool for identifying behavioral determinants associated with a particular behavior.
- [Rapid Health Facility Assessment \(R-HFA\)](#): An instrument for measuring a small set of key indicators to give “a balanced scorecard” for MNCH services at the primary health care level (including an optional module for use with CHWs for community outreach services) and identify key bottlenecks to quality service delivery.

For instance, a woman’s ability to seek prompt care requires that an emergency plan is in place and that the woman, family, and others attending the birth can recognize danger signs. Many factors influence the decision to seek care, including the ability of those attending the birth to understand and recognize danger signs, who the decision-maker is, traditional beliefs, traditional birthing practices, transportation costs and availability, perception of and actual quality of care at health facilities, fees and incidental costs, and availability of drugs and other supplies.

To improve the ability to seek prompt care for complications, programs must identify the barriers and address them at the household, community, and facility levels. ANC visits, home visits, and women’s group meetings all offer opportunities to educate and counsel women (and others). Reducing cultural or religious barriers also can improve access. Programs must also identify the cadre of health workers who could do home visits (e.g., for postnatal care) and deliver the community intervention package in various settings? What basic training is required for CHWs? What are considerations for CHW supervision? What targets and indicators on CHWs coverage are needed for M&E?

In addition to effective links between households and health facilities, it is essential to coordinate efforts among national and district governments, local and international NGOs, bilateral and multilateral donor agencies, and the private sector. A number of elements in the health system need to be assessed and likely strengthened in parallel with other program activities. Following is a list of examples:

- Training of facility-based health staff, including providers, managers, data analysts, and laboratory technicians
- Methods for monitoring and supervising health workers and improving clinical practice to assure delivery of quality services based on desired standards of practice
- Logistics systems to provide adequate supplies of essential drugs and other MNC supplies
- M&E systems to assess program performance
- District planning and management capacity

Key Resources for Understanding the Situation

- John Snow, Inc., 1998. [Assessing Safe Motherhood in the Community: A Guide to Formative Research](#)
- Food for the Hungry, 2010. [Barrier Analysis Facilitator's Guide](#)
- MCHIP, 2014. [Knowledge, Practice, Coverage Survey Tool](#)

Other References:

- O'Donnell O, [Access to Health Care in Developing Countries: Breaking Down Demand Side Barriers](#). *Cad. Saúde Pública* [online]. 2007; 23(12):2820-2834.
- Mercurio B, [Resolving the Public Health Crisis in the Developing World: Problems and Barriers of Access to Essential Medicines](#), *Northwestern Journal of International Human Rights* 2007; 5(1).

COMMUNITY-BASED INFORMATION AND SERVICE PROVIDERS

Community health workers are an effective cadre to bring MNC information and services to communities. CHWs have an affinity and understanding of the community that they serve because they are known in their community and come from the same or a similar cultural background. Historically, CHWs have been trained to counsel women during pregnancy, refer women if complications are identified, and accompany women to a health facility to give birth. More recently, CHWs also have been making PNC home visits, and the global community is assessing whether CHWs can distribute and administer misoprostol to prevent PPH, provide injectable contraceptives (see [Family Planning TRM](#)), and diagnose community members for malaria and treat or refer (see [Malaria TRM](#)), as appropriate. When working with [CHWs](#), it is important to understand if and where they fit in the national health system, what other responsibilities they may have, and how to make their activities sustainable.

Traditional birth attendants are a main source of pregnancy-related care in many settings, yet most have received no formal education or training and are illiterate. Although many governments are developing policies that promote childbirth in facilities with a skilled attendant and discourage childbirth in homes, women still give birth in settings with just family members or a TBA. It is important, therefore, that TBAs be considered stakeholders who can be trained to provide education and counseling and some elements of ANC and PNC in their communities. They can serve as a link to the formal health system to increase access to skilled attendance at birth.^{vi}

Mobile outreach services also can link communities to the health system. In many areas, the public health system offers ANC monthly at outreach posts through health facility workers, which can be an excellent opportunity for women to access care without needing to travel to a

^{vi} Sibley, et al. (2009, p. 2) conclude, “The potential of TBA [trained birth attendant] training to reduce peri-neonatal mortality is promising when combined with improved health services. However, the number of studies meeting the inclusion criteria is insufficient to provide the evidence base needed to establish training effectiveness.” Sibley L, et al. Traditional birth attendant training for improving health behaviours and pregnancy outcomes (Review). The Cochrane Collaboration. Cochrane Library 2009, Issue 2.

health facility. These outreach posts, however, may be understaffed or lack supplies, which can severely limit quality of care or render them non-functional.

Families, particularly the husband or father, should be involved in birth preparations and should be ready to act if complications occur. Partners also should be tested and treated for STIs and be involved in family planning decisions. Depending on the culture, other family members such as mothers-in-law (grandmothers) may be important decision-makers and should be included when health messages and advice for the mother are shared.

Private sector actors can provide access to resources and techniques that increase MNC uptake through media outlets, development of job aids, communication materials, and transportation.

Community Agent Challenges

When designing a community-based program that uses community agents, it is important to consider the following points:

- Maintaining a cadre of motivated, well-trained CHWs who will remain in place after the program ends requires creativity and planning.
- Supervising, mentoring, and supporting CHWs can be complex and costly, yet these components are essential for maintaining the quality of the program.
- Establishing and maintaining links to health facilities is an ongoing task.

SOCIAL AND BEHAVIOR CHANGE STRATEGY

Decisions about whether to access MNC services and adopt healthy behaviors are influenced by social factors, such as social norms, religious beliefs, social support, cultural traditions, myths and rumors, local or national policies, and the role of women in reproductive health decision-making. [SBC strategies](#) use communication to promote and support recommended MNC practices among women, their families, and health agents; address changes in related socio-cultural norms; and build a supportive environment for recommended MNC practices.

SBC activities may include providing women with information about available MNC services and benefits of adopting healthy behaviors during pregnancy, holding group-based discussions to address myths and misconceptions about MNC, and engaging community leaders to build support for appropriate care-seeking. SBC activities should be designed strategically to address key barriers and enablers for recommended MNC practices identified during the situation analysis. Development of an SBC strategy can help ensure that all messages and materials are designed strategically for the appropriate target audiences.

For instance, if the lack of optimal breastfeeding is a problem among a target population, an SBC strategy can help change misconceptions and promote better practice through behavior change communication (BCC), community mobilization, and advocacy. Specific BCC messages will depend on the barriers and enabling factors that were uncovered during the situation analysis, but they could include messages such as those in the following box.

Examples of Essential Breastfeeding Messages

Initiate breastfeeding within 1 hour of birth.

Colostrum is good for the baby.

Exclusively breastfeed (no other liquids) the baby for the first 6 months.

Breastfeed on demand, day and night, for an adequate time at each feeding. Offer second breast after infant releases the first.

Correctly position and attach infant at the breast.

Practice good breast care.

Continue breastfeeding until the child is 24 months old.

The Lactational Amenorrhea Method is an efficacious family planning method, but for it to work, all three criteria (the baby is under 6 months; the mother is still amenorrheic; and she practises exclusive or quasi-exclusive breastfeeding on demand, day and night) must be met.

An enabling environment is key to improving maternal and newborn health. Efforts to increase appropriate MNC are much more likely to be successful and sustainable if they promote broader social change in addition to individual behavior change. Projects can contribute to the process of policy change through advocacy. Creating demonstration sites can contribute to assuring that the right policies are in place to ensure this enabling environment. Some priority areas include treatment of newborn infections; community-based use of misoprostol to prevent PPH; community-based provision of injectable contraceptives; and task-shifting certain medical interventions to less skilled providers.

Key Resources for SBC

- ACCESS, 2007. [Demystifying Community Mobilization: An Effective Strategy to Improve Maternal and Newborn Health](#)
- JHU/CSHGP, 1995. [A Review of Maternal Care Messages and Curricula Used in PVO Child Survival Projects](#)
- WHO, 1997. [Safer Motherhood, Safer Womanhood: Rethinking Reproductive Health Communication Strategies for the Next Decade](#)
- MCHIP, 2014. [Social and Behavior Change TRM](#)

INTEGRATION: FAMILY PLANNING AND HIV/AIDS

Integration: Family Planning

ANC and PNC contacts are important opportunities to talk with women about intentions for spacing or limiting subsequent pregnancies, exclusive breastfeeding, and FP options. Most postpartum women want to delay their next pregnancy; some would like to limit future pregnancies. Counseling centered on the clients' individual needs and preferences is essential in enabling women to choose an appropriate method. Male partners also should be involved.

As a part of PNC, every woman should be provided with the postpartum family planning method of her choice or referred to a site that offers the desired method. Lactational Amenorrhea Method has a particular advantage in the postpartum period because it serves as a method of birth spacing while also contributing to reducing neonatal mortality and morbidity through exclusive breastfeeding. For more information on postpartum family planning, including intrauterine contraceptive device insertion, see the [Family Planning TRM](#) and the [Community-Based FP Toolkit](#).

Integration: HIV/AIDS

HIV testing; voluntary counseling, and testing; or provider-initiated counseling and testing are recommended components of ANC in endemic areas. Counseling sessions need to emphasize safe sex practices and, if possible, services should be integrated (e.g., facilitating pregnant women's access to PMTCT services during ANC and making sure that FP methods are provided as part of PAC and PNC). In cases where ANC services are understaffed and under-resourced, PMTCT interventions should not be offered at the expense of providing basic MNC to the wider community. PMTCT services should strengthen MNC, which often can serve as an appropriate and convenient entry point:

- **ANC:** Programs can increase the likelihood that women take their prophylactic antiretroviral (ARVs) drugs according to national guidelines by providing women who are known to be HIV-positive with ARVs during an ANC visit—usually at 28 weeks or later.
- **Labor:** Health providers can provide counseling and testing during labor to women who were missed during pregnancy; use infection prevention measures for all women; avoid unnecessary procedures, such as artificial rupture of membranes and episiotomy; give ARV prophylaxis, as appropriate, to HIV-positive women and their newborns; and counsel mothers on infant feeding.
- **PNC:** The postnatal period is an opportunity to test and counsel women and provide ARVs to the baby, as well as counsel the mother about infant feeding and breast care.

Key Resources for HIV and MNC

- WHO, 2010. [WHO Guidelines on HIV and Infant Feeding](#)
- EngenderHealth, 2004. [HIV Prevention in Maternal Health Services](#)
- Turan, 2012. [Stigma and Discrimination: Key Barriers to Achieving Global Goals for Maternal Health and Elimination of New Child HIV Infections](#)
- WHO, 2014. [Care of the HIV-Exposed or Infected Newborn](#)

IMPLEMENTATION

COMMUNITY-LEVEL PROGRAMMING CONSIDERATIONS

MNC programs with a community or household component (especially those working with CHWs) should take into account the following considerations:⁵⁰

- **CHW Selection:** A program using community agents should develop criteria to identify and select women and men to serve as CHWs in consultation with community members and in alignment with national policies. If CHWs already exist in the program area, the program should ask: Are they active? What responsibilities do they already have? Can they be trained to undertake additional activities?
- **Training and supervision:** CHWs must be trained after they are selected. Programs should also develop a plan for regular refresher and on-the-job training as part of regular supervision. For supervision and support, CHWs should be linked to the local health center and a government health worker. A health worker or supervisor's task is to help CHWs do their work correctly and effectively by (1) reviewing reports and record keeping; (2) observing the CHW's skills; (3) giving immediate, tactful feedback to correct errors in information or approach, to praise what the CHW does well, and to suggest areas where the CHW can improve; and (4) mentoring the CHW by carrying out activities with her or him and demonstrating the desired practice.
- **Referral system:** Inefficient referral links seriously can hamper efforts made at the community level. An MNC program needs to create or strengthen the referral system between communities and health facilities. Facility workers also can refer women and newborns back to CHWs to monitor them. As part of developing a referral system, programs need to assess the availability, type, and quality of facility-based services. Programs may consider short-term savings and loans programs to pay for transport.
- **Volunteer management and motivation:** Depending on the context, CHWs may be paid workers or volunteers. Volunteer CHWs typically receive modest incentives, such as supplies and increased status in the community. Programs should determine upfront how CHWs will be motivated and compensated and also make provisions for replacing CHWs who leave their positions. For example, if another organization that is operating among the same target population offers perceived better incentives, what implications will that have?
- **Scale and sustainability plan:** CHW programs may be implemented on a relatively small scale, depending on the level of training and support required. Ownership at the MOH level is essential for finding long-term support for supervision and refresher training to sustain CHW programs. A sustainability plan should be developed during the project planning phase, not at the end of the project when activities are being wrapped up. For example, if paid project staff members are implementing trainings or supervision activities, who will take over these responsibilities when the project ends and are these expectations reasonable?
- **Logistics and supplies:** Certain components of a community-based program may depend on having a reliable source of commodities and supplies, often through the local health center. CHWs must know the procedures for replenishing their supplies; know who is responsible for resupplying; and have a system to maintain good communication with their supplier.

Key Resources for Community-Level Programming

- ACCESS, 2005. [Household-to-Hospital Continuum of Maternal and Newborn Care](#)
- AMDD, 2014. [Rethinking Referral Systems](#)
- The Earth Institute. [One Million Community Health Workers: Technical Task Force Report](#)
- Perry H and Zulliger R, 2012. [How Effective Are Community Health Workers?](#)
- Bhutta Z, et al. [Global Evidence of Community Health Workers for Delivery of Health Related Millennium Development Goals: A Systematic Review, Country Case Studies, and Recommendations for Integration into National Health Systems](#)
- WHO, 2012. [WHO Recommendations: Optimizing Health Worker Roles for Maternal and Newborn Health](#)
- Initiatives, Inc., 2014. [CHW Central](#)
- POPPHI, 2009. [A Guide for Training Community Health Workers—Volunteers to Provide Maternal and Newborn Messages](#)
- Partners in Health, 2011. [Improving Outcomes with Community Health Workers: Unit 7.](#)
- Nkoni L, et al. [Lay Health Worker Attrition: Important but Often Ignored](#). Bull of WHO 2011; 89: 919-923.
- Health Care Improvement Project, 2011. [Community Health Worker Assessment and Improvement Matrix \(CHW AIM\): A Toolkit for Improving CHW Programs and Services](#)
- BASICS, 2009. [Integrated Maternal and Newborn Care: Supervisory and Evaluation Checklists](#)

COUNSELING

Counseling is “a special type of client-provider interaction. It is a two-way communication between a health care worker and a client, for the purpose of confirming or facilitating a decision by the client, or helping the client address problems or concerns” (EngenderHealth, 2003. p. 26).⁵¹ Good counseling depends on providing accurate and appropriate information, developing good interpersonal skills, maintaining confidentiality and privacy, tailoring the interaction to the client’s needs, and providing enough information while avoiding overload. Counseling can take place at both the facility and community levels during ANC, PNC, and PAC, and ad hoc. Home visits by CHWs are particularly good opportunities to provide counseling and education and check on the health of a woman.

Key Resources for Counseling

- WHO, 2009. [Counselling for Maternal and Newborn Health Care](#)
- EngenderHealth, 2003. [Comprehensive Counseling for Reproductive Health: An Integrated Curriculum](#)

TRAINING

Quality MNC services require competent, well-prepared staff and volunteers who can safely provide information and services. Training needs to be interactive where participants are engaged in activities such as role plays, small group work, learning games, and opportunities to demonstrate what they have learned in field. Training curricula are included as key resources throughout this TRM.

Key Resource for MNC Training

- ACNM. 2010. [Home-Based Life Saving Skills](#)

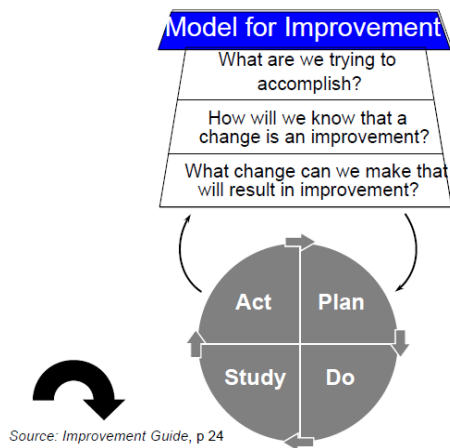
PERFORMANCE AND QUALITY IMPROVEMENT

The wide range of initiatives aimed at improving quality in health care build on models and tools first used in industry. One of the most widely used approaches promoted by the Institute for Health Care Improvement⁵² is based on Langley's Model for Improvement⁵³ (Figure 2), which asks three questions: (1) What are we trying to accomplish? (2) How will we know that a change is an improvement? and (3) What changes can we make that will result in improvement? A good quality improvement intervention has these qualities:

- Meets community, client, and provider expectations and needs, as well as internationally accepted technical standards
- Focuses on systems and processes
- Uses data to analyze the service delivery process (e.g., Health Facilities Assessment)
- Encourages a team approach to ongoing problem solving and quality improvement

Where appropriate, programs also can train staff to regularly monitor the quality of obstetric care and ensure that essential systems are operational. Criterion-based audits can be used to reinforce established protocols and maintain health workers' knowledge and skills for managing obstetric complications.

Figure 2. Langley’s Model for Improvement



Key Quality Improvement Resources

- USAID, 2010. [Finding Common Ground: Harmonizing the Application of Different Quality Improvement Models in Maternal, Newborn, and Child Health Programs](#)
- Jhpiego, 2005. [Standards-Based Management and Recognition: A Field Guide](#)
- Lovich R, 2003. [Partnership Defined Quality: A Tool Book for Community and Health Provider Collaboration for Quality Improvement](#)
- ASSIST Project, 2012. [Applying Quality Improvement to Integrate Family Planning in Maternal Health and HIV Services](#)
- ASSIST Project, 2014. [Quality Improvement Technical Reference Material](#)
- Jhpiego, 2004. [Guidelines for Assessment of Skilled Providers After Training in Maternal and Newborn Healthcare](#)

MONITORING AND EVALUATION

“Monitoring and Evaluation (M&E) is an important and essential component of any intervention, project or program. M&E is the process in which data are collected and analyzed in order to provide appropriate information for use in program planning and management. The most effective way to ensure that a monitoring and evaluation plan is relevant to a program is to develop the M&E system at the same time as the project is being designed.” (CSTS+, M&E TRM, 2007. p.1).⁵⁴

To make informed decisions, managers need an M&E system that yields reliable and timely information on factors such as those in the following list:

- The health needs of the people in their catchment area
- The health priorities of the country, province, district, and communities they serve

- The quality and coverage of the health services they offer
- The resources (e.g., medicine and supplies) they have used and resources still available
- Progress in the implementation of their activities and toward desired outputs and outcomes⁵⁵

What is different about M&E of MNC programs compared with M&E of other programs? The answer in many ways is “not much.” The fundamental M&E principles (i.e., frameworks, indicators, and data sources) apply to MNC programs. The impacts—maternal and newborn mortality rates—are difficult to influence over the life of a typical 4- to 5-year project, but programs can use several internationally recognized and commonly reported indicators to assess changes. There is a long history of data collection on MNC outcomes through global survey programs, such as DHS and Multiple Indicator Cluster Surveys (MICS).

- **Outputs for MNC programs** are similar to those used in other programs, such as these examples:
 - Training outputs include measures such as the number of people trained in MNC activities, the cost per person trained, the percentage of training time spent practicing skills learned, and the percentage of trainees who could adequately perform a certain task.
 - Service outputs include measures such as the number of service delivery points that provide MNC services, the quality of MNC services offered at the delivery points, and the cost of increasing access and quality of MNC services.
- **Intermediate outcomes** typically include service use and behavior or practice indicators, such as those listed in Table 1.
- **Long-term impacts** typically include maternal and newborn mortality rates.

Tables 1 and 2 come from the CSHGP’s [KPC Survey, MNC module](#).

Table 1. Maternal Health Indicators: Pregnancy

Indicator	Definition	Key - LiST
Antenatal care		
1.1 Antenatal care (1+ visit)	Percentage of mothers of children ages 0–23 months who received one or more antenatal care visits from a skilled health provider	
1.2 Antenatal care (4+ visits)	Percentage of mothers of children ages 0–23 months who had four or more antenatal visits while pregnant with their youngest child	K-L
1.3 Iron tablets (possession)	Percentage of mothers of children ages 0–23 months who received or purchased any iron tablets during the most recent pregnancy while pregnant with their youngest child	
1.4 Iron tablets (consumption)	Percentage of mothers of children ages 0–23 months who took iron tablets for 90 or more days while pregnant with their youngest child	L*

Indicator	Definition	Key - LiST
1.5 Maternal tetanus toxoid vaccination (Neonatal tetanus protection)	Percentage of children ages 0–23 months protected at birth from neonatal tetanus through maternal tetanus toxoid immunization	L
1.6 HIV testing	Percentage of mothers of children ages 0–23 months who were tested for HIV and received their results while pregnant with their youngest child	
1.7 Syphilis screening	Percentage of mothers of children ages 0–23 months who were screened for syphilis while pregnant with their youngest child	L**
1.8 Tuberculosis testing (in high HIV prevalence areas)	Percentage of mothers of children ages 0–23 months who were tested for tuberculosis while pregnant with their youngest child	
1.9 Deworming treatment	Percentage of mothers of children ages 0–23 months who took deworming treatment while pregnant with their youngest child	
1.10 Counseling	Percentage of mothers of children ages 0–23 months who were counseled on the following topics while pregnant with their youngest child: <ul style="list-style-type: none"> • Danger signs during pregnancy, delivery, or postnatal (mother and newborn) • Nutrition during pregnancy • Rest during pregnancy • Self-care during pregnancy • Birth planning • Postpartum family planning • Breastfeeding 	
1.11 Urine test (for facility ANC)	Percentage of mothers of children ages 0–23 months who received a urine test during an ANC visit while pregnant with their youngest child	
1.12 Blood pressure taken	Percentage of mothers of children ages 0–23 months who had their blood pressure taken during an ANC visit while pregnant with their youngest child	
Malaria in pregnancy: prevention and care-seeking		
1.13 Intermittent preventive treatment for malaria during last pregnancy	Percentage of mothers of children ages 0–23 months who received IPT for malaria in the following categories ^{vii} : <ul style="list-style-type: none"> • 1 dose • 2 doses • 3 doses • 4+ doses 	K(3+)- L(2+)**

^{vii} Current World Health Organization recommendations are for women to receive three doses of IPT, but for programs to track progress, this indicator should be broken into categories by dose.

Indicator	Definition	Key - LiST
1.14 Long-lasting insecticide-treated nets use by women during pregnancy ^{viii}	Percentage of mothers of children ages 0–23 months who reported they slept under an ITN all of the time or most of the time during their most recent pregnancy	K-L***
1.15 Appropriate care-seeking for fever during last pregnancy	Percentage of mothers of children ages 0–23 months that had fever during pregnancy with the youngest child and sought care from an appropriate provider.	L****
Birth preparedness		
1.16 Birth preparedness (any)	Percentage of mothers of children ages 0–23 months who made birth preparations before the birth of their youngest child	
1.17 Birth preparedness: Money saved	Percentage of mothers of children ages 0–23 months who saved money for the birth of their youngest child	
1.18 Birth preparedness: Transportation plan (including emergency plan) in place	Percentage of mothers of children ages 0–23 months who had a transportation and emergency plan in place for the birth of their youngest child	
1.19 Birth preparedness: Birth companion decided	Percentage of mothers of children ages 0–23 months who decided on a birth companion before the birth of their youngest child	
1.20 Birth preparedness: Place to deliver decided	Percentage of mothers of children ages 0–23 months who decided on a place to deliver before the birth of their youngest child	
Misoprostol possession		
1.21 Misoprostol possession	Percentage of mothers of children ages 0–23 months who were given misoprostol to take immediately after they delivered their youngest child to prevent postpartum hemorrhage	

* Lives Saved Tool (LiST) indicator: Percentage of pregnant women receiving iron folate supplementation.

** LiST indicator: Percentage of pregnant women screened for syphilis with the rapid plasma reagent test and treated with 2.4 miu benzathine penicillin, if needed.

*** LiST is set up to include only one of the two of these indicators in any given projection.

**** LiST indicator: Percentage of pregnant women with malaria who are treated for malaria between contraception and 6 weeks after delivery.

^{viii} The indicator “LLIN [long-lasting insecticide treated nets] Use during Pregnancy” is not comparable to the indicator “Use of ITNs by Pregnant Women,” found in the Demographic Health Surveys and other large sample surveys. The Knowledge, Practice, and coverage Survey (KPC) does not have a large enough sample of currently pregnant women for this indicator to be calculated. Instead, the self-reported KPC indicator covering the previous pregnancy is meant to give project managers an idea about the practice of this behavior in the project area.

Table 2. Maternal Health Indicators: Labor and Delivery

Indicator	Definition	Key-LiST
2.1 Skilled birth attendant	Percentage of last-born children ages 0–23 months whose births were attended by skilled health personnel	K-L
2.2 Facility birth	Percentage of last-born children ages 0–23 months who were born in a health facility	K-L*
2.3 Caesarian section	Percentage of last-born children ages 0–23 months who were delivered by Caesarian section	K
2.4 Augmented delivery	Percentage mothers of children ages 0–23 months who were delivered using augmented delivery (induced or accelerated labor) when giving birth to their youngest child	
2.5 Assisted delivery	Percentage of mothers of children ages 0–23 months who, when giving birth to their youngest child, were delivered with forceps or vacuum or suction	
2.6 Misoprostol use	Percentage of mothers of children ages 0–23 months who took misoprostol immediately after they delivered their youngest child to prevent postpartum hemorrhage	

* In LiST, if the information is available, facility deliveries can be disaggregated by essential care, basic emergency obstetric care (BEmOC), and comprehensive emergency obstetric care (CEmOC) facilities; and home deliveries can be disaggregated by assisted and unassisted deliveries.

Table 3. Maternal Health Indicators: Respectful Maternal Care

Indicator	Definition	Key -LiST
3.1 Birth companion	Percentage of mothers of children ages 0–23 months who had a support person or birth companion during labor and delivery of their youngest child	
3.2 Birth position	Percentage of mothers of children ages 0–23 months who were allowed to choose their birth position when giving birth to their youngest child	
3.3 Disrespectful care (self)	Percentage of mothers of children ages 0–23 months who experienced disrespectful care or abuse during labor and delivery of their youngest child	
3.4 Disrespectful care (others)	Percentage of mothers of children ages 0–23 months who reported awareness that other women experienced disrespectful care or abuse during labor and delivery	
3.5 Facility recommendation	Percentage of mothers of children ages 0–23 months who would recommend the health facility to a friend or family member to give birth	

Table 4. Maternal Health Indicators: Post-Delivery Care

Indicator	Definition	Key - LiST
3.6 Postnatal care for mothers	Percentage of mothers of children ages 0–23 months who received postnatal care from an appropriately trained health worker within 24 hours of birth of their youngest child	K

Table 5. Maternal Health Indicators: Knowledge

Indicator	Definition	Key-LiST
3.7 Knowledge of pregnancy danger signs	Percentage of mothers of children ages 0–23 months who know at least two danger signs during pregnancy	
3.8 Knowledge of delivery danger signs	Percentage of mothers of children ages 0–23 months who know at least two danger signs during delivery	
3.9 Knowledge of maternal postpartum danger signs	Percentage of mothers of children ages 0–23 months who know at least two postpartum danger signs for the mother	

Table 6. Newborn Health Indicators: Pregnancy

Indicator	Definition	Key -LiST
6.1 Antenatal care (1+ visit)	Percentage of mothers of children ages 0–23 months who received one or more antenatal care visits from a skilled health provider	K
6.2 Antenatal care (4+ visits)	Percentage of mothers of children ages 0–23 months who had four or more antenatal visits while pregnant with their youngest child	K-L
6.3 Neonatal tetanus protection (maternal tetanus toxoid vaccination)	Percentage of last-born children ages 0–23 months protected at birth from neonatal tetanus through maternal tetanus toxoid immunization	K-L

Table 7. Newborn Health Indicators: Labor and Delivery

Indicator	Definition	Key- LiST
7.1 Skilled attendant at birth	Percentage of last-born children ages 0–23 months whose birth was attended by skilled health personnel	K-L
7.2 Facility birth	Percentage of last-born children ages 0–23 months who were born in a health facility	K-L*
7.3 Caesarian section	Percentage of last-born children ages 0–23 months who were delivered by caesarian section	K
7.4 Birth weight	Percentage of last-born children ages 0–23 months with a reported birth weight	K

* In LiST, if the information is available, facility deliveries can be disaggregated by essential care, BEmOC, and CEmOC facilities, and home deliveries can be disaggregated by assisted and unassisted deliveries.

Table 8. Newborn Health Indicators: Post-Delivery

Indicator	Definition	Key - LiST
8.1 Postnatal care for mothers	Percentage of mothers of children ages 0–23 months who received postnatal care from an appropriately trained health worker within 2 days of birth of their youngest child	K
8.2 Postnatal care for newborns	Percentage of last-born children ages 0–23 months who received postnatal care from an appropriately trained health worker within 24 hours of birth	K-L
8.3 Early initiation of breastfeeding	Percentage of last-born children ages 0–23 months who were put to the breast within the first hour after birth	K
8.4 Clean cord cut	Percentage of last-born children ages 0–23 months who had their umbilical cord cut with a clean instrument (non-facility births only)	
8.5 Thermal care: Immediate drying	Percentage of last-born children ages 0–23 months who were dried immediately after birth	
8.6 Thermal care: Skin-to-skin	Percentage of last-born children ages 0–23 months who were placed on the mother's bare chest immediately after birth	L*
8.7 Thermal care: Delayed bathing	Percentage of last-born children ages 0–23 months whose first bath was delayed until at least 6 hours after birth	L*
8.8 Cord care ^{ix}	Percentage of last-born children ages 0–23 months who had nothing harmful applied to the umbilical cord stump	
8.9 Feeding colostrum	Percentage of last-born children ages 0–23 months who were fed colostrum	
8.10 Pre-lacteal feeds	Percentage of last-born children ages 0–23 months who did not receive pre-lacteal feeds	
8.11 Prophylactic eye care	Percentage of last-born children ages 0–23 months who received appropriate preventive eye care within the first hour after birth	
8.12 Postnatal care signal functions	Percentage of last-born children ages 0–23 months who had at least two signal functions checked within 2 days of birth	

* Percentage of neonates whose mother delays the infant's bath and who practices skin-to-skin contact to maintain thermal control of the infant.

^{ix} Suggested indicator, but needs additional testing.

Table 9. Newborn Health Indicators: Maternal Knowledge

INDICATOR	DEFINITION	KEY - LIST
9.1 Knowledge of neonatal danger signs	Percentage of mothers of children ages 0–23 months who know at least two neonatal danger signs	

Key Resources for M&E

- MEASURE Evaluation, 2002. [Compendium of Maternal and Newborn Health Tools](#)
- MCHIP, 2014. MNC module of [KPC Survey](#)

Facility- and community-based assessments can investigate outcome measures; service delivery reviews can investigate elements of health system performance.

When a maternal, perinatal, or neonatal death occurs, the local health staff can conduct an audit (verbal or social autopsy in the community or perinatal-maternal death audit at the facility level) to help understand why it occurred and how to prevent maternal, perinatal, and neonatal deaths in the future.

Key Resources for Perinatal Death Audits

- [Perinatal Problem Identification Program](#) software, 2014
- Bailey P, et al., 2002. [Improving Emergency Obstetric Care Through Criterion-Based Audit](#)
- Measure Evaluation, 2007. [Sample Vital Registration with Verbal Autopsy](#)
- WHO, [A Standard Verbal Autopsy Method for Investigating the Causes of Death in Infants and Children](#)

SPECIAL CONSIDERATIONS

EQUITY

An equity approach targets the poorest with key interventions to achieve greater impact. Interventions often don't reach mothers and infants who are at the most risk. NGOs can conduct [equity assessments](#) to learn more about equity in their programming areas. Collecting appropriate information about the wealth of different segments of a population will enable analysis of key indicator coverage in different subpopulations and can inform planning and implementation to ensure the most vulnerable are reached effectively.

MHEALTH

Mobile Health, or mHealth, is the use of mobile devices, such as mobile phones, patient monitoring devices, tablets, and personal digital assistants, to improve health outcomes, health care services, and health research. The ubiquity of mobile devices in both developed and

developing countries presents an opportunity to improve health outcomes through the innovative delivery of health services and information. Following are some possible applications of mHealth:

- **Education and Awareness:** Messaging in support of public health and behavioral change campaigns
- **Diagnostic and Treatment Support:** Using point-of-care devices
- **Disease and Epidemic Outbreak Tracking:** Monitoring of disease incidence, outbreaks, and public health emergencies
- **Supply Chain Management:** Tracking supplies to improve stock-outs and combat counterfeiting
- **Remote Data Collection:** Collecting patient data in real time
- **Remote Monitoring:** Ensuring appointment or medication regime adherence
- **Healthcare Worker Communication and Training:** Connecting health workers with sources of information

Key Resources for mHealth in MNC programs

- [mHealth Alliance](#) is a diverse group that advances mHealth through research, advocacy, and support for the development of interoperable solutions and sustainable deployment models and hosts [Health Unbound \(HUB\)](#), an online knowledge resource center and interactive network for the global mHealth community.
- [Dimagi](#) is a social enterprise that makes open source software to improve healthcare in developing countries and for the underserved.
- CDC, 2011. [The Health Communicator's Social Media Toolkit](#)

Other Resources for mHealth

- Berg M, et al., 2009. [Every Child Counts: The Use of SMS in Kenya to Support the Community-Based Management of Acute Malnutrition and Malaria in Children Under Five](#)

ADVOCACY

Advocacy is an important component of an SBC strategy, and it can play a key role in MNC programming. National-level MNC programs can be strengthened through increased political commitment and leadership on the part of government officials and public administrators. Even programs that are primarily community-oriented have a role to play.

Convincing policymakers to take action requires evidence-based information, strategic thinking, strong advocacy skills, and persistence. In addition, increased advocacy efforts are needed among all audiences with the potential to influence leaders and society (e.g., CBOs, NGOs, religious and traditional leaders, the media, women's groups, and youth), as well as the public, to increase demand.

Looking at the benefits of MNC through a broader development lens, advocacy efforts need to encompass a range of activities that will help maintain high visibility and ensure that MNC is a central development intervention. Following are some examples of potential activities to achieve this goal:

- Ensure MNC is incorporated into national- and district-level strategies and budgets.
- Build the evidence base, and document proof of success.
- Maximize advocacy opportunities.
- Create and maintain coalitions of MNC champions.

Key Resource for Advocacy in MNC Programs

- [The White Ribbon Alliance](#)

GENDER

A woman's status and decision-making power in the community and her family will influence her health and health care-seeking behavior and, thus, have an influence on her pregnancy. A woman's decision to seek or not seek health care for herself and her family is influenced by her status and gender, as well as the opportunities and barriers that exist in her community. Gender-based violence is a particular concern.

Key Resource for Gender-Based Violence

- [UNICEF Training of Trainers on Gender-Based Violence: Focusing on Sexual Exploitation and Abuse](#)

ENGAGING MEN

Traditional MNC programs focus almost exclusively on women, failing to recognize that men play a significant role in maternal and newborn health decision making. In 1994, the Program of Action from the International Conference on Population and Development in Cairo highlighted the importance of involving men in reproductive health, recognizing that “‘male responsibilities and participation’ are critical aspects for improving reproductive health outcomes and achieving gender equality, equity, and empowering women” (USAID, 2003. p. 7).⁵⁶

Research has shown that men are willing to change their attitudes, beliefs, and behaviors relating to reproductive health when they are given the information and support to do so.⁵⁷ Involving men in MNC can occur as supportive partners or as agents of change around community norms. The appropriate information and education on the benefits of appropriate and quality MNC can encourage a man to support his partner during pregnancy, childbirth, and the postnatal period.

YOUTH

More than one billion young people are entering their reproductive years, with another two billion to follow, yet many young people lack basic information about services for reproductive and sexual health and access to those services.

The majority of adolescent pregnancy occurs within marriage, and girls under 18 who become pregnant are twice as likely to die of pregnancy-related complications as young women ages 20–24, and girls younger than age 15 may be five times as likely to die. Judgmental attitudes, locations of health centers, and inconvenient hours of services often make it difficult for youth to get the health services they need.

Youth-friendly reproductive health and prevention and management of STIs-HIV are central components of health services for youth. These services also should include age-appropriate education and counseling on responsible sexual behavior, FP, STI-HIV prevention, and pregnancy care, as well as counseling on gender-based violence and sexual abuse and referrals for help for both young men and women.

The active involvement of youth as partners in the planning and implementation programs can help ensure that the program is relevant to their needs, increases ownership, and takes advantage of young people's expertise and energy in developing strategies and messages for effectively reaching their peers.

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<http://www.basics.org/documents/CHW-training-guide-Final-1.pdf>

Improving Outcomes with Community Health Workers: Unit 7

https://www.ghdonline.org/uploads/PIH_Program_Management_Guide_Unit_7_-_Improving_outcomes_with_community_health_workers.pdf

Lay Health Worker Attrition: Important but Often Ignored.

<http://www.who.int/bulletin/volumes/89/12/11-087825/en/index.html>

Community Health Worker Assessment and Improvement Matrix (CHW AIM): A Toolkit for Improving CHW Programs and Services

<http://www.hciproject.org/node/1224>

Integrated Maternal and Newborn Care: Supervisory and Evaluation Checklists

http://www.basics.org/documents/Supervisory-and-Evaluation-Checklists_Newborn-Toolkit_BASICCS.pdf

Key Resources for Counseling:

Counseling for Maternal and Newborn Health Care

http://www.who.int/maternal_child_adolescent/documents/9789241547628/en/index.html

Comprehensive Counseling for Reproductive Health: An Integrated Curriculum

http://www.engenderhealth.org/files/pubs/counseling-informed-choice/ccrh_ph.pdf

Key Resource for MNC Training:

Home-Based Life Saving Skills

<http://www.midwife.org/Home-Based-Life-Saving-Skills-HBLSS>

Key Resources for Quality Improvement:

Finding Common Ground: Harmonizing the Application of Different Quality Improvement Models in Maternal, Newborn, and Child Health Programs

http://www.coregroup.org/storage/documents/ME/Finding_common_ground.pdf

Standards-Based Management and Recognition: A Field Guide

<http://www.jhpiego.org/files/SBMR%20FieldGuide.pdf>

Partnership Defined Quality: A Tool Book for Community and Health Provider Collaboration for Quality Improvement

<http://www.healthynetwork.org/resource/partnership-defined-quality-tool-book-community-and-health-provider-collaboration-quality-i>

Applying Quality Improvement to Integrate Family Planning in Maternal Health and HIV Services

<https://www.usaidassist.org/resources/applying-quality-improvement-integrate-family-planning-maternal-health-and-hiv-services>

Guidelines for Assessment of Skilled Providers After Training in Maternal and Newborn Healthcare

<http://www.jhpiego.org/files/GdlnsSkillProvEN.pdf>

Improving Emergency Obstetric Care Through Criterion-Based Audit

<http://www.amddprogram.org/v1/resources/CriterionBased%20AuditEN.pdf>

KPC Survey, MNC module

http://www.mchipngo.net/controllers/link.cfc?method=tools_mande

Key Resources for M&E:

Compendium of Maternal and Newborn Health Tools

<http://www.cpc.unc.edu/measure/publications/ms-02-09>

KPC Survey

http://www.mchipngo.net/controllers/link.cfc?method=tools_mande

Key Resources for Perinatal Death Audits :

Perinatal Problem Identification Program

<http://www.ppip.co.za/>

Improving Emergency Obstetric Care Through Criterion-Based Audit

<http://www.amddprogram.org/v1/resources/CriterionBased%20AuditEN.pdf>

Sample Vital Registration with Verbal Autopsy

<http://www.cpc.unc.edu/measure/publications/cl-07-03>

A Standard Verbal Autopsy Method for Investigating the Causes of Death in Infants and Children

<http://www.who.int/csr/resources/publications/surveillance/whocdscsr994.pdf>

Equity Assessments

http://www.mchipngo.net/controllers/link.cfc?method=tools_ppandi

Key Resources for mHealth in MNC programs:

mHealth Alliance

<http://www.mhealthalliance.org/>

Health Unbound (HUB)

<http://www.healthunbound.org/>

Dimagi

<http://www.dimagi.com/>

The Health Communicator's Social Media Toolkit

http://www.cdc.gov/socialmedia/tools/guidelines/pdf/socialmediatoolkit_bm.pdf

Every Child Counts: The Use of SMS in Kenya to Support the Community-Based Management of Acute Malnutrition and Malaria in Children Under Five

http://www.childcount.org/reports/ChildCount_Kenya_InitialReport.pdf

Key Resource for Advocacy in MNC Programs

The White Ribbon Alliance

<http://www.whiteribbonalliance.org/>

Key Resource for Gender-Based Violence:

UNICEF Training of Trainers on Gender-Based Violence: Focusing on Sexual Exploitation and Abuse

http://www.un.org/en/pseataaskforce/docs/unicef_training_of_trainers_on_sea_facilitator_manual.pdf

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