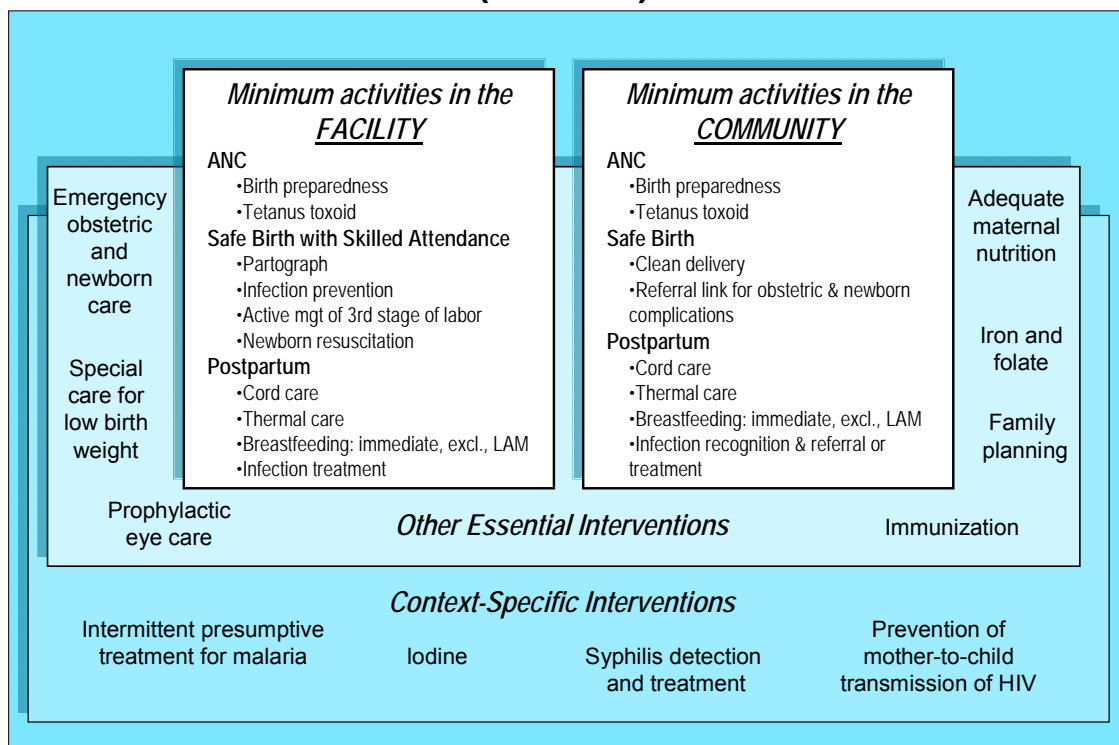




**USAID**  
FROM THE AMERICAN PEOPLE

**UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT  
BUREAU FOR GLOBAL HEALTH  
OFFICE OF HEALTH, INFECTIOUS DISEASE, AND NUTRITION  
Child Survival and Health Grants Program**

**Minimum Activities for Mothers and Newborns  
(MAMAN)**



USAID May, 2007

GH/HIDN is grateful for the many contributions to this document from public health specialists consulted through the Macro International Inc. Child Survival Technical Support plus Project, other USAID-funded contracts, offices of USAID, and Private Voluntary Organizations.



### I. Introduction

Over the last several years, there have been many advances in consolidating the evidence base for Maternal and Newborn Care (MNC) interventions. For maternal care, this includes—

- ◆ Recognition that most deaths occur in the postpartum period and that programs needed to be adjusted accordingly
- ◆ Better understanding of emergency obstetric care (EmOC)
- ◆ Enhanced appreciation of the role that community mobilization, birth preparedness, and postnatal care can make on increasing access to quality MNC services.

Newborn care was largely neglected until the late 1990s. Since then, there has been a growing appreciation of the need to address neonatal mortality, particularly as its relative contribution to overall infant mortality rate (IMR) and under-five mortality rate (U5MR) has been rising. There have been several concerted global efforts to develop policies, protocols, and programs to address the newborn. For example, until quite recently the Integrated Management of Childhood Illness (IMCI) protocol did not provide any guidance for managing sick newborns under 2 months old. Now there is a global effort, facilitated by the World Health Organization (WHO), to develop guidelines for the sick neonate at both the facility and community level. In 2005, the *Lancet* published a series of articles that documented significant impact toward the reduction of neonatal mortality by scaling up evidenced-based, well-known neonatal interventions, such as early initiation of breastfeeding/colostrum, clean delivery practices, tetanus toxoid (TT) immunization, and keeping the baby warm. This indicates that while the interventions to improve newborn survival are known, wide-scale implementation is needed to address this issue.

Many private voluntary organizations (PVOs) and nongovernmental organizations (NGOs) have been involved in the efforts to develop and promote MNC best practices (e.g., White Ribbon Alliance, Saving Newborn Lives). Given the rapidly changing nature of the MNC field, the U.S. Agency for International Development (USAID), Bureau for Global Health (GH), Office of Health, Infectious Diseases, and Nutrition (HIDN), Child Survival and Health Grants Program thought this was a good opportunity to review PVO/NGO programming in light of the current best evidence. In this regard, USAID, Child Survival Technical Support Project plus (CSTS<sup>+</sup>), other USAID-funded project staff, and the CORE Group Safe Motherhood and Reproductive Health Working Group have reviewed the Essential Maternal and Newborn (EMN) Interventions as defined in the Technical Reference Materials<sup>1</sup> (TRMs) and selected a package of Minimum Activities for Mothers and Newborns (MAMAN) with a special focus on maternal and newborn health interventions to guide PVO/NGO programming. The group has also identified a core set of indicators to track and report on the progress of the minimum package of maternal and newborn interventions.

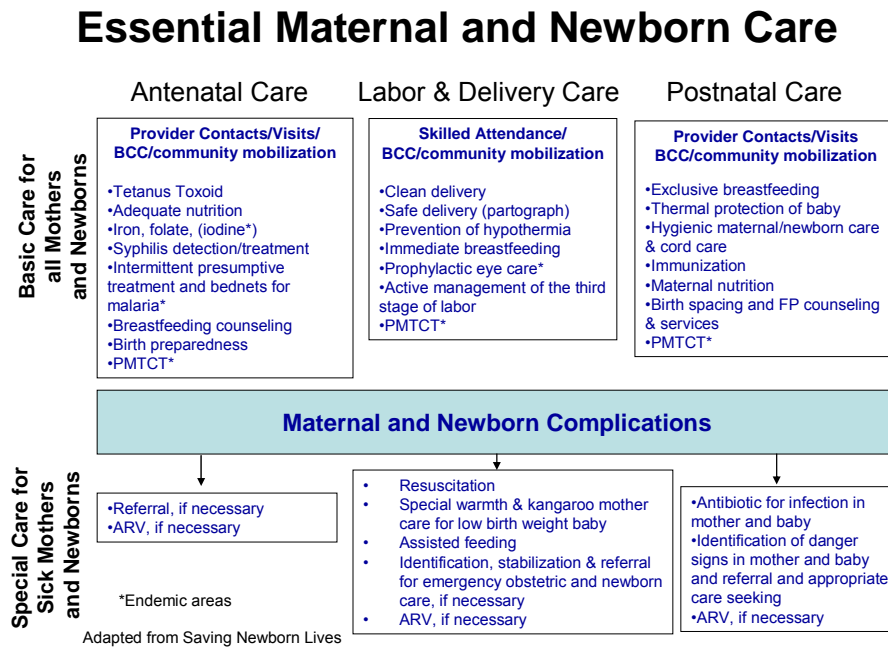
### II. Essential Maternal and Newborn Interventions

The TRMs developed by CSTS<sup>+</sup> and USAID provide guidelines to all the key interventions necessary to address maternal and newborn health, with the recognition that mothers and babies are entitled to all of the essential MNC services. Figure 1 outlines all the interventions that need to be in place for a comprehensive country program. (See page 7 of the MNC Technical Reference Materials.)

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<sup>1</sup> MNC Technical Reference Materials <http://www.childsurvival.com/documents/trms/tech/Maternal%20and%20Newborn%20Care%202005.doc>

Figure 1: Essential Maternal and Newborn Care Interventions



A coordinated effort among different sectors (e.g., public, private) and a wide variety of organizations (e.g., civil society groups, NGOs, professional organizations) is required to ensure that mothers and their newborns have access to all these services. PVOs/NGOs have been implementing many of the MNC activities listed above (e.g., TT, maternal nutrition, exclusive breastfeeding), other interventions may be newer to some PVOs/NGOs (e.g., focusing on neonatal danger signs, early postpartum visits). The introduction of Essential Maternal and Newborn Care Interventions and now the Minimum Package of Activities will thus continue to reinforce existing programs.

### III. Minimum Activities for Mothers and Newborns

#### A. Purpose

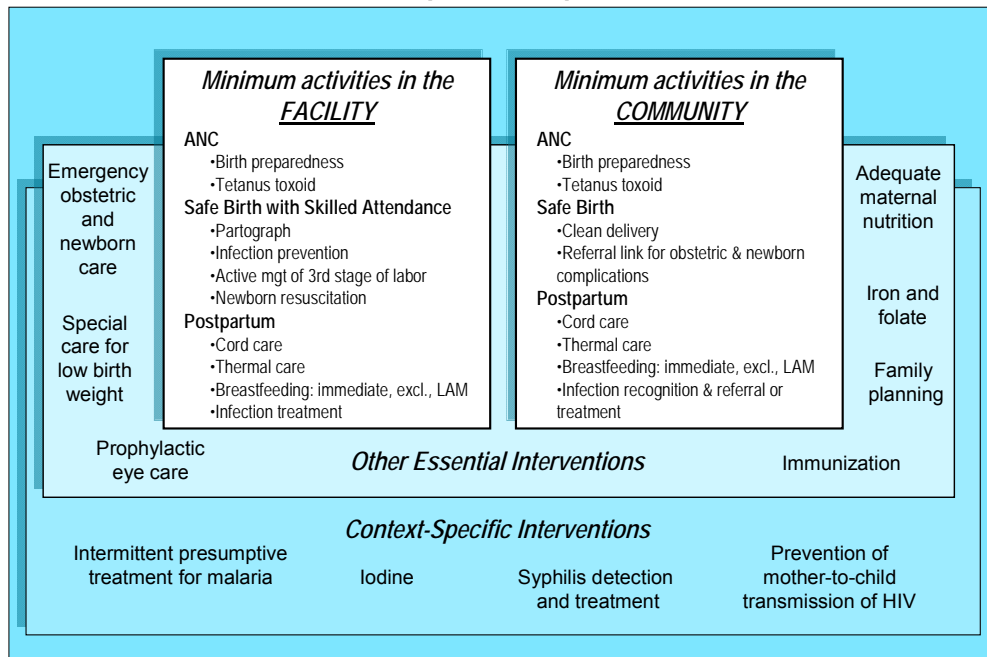
While the final goal of the Child Survival and Health Grants Program (CSHGP) grants is to enable mothers and their newborns to access high-quality MNC services, PVOs/NGOs cannot achieve this aim alone. Through a collaborative process among USAID, CSTS<sup>+</sup>, and the PVOs/NGOs, the MAMAN framework has been developed to identify a subset of the above Essential Maternal and Newborn Care Interventions that would comprise the basic minimum high-impact MNC interventions that PVOs/NGOs can and should implement within the resource limitations of their health programs, such as one funded by a CSHGP grant. These interventions were prioritized based on—

- ◆ Level of impact on maternal and neonatal mortality/morbidity
- ◆ PVO/NGO core competencies and capacity to successfully implement the interventions within the resource limitations of CSHGP grants
- ◆ Priority interventions of other CSHGP program areas (e.g., malaria, nutrition, HIV/AIDS)

◆ Feasibility of implementation.

We hope that the MAMAN framework (as illustrated in figure 2) will provide more consistency across programs leading to greater program impact on reducing mortality. If PVOs/NGOs have a considerable MNC capacity or have additional resources, either through matching funds or other projects or programs, we strongly encourage them to add other Essential Maternal and Newborn Care Interventions. In the context of a PVO/NGO project, depending on the proposed intervention mix and the local epidemiological situation, we also expect that some “Other Essential Interventions” and “Context-Specific Interventions” will be implemented under other intervention categories such as malaria, nutrition, HIV/AIDS, child spacing or immunization. These interventions are described in Section V (Phase II: Other Essential Interventions).

**Figure 2: MAMAN Framework  
Minimum Activities for Mothers and Newborns  
(MAMAN)**



USAID May, 2007

**B. Implementation of MNC Interventions**

The mother and fetus/neonate have a symbiotic relationship; what affects the mother, affects the newborn. For example, TT vaccination is given to the mother but it is largely to prevent neonatal tetanus. Thus, many MNC interventions affect both the mother and the newborn.

Timing is key for critical interventions for both mother and newborn. Studies have documented that 25 to 45 percent of maternal deaths occur within 24 hours from delivery and a total of 60 percent of deaths occur in the first week after delivery. Neonatal mortality comprises the greatest proportion of infant mortality (40–66%). Among newborns, about 50 percent of deaths occur within the day of birth and about 75 percent occur within the first week. Thus, 0–7 days is a critical time for the health and survival of the mother and newborn. (See Annex I for more information on maternal, perinatal, and neonatal mortality.)

## Minimum Activities for Mothers and Newborns

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Table 1 outlines the minimum package of maternal and newborn interventions and outlines how these minimum MNC interventions (in the center column) benefit the mother and the newborn (side columns). Many of these interventions can take place at a facility and/or in the community, including in the household, which is also indicated.

**Table 1: MAMAN Interventions and their Benefits for Mothers and the Newborns**

<b>Benefit to mother</b>	<b>Intervention</b>	<b>Benefit to newborn</b>
<b>During Pregnancy</b>	<b>During Pregnancy</b>	<b>During Pregnancy</b>
Reduced risk of tetanus	← <b>Administration of tetanus toxoid vaccine</b> → <i>Facility and community</i>	Protect against neonatal tetanus
Early problem identification/ timely referral	← <b>Birth preparedness - complication readiness</b> → <i>Home, community, and facility</i>	Early problem identification/ timely referral
<b>During Labor/Delivery</b>	<b>During Labor/Delivery</b>	<b>During Labor/Delivery</b>
Improved labor mgt/early identification/mgt of complications	← <b>Delivery with skilled attendant/partograph</b> → <i>Home, community, and facility</i>	Reduced neonatal asphyxia; neonatal resuscitation if needed
Reduced risk of sepsis and death	← <b>Infection prevention/clean delivery</b> → <i>Home, community, and facility</i>	Reduced risks of tetanus, sepsis, deaths
Reduced risk of hemorrhage	← <b>Active mgt of 3rd stage of labor</b> → <i>Mostly facility</i>	Increases maternal survival
Enhanced bonding	← <b>Wrap/dry and promote skin-to-skin contact</b> → <i>Home, community, and facility</i>	Enhanced thermal regulation
Assist in uterine contraction Enhanced bonding	← <b>Initiate breastfeeding w/in 1 hr</b> → <i>Home, community, and facility</i>	Nutrition/antibodies Enhanced thermal regulation
Early problem identification/ timely referral	← <b>Referral for complications</b> → <i>Home, community, and facility</i>	Early problem identification/ timely referral
<b>Immediate Postpartum Period (0–7 days)</b>	<b>Immediate Postpartum Period (0–7 days)</b>	<b>Immediate Neonatal Period (0–7 days)</b>
Reduced risk of sepsis and death	← <b>Infection prevention/clean cord care</b> → <i>Home, community, and facility</i>	Reduced risks of tetanus, sepsis, deaths
Enhanced bonding	<b>Wrap/dry and promote skin-to-skin contact</b> → <i>Home, community, and facility</i>	Enhanced thermal regulation
Reduced risk of breast abscess, avoid risks of unintended or too closely spaced pregnancy and promotes maternal/infant bonding.	← <b>Promotion of colostrum/exclusively breastfeeding (BF) and LAM</b> → <i>Home, community, and facility</i>	Prevent early hypoglycemia, dehydration; reduced neonatal jaundice and sepsis/acute lower respiratory track infection (ALRI) Avoid risks associated with early weaning

Source—Adapted from *CARE: The Healthy Newborn: A Reference for Program Managers*, 2002

Each intervention will be discussed in some detail and by time period: a) during pregnancy; b) during labor and delivery; c) after delivery, including postpartum for the mother and postnatal for the newborn.

**a. Antenatal Interventions**

**1. Birth Preparedness**

The concept of birth planning/preparedness began in the late '90s as a way to help women and their families prepare for clean deliveries and foster timely referrals for complications. While birth plans vary by country, key elements include—

- ◆ Knowledge of what to expect and planning for complications
- ◆ Importance of having someone at the birth, preferably a skilled birth attendant (SBA) or a trained traditional birth attendant (TBA) if a SBA is not available
- ◆ Clean delivery supplies
- ◆ Savings and a transportation plan for when/if complications should arise
- ◆ Knowledge of danger signs for mother and/or newborn and knowledge of appropriate referral facility (e.g., able to provide EmOC services).

**2. Administration of TT vaccine**

Despite an increasing coverage of women of childbearing age with at least two doses of TT, neonatal tetanus, which has a high case-fatality rate, is in many countries still a major public health problem and is globally responsible for about 7 percent of all neonatal deaths (*Lancet* articles). Immunization of the mother can help protect the newborn from tetanus. Table 2 outlines the recommendation for TT among pregnant women.

**Table 2: Recommended TT doses and Effectiveness**

Pregnancy	Recommended dose	Protection Levels
First Pregnancy	2 doses if woman has not been immunized previously	80–90% after 2nd dose
Second Pregnancy	1 dose	95–98% after 3rd dose
Third Pregnancy	1 dose	
Fourth Pregnancy	1 dose	Throughout childbearing yrs

The protection of the newborn is determined by the immunization status of the mother. In order to protect neonates, previously non-immunized women should receive at least two doses of TT or tetanus-diphtheria (Td) toxoid vaccine during their first pregnancy and one dose of TT or Td during each subsequent pregnancy up to a maximum of five doses (see also immunization TRM module). As shown in table 3, protective antibody levels are attained in 80–90 percent of individuals after the second dose and in 95–98 percent of women after the third dose. A three-dose course of TT or Td provides protection against maternal and neonatal tetanus for at least 5 years. Fifth doses of TT or Td given later prolong the duration of immunity throughout the childbearing years and possibly longer. Some programs may however opt to give a booster dose during each consecutive pregnancy.

PVOs/NGOs have a good track record in improving TT coverage in their intervention areas, and the CSHGP has monitored their achievements in this area over several years. Even in areas with a good TT coverage, efforts are necessary to maintain and if possible improve coverage. This measure is additional to the use of clean practices during delivery and the proper care of the infant’s umbilical cord.

**b. Safe Birth**

WHO recommends that every delivery should be conducted with a SBA. A skilled attendant is a “health professional who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) labor and delivery, recognize the onset of complications, perform essential interventions, start treatment, and supervise the referral for mother and baby for interventions that are beyond their competence or are not possible in the particular setting” (modified from WHO, 2004). Some of the skills required include competence to monitor the progress of labor and delivery, including the use of a partograph; performing infection prevention; active management of the third stage of labor (AMTSL) to prevent postpartum hemorrhage (PPH); and the ability to conduct newborn resuscitation, if needed. In general, the SBA is midwife, doctor, or nurse; but, depending on the setting, other health care providers such as auxiliary nurse-midwives, community midwives, village midwives, and health visitors may also have acquired appropriate skills if they have been specially trained.

It is estimated that overall 50 percent of deliveries do not have a SBA present during deliveries. In many areas where PVOs/NGOs operate, coverage is much lower and alternative strategies have been developed to bridge this gap. Many PVOs/NGOs have worked with communities and have built the capacity of local health providers, such as traditional birth attendants, enabling them to recognize life-threatening situations in the mother and newborn that need referral to a skilled provider and to improve their skills to assist mothers in having safe and clean births.

**3. Clean Delivery and Infection Prevention**

It is estimated that infections contribute to 11–15 percent<sup>2</sup> of all maternal deaths in developing countries. In addition, infections (particularly tetanus) are estimated to contribute between 30–40 percent<sup>3</sup> to neonatal mortality. There are two main issues contributing to infections:

- ◆ Poor hygienic practices—limited knowledge and appreciation among providers about infection transmission, poor hand washing, reuse of supplies
- ◆ Cultural practices (e.g., cow dung on the cord, spiritual treatments)

Clean delivery, including clean cord care for the prevention of newborn infections (e.g., tetanus and sepsis) is **essential in both home and facility childbirths**. Infection prevention practices are essential in health facilities.

“Clean” practices for any delivery include—

- ◆ Clean delivery surface (e.g., plastic sheeting)
- ◆ Clean hands (or gloves) of the birth attendant and family members (clean water and soap)
- ◆ Clean perineum; do not insert anything that is not clean into the vagina (e.g., oil, hands)
- ◆ Clean instrument to cut the cord (e.g., new blade, boiled scissors)
- ◆ Clamping/tying of the umbilical cord with clean string
- ◆ Clean cloth to dry and wrap the baby.

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<sup>2</sup> Khan, K. S., D. Wojdyla, L. Say, A. M. Gülmezoglu, P. F. Van Look. 2006. WHO analysis of causes of maternal death: A systematic review. *Lancet*, 367(9516), 1066–1074.

<sup>3</sup> Lawn, J. E., S. Cousens, J. Zupan. 2005. 4 million neonatal deaths: When? Where? Why? *Lancet*, 365(9462), 891–900.



In facility and even in home deliveries, having a SBA is the ultimate goal. Before this goal can be attained, especially in areas where home births are the majority, educating family members and TBAs on simple hygienic practices (see above) and encouraging them to use clean birth kits has proven very beneficial.

#### **4. Referral link to emergency obstetric and newborn care**

Experience has shown that it is important to ensure a functional referral system to address adequately the needs of women and their newborns. In addition to the medical causes of neonatal deaths, there are issues related to the health care system and to economic and social-cultural barriers that hamper women and their newborns from receiving high-quality care. These barriers are often referred to as the four delays:

- 1) Delay in problem identification
- 2) Delay in decision making
- 3) Delay in accessing quality services
- 4) Delay in receiving quality health services.

PVOs/NGOs can play an important role in the effort to reduce these four delays. *Even if the PVO/NGO works primarily at the community level, it is important to foster links with the health facilities* to ensure that women and newborns are appropriately referred to a facility that is equipped to provide them with emergency care. Many PVOs/NGOs have contributed to the establishment of emergency funds for transport and care. (Improving the capacity of facilities to provide emergency care might be a longer-term effort, but needs to be addressed nonetheless—see Phase II: Other Essential Interventions)

#### **5. Partograph<sup>4</sup>**

The modified WHO partograph, shown in Annex II<sup>5</sup>, is a useful tool for midwifery/health staff to assess the progress of labor and guide decisions to intervene as necessary. A partograph must be started only when a woman is in labor and monitors three main components:

- ◆ Maternal condition—including vital signs and key interventions provided during labor
- ◆ Fetal condition—including fetal heart rate, amniotic fluid, moulding, etc.
- ◆ Progress of labor—including cervical dilatation, uterine contractions, descent of fetal head

Studies have shown that using the partograph can be highly effective in identifying and reducing complications early for the mother (such as eclampsia and obstructed labor, which affects the newborn as well).

The partograph may also contain additional information such as the practice of AMTSL and use of oxytocin for the prevention of PPH.

#### **6. Active Management of the Third Stage of Labor**

AMTSL is an evidence-based, low-cost intervention used to prevent postpartum hemorrhage. Studies found clear evidence that AMTSL significantly reduces PPH, decreases blood loss, and decreases the need for blood transfusions. The current components of AMTSL include—

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<sup>4</sup> In many settings known as partogram

<sup>5</sup> From Managing Complications in Pregnancy and Childbirth - A guide for midwives and doctors at) [http://www.who.int/reproductive-health/impac/Clinical\\_Principles/Normal\\_labour\\_C57\\_C76.html#C75%20Initial%20care%20of%20the%20newborn](http://www.who.int/reproductive-health/impac/Clinical_Principles/Normal_labour_C57_C76.html#C75%20Initial%20care%20of%20the%20newborn)

- ◆ Administration of an uterotonic agent within 1 minute of birth; oxytocin (10 units) is the drug of choice (*primarily in the facility, but is also possible in the community where skilled birth attendants are available*). The drug misoprostol has been shown to be safe and effective, particularly in community settings where storage conditions are not favorable for oxytocin and where there are no skilled birth attendants.
- ◆ Controlled cord traction (facility and home if skilled attendant is available).
- ◆ Uterine massage after delivery of the placenta (*home and facility*).

As noted in the above section, information on the practice of AMTSL may be recorded on the partograph or in the delivery log.

### 7. **Newborn Resuscitation**

WHO estimates that between 1–5 percent of all babies—about 6 million annually—will require resuscitation at birth. Of these 6 million, about 1 million will die; an unknown number will have long-term disabilities. Many of these babies could be saved with very basic resuscitation techniques.

Studies have found that 80 percent of babies requiring resuscitation (4.8 million) only needed an “ambu” bag and mask, room air, and mild stimulation for successful resuscitation<sup>6</sup>. This means that oxygen and more complex procedures such as intubation **are not** necessary to the majority of newborns requiring assistance in breathing.

The main barriers to effective resuscitation are lack of competent staff and simple equipment. Some newborn resuscitation practices that should be discouraged are holding the baby upside-down, heavy suctioning of the back of throat, and slapping the baby. Care after resuscitation is also vital for the newborn. A baby that has been successfully resuscitated will require close observation for at least the first 12 hours. This baby is at greater risk of developing hypoglycemia, and if the brain was hypoxic for a significant period, the baby may start convulsing a few hours after birth.

### c. **Postpartum Period and Newborn Care**

#### **Immediate Postpartum Period**

WHO recommends visits 6 hours, 6 days, and 6 weeks postpartum for both the mother and the newborn. This can programmatically be challenging to implement; at a minimum, mothers should be seen within the first 24 hours to identify postpartum hemorrhage, signs of infection, and eclampsia. A visit in the first week between days 3–6 is recommended to assess signs of sepsis and feeding/breastfeeding problems. Table 3 provides the content and timing of visits adapted from WHO guidelines and based on field experience, for both home births and institutional deliveries.

**Table 3: Timing and Content of Postpartum Visits (for Mothers)**

<b>Visit</b>	<b>Key Tasks</b>	<b>Home Delivery</b>	<b>Facility Delivery</b>
<b>First 24 hrs</b>	Check for severe bleeding - uterine rupture. Check for Severe abdominal pain. Check for eclampsia. Encourage & support breastfeeding	SBA should visit within this time. If not available, trained community health worker (CHW) or TBA who recognizes key danger signs should check on the mother and refer if necessary.	Mothers should be strongly encouraged to stay in the facility for 24 hours. They should be thoroughly checked prior to discharge.

<sup>6</sup> Basic newborn resuscitation: A practical guide WHO/RHT/MSM/98.1 [http://www.who.int/reproductive-health/publications/MSM\\_98\\_1/basic\\_newborn\\_resuscitation.pdf](http://www.who.int/reproductive-health/publications/MSM_98_1/basic_newborn_resuscitation.pdf)

## Minimum Activities for Mothers and Newborns

Visit	Key Tasks	Home Delivery	Facility Delivery
<b>3–6 days</b>	Check for severe abdominal pain, infection, and discharge (lochia). Support BF/EBF Counsel on LAM, and return to fertility. Postpartum vitamin A. Schedule six week visit for mom and baby.	Go to health facility (HF)/SBA. If not available, CHW or TBA checks for danger signs, especially infection, and refers if necessary.	Go to HF/SBA for postpartum visit. If not available, CHW or TBA checks for danger signs and refers if necessary.
<b>6 wks</b>	Reinforce, support EBF/LAM Discuss desires for spacing / limiting next pregnancy. Counsel and offer FP method.	Go to HF/SBA or have CHW/TBA visit at home.	Go to HF/SBA or have CHW/TBA visit at home.

Newborns also need postnatal care during the same time period, but areas to be assessed differ. In the first 24 hours, the key issues to monitor are breathing, feeding, jaundice, and any bleeding from the cord. A visit in the first week between days 3–6 is recommended to assess signs of infection/sepsis and feeding problems. Table 4 provides the content and timing of visits that have been adapted from WHO guidelines (based on field experience) for both births at home and in facilities.

**Table 4: Timing and Content of Newborn Visits**

Visit	Key Tasks	Home Delivery	Facility Delivery
<b>First 24 hrs</b>	Monitor breathing; encourage/support EBF; check for jaundice, bleeding from the cord, redness/pus around cord; maintain warmth; immunization.	Visited by a SBA. If not available, home visit by CHW or TBA, who are trained to recognize danger signs and refer if necessary.	Mothers should be strongly encouraged to stay 24 hours, and newborn should be assessed prior to discharge from facility.
<b>3–6 days</b>	Check infection, discharge or bleeding from cord; check for tetanus; provide immunizations (BCG/OPV); check/support EBF	Go to HF/SBA. If not available, home visit by community health worker or TBA, who are trained to recognize and refer for danger signs, particularly infection.	Go to HF/SBA for postnatal visit. If not available, trained CHW or TBA makes home visit to check for danger signs and refer is necessary.
<b>6 wks</b>	Immunization; Weight Monitoring. Check/support EBF	Go to HF/SBA or link to outreach service.	Go to HF/SBA or link to outreach service.

### 8. Cord Care

In addition to clean cord care during delivery, during the postnatal period the umbilical cord stump should be kept clean and dry until it shrivels and, within a few weeks, eventually falls off. Daily, mothers can clean the stump and keep it dry (exposing it to air and keeping the “diaper” folded below the cord to keep urine from soaking it). If the stump becomes infected, it will require medical treatment, so alert mothers to signs of infection:

- ◆ Pus at the base of the cord
- ◆ Red skin around the base of cord
- ◆ Crying when touching the cord or the skin next to it.

### 9. Thermal Care

Thermal protection (the prevention and/or management of neonatal hypothermia) is an essential part of immediate newborn care. A newborn is most sensitive to hypothermia during **the first 12 hours after birth**. Hypothermia can occur if a newborn is left wet, unprotected from cold while waiting for the

placenta to be delivered. If they are not protected, babies can develop hypothermia in even a moderate or warm environment.

As body temperature decreases, the baby becomes lethargic/weak, less active, hypotonic, and unable to suck. If the condition progresses, the newborn may develop serious conditions like impaired cardiac function, hemorrhage (especially pulmonary), jaundice, and eventually die.

Interventions to prevent hypothermia<sup>7</sup> include—

- ◆ Ensuring that the delivery room/environment is warm without any drafts (e.g., open windows)
- ◆ Drying the baby immediately after delivery; do not wait till the placenta is delivered
- ◆ Wrapping the baby with clean dry cloth
- ◆ Keep baby close to mother; skin-to-skin contact or kangaroo mother care
- ◆ Postpone bathing for first 24 hours
- ◆ Keep baby wrapped with head covered (babies lose body heat through their heads).

### **10. Immediate, Exclusive Breastfeeding and LAM**

Breastfeeding is the best possible nutrition for newborns and infants and is a cornerstone of child health. The United Nations Children’s Fund (UNICEF) and WHO recommend that all women breastfeed their children exclusively for the first 6 months. **Initiating breastfeeding within the first hour** after birth provides the neonate with the best nutrition and maternal antibodies. It also promotes bonding, and skin-to-skin contact plays a key role in keeping the newborn warm and reducing the risk of hypothermia. Immediate suckling also promotes milk production, helping to establish sufficient quantities of milk.

Early initiation of breastfeeding also benefits the mother by stimulating uterine contraction, reducing PPH. Studies have found that mothers who initiate feeding within the first hour after birth were more likely to successfully breastfeed and better able to maintain optimal breastfeeding behaviors. While breastfeeding, mothers should be encouraged to eat greater quantities of nutritious foods and drink plenty of fluids.

In many cultures, colostrum is seen as dirty and thrown away. Colostrum has the largest concentration of nutrient and antibodies to protect the newborn. Women should be encouraged to give colostrum and avoid giving any prelacteal feeding (any liquids/foods given before breastfeeding is initiated) or supplementing breastfeeding until the baby is 6 months old.

Exclusive breastfeeding is also protective against pregnancy. When educating the mother about exclusive breastfeeding, also counsel her about LAM. LAM counseling helps to reinforce EBF, and should include information about the following:

**Correct use of LAM (three criteria):**

- Fully or nearly-fully breastfeeding
- Baby is less than six months old
- Menses has not returned.

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<sup>7</sup> Source: CARE, The Healthy Newborn: A Reference for Program Managers 2002

### **Return to fertility**

- If any of the three criteria for correct use of LAM are not met, pregnancy can occur, even without the return of menses. She should be counseled to begin using an appropriate FP method. (see Other Essential Interventions, Postpartum Contraceptive Options chart page 23)
- Note: If the woman is not breastfeeding, the average return to fertility is 45 days, meaning that many women become fertile sooner, even without return of menses. She should be counseled about appropriate FP methods and when to begin using them (see chart page 23)

For breastfeeding in high HIV/AIDS prevalence areas, see Section V (Other Essential Interventions; Context Specific Interventions; PMTCT of HIV/AIDS; Infant feeding counseling).

## **11. Referral and Treatment of Maternal and Newborn Infections**

Assuring prompt recognition, referral, and early treatment of maternal and newborn infection is essential. Caregivers should be attentive of early signs of infection and promptly institute adequate treatment, including transport to a referral facility.

Puerperal infections are still a major cause of maternal mortality in developing countries, partly because of poorly observed rules of cleanliness and unhygienic labor and delivery practices (lack of gloves, clean water, soap, etc.). The clinical picture of infections is fairly uniform. Fever (temperature  $>38.0^{\circ}\text{C}$ ) is the main clinical symptom. Often no other symptoms are present, and a source of infection cannot be found. Sometimes the uterus is tender. Elevated temperature ( $>38^{\circ}\text{C}$ ) during labor is always an alarming sign and is often followed by serious postpartum infections. The treatment is antibiotics and, if required, referral to the first referral level. The choice of antibiotics will differ from country to country due to local availability, patterns of causal agents, and antibiotic susceptibility.

Infections/sepsis is one of the major causes of mortality in newborn infants. The two principal sources of neonatal infection are the mother and the environment. “Clean delivery and infection prevention” as described above are thus essential to the MAMAN approach. Infection prevention and management is a cornerstone of newborn care and is one of the most effective preventive measures for newborns.

The outcome of neonatal infection can be improved if the disease is recognized early and treated promptly and appropriately. A critical task of the caregiver is to recognize early symptoms of newborn infections. The nonspecific danger signs of newborn infections<sup>8</sup> are—

- ◆ Difficulty feeding
- ◆ Convulsions
- ◆ Fast breathing (60 breaths per minute or more)
- ◆ Grunting
- ◆ Severe chest indrawing;
- ◆ Umbilical draining pus or redness
- ◆ Fever ( $38^{\circ}\text{C}$  or above) or low temperature (below  $35.5^{\circ}\text{C}$  or feels cold)
- ◆ Skin pustules
- ◆ Infant moves only when stimulated or does not move even when stimulated.

If an infant is suspected of having an infection, especially during the first days after birth, it should be immediately referred to a health facility.

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<sup>8</sup> From Revised IMCI Chart, WHO, 2006

#### IV. Indicators for the Minimum Package

One of the aims of the MAMAN is to have consistent programming across PVOs/NGOs that will have an impact on maternal and newborn mortality and morbidity. As previously mentioned many PVOs/NGOs are already implementing these activities and tracking the following indicators. Tables 5a and 5b provide a summary of the key indicators for PVOs/NGOs to monitor and evaluate the effective implementation of the MAMAN. Annex IV provides a suggested survey tool to calculate the indicators.

**Table 5a**

<b>CORE INDICATORS FOR ANNUAL REPORTING (Annual Rapid Survey among mothers of infants 0–11 months)</b>
<ol style="list-style-type: none"> <li>1) Tetanus toxoid coverage*</li> <li>2) Skilled attendance*</li> <li>3) Clean cord care (new/sterile blade)</li> <li>4) Active management of the third stage of labor (<i>for facility based programs only or where skilled birth attendants conduct home deliveries</i>)</li> <li>5) Thermal care (immediate drying and wrapping)</li> <li>6) Immediate and exclusive breastfeeding*</li> <li>7) Postpartum and newborn care visit within three days of birth*</li> <li>8) Use of LAM</li> </ol> <p>*A millennium development goal (MDG) countdown indicator</p>

**Table 5b:  
Core MAMAN Indicators for Annual Reporting  
From Rapid Survey among mothers of infants 0–11 months**

<b>Area</b>	<b>Description Of Indicator</b>	<b>Numerator</b>	<b>Denominator</b>
Tetanus toxoid immunization	Percentage of mothers with children age 0–11 months who received at least two tetanus toxoid (TT or Td) injections before the birth of their youngest child	Number of women giving birth during a reference period (1 year before date of survey) who report receiving at least two doses of tetanus toxoid during or before their last pregnancy	Number of mothers of children age 0–11 months in the survey
Skilled attendance <sup>9</sup>	Percent of deliveries with a skilled attendant at birth	Number of deliveries with a skilled attendant (doctor, nurse, midwife, or auxiliary midwife) at birth during a specified period	Number of mothers of children age 0–11 months in the survey
Clean cord care	Percent of births where cord was cut with a new or clean instrument or a clean birth kit was used	Number of births using a clean instrument	Number of live births
Active mgt (see Annex III for	Percent of women in facilities and home where the woman received active	Number of women who received AMTSL recorded in	Total number of women with vaginal

<sup>9</sup> Doctor, nurse, midwife or auxiliary midwife

## Minimum Activities for Mothers and Newborns

Area	Description Of Indicator	Numerator	Denominator
more details on this indicator)	management of the third stage of labor (AMTSL) by skilled birth attendants (SBAs) within the past 12 months	the past time period	deliveries recorded in the past time period
Drying and wrapping	Percent of newborns who were dried and wrapped with a warm cloth or blanket, immediately after birth (before the placenta was delivered)	Number of newborns who were dried and wrapped with a warm cloth or blanket, immediately after birth (before the placenta was delivered)	Total number of live births in the same period
Immediate initiation of breastfeeding	Percent of infants less than 12 months of age who were put to the breast within one hour of delivery	Number of infants less than 12 months of age who were put to the breast within 1 hour of delivery	Total number of infants less than 12 months of age
<b>Breastfeeding</b>			
Prelacteal feeds	Percent of mothers who did not give anything other than breastmilk (prelacteal feeds) in the first 3 days after birth	Number of infants who did not receive anything other than breastmilk in the first 3 days after birth	Total number of infants less than 12 months of age
Colostrum	Percent of mothers who gave colostrum	Number of newborns who received colostrum	Total number of infants less than 12 months of age
Postpartum visit (maternal)	Number and percent of postpartum visits made by appropriately trained workers <sup>10</sup> to mothers who delivered in facilities or at home within 3 days of birth	Number of home and facility deliveries <sup>11</sup> that received one PP visit within 3 days after delivery	Total number of deliveries
Postnatal visit (neonatal)	Number and percent of newborn care visits made by appropriately trained workers <sup>6</sup> to newborns delivered in facilities or at home within 3 days of birth	Number of newborns born at home and in facilities <sup>12</sup> that received one newborn care visit within 3 days of birth	Total number of deliveries
LAM	Number and percent of women with infants less than six months old using LAM	Number of women less than six months postpartum reporting LAM use	Total number of deliveries for six month period

(For Suggested Annual Rapid Survey among Mothers of infants 0–11 months: see Annex III)

<sup>10</sup> Trained workers include: skilled birth attendant (SBA) or trained community health worker (CHW) which includes trained traditional birth attendants.

<sup>11</sup> For facility deliveries, a postnatal check prior to discharge can be counted as a postpartum visit

<sup>12</sup> For facility deliveries, a postnatal check prior to discharge can be counted as a postnatal visit

**V. Phase II: Other Essential Interventions and Context-Specific Interventions**



**V. Phase II: Other Essential Interventions and Context-Specific Interventions**

There may be situations where the MAMAN interventions have reached high coverage or are already being addressed by other organizations, and/or the PVO/NGO may have additional resources to devote to MNC interventions. In this case, the PVO/NGO is encouraged to consider additional evidence-based interventions, preferably from the list of Other Essential Interventions or Context-Specific Interventions that build on the MAMAN and/or are key issues in specific settings. The PVO/NGO will decide which interventions make sense within a given context.

**A. Other Essential Interventions**

There are several interventions that PVOs/NGOs may already be implementing that are well suited to their core competences. Table 6 articulates these interventions and the benefits for the mother and newborn.

**Table 6: Additional MNC Interventions and their Effect on the Mother and the Newborn**

<b>Benefit to Mother</b>	<b>Intervention</b>	<b>Benefit to Newborn</b>
<b>During Pregnancy</b>	<b>During Pregnancy</b>	<b>During Pregnancy</b>
Reduced "depletion syndrome"	<b>← Adequate nutrition →</b> <i>Facility/some community</i>	Reduced risks of low birth weight (LBW), preterm birth and perinatal death
Decrease iron deficiency anemia	<b>← Provide iron and folic acid →</b> <i>Facility/some community</i>	Reduced risk of LBW
<b>Immediate Postpartum Period (0-7 days)</b>	<b>Immediate Postpartum Period</b>	<b>Immediate Neonatal Period</b>
N/A	<b>← Prophylactic eye care →</b> <i>Facility/some community</i>	Reduced risks of ophthalmitis and blindness
N/A	<b>← Immunization →</b> <i>Facility/some community</i>	Immune protection (BCG, OPV, Hep B)
N/A	<b>← Special care of LBW →</b> <i>Facility/some community</i>	Reduced hypothermia, infection, and respiratory distress
Spacing/limiting of next pregnancy is planned/achieved Reduced "depletion syndrome," especially if pregnancy and breastfeeding overlap Reduces maternal morbidities and mortalities associated with high fertility and closely spaced pregnancies	<b>← Family Planning →</b> <i>Facility/some community</i>	Reduces perinatal morbidities and mortality associated with short birth interval
Early and timely management of obstetric complications leading to reduced mortality, disability and morbidity.	<b>← EmONC →</b> <i>Facility</i> (Emergency Obstetric and Newborn Care)	Early and timely management of complications, leading to reduced mortality

**a. Antenatal Interventions**

**1. Adequate Maternal Nutrition**

Low birth weight (LBW), associated with increased infant mortality, is related to the health and nutritional status of the mother before and during pregnancy. Maternal deficiencies of some micronutrients such as vitamin A diminish the quality of breast milk and the micronutrient status of their infants. Low pre-pregnancy body mass index (BMI) or thinness and inadequate weight gain during pregnancy increase the risk of fetal malnutrition and LBW. These factors contribute to higher rates of neonatal and infant mortality as well as later deficits in child growth and development.

Women should consume more food and increase protein intake during pregnancy and lactation:

- ◆ Pregnancy: 285 extra kcal/day (one extra serving of the staple food)
- ◆ Lactation: 500 extra kcal/day (1–2 extra servings of the staple food).

For more information on maternal nutrition see also the Nutrition TRM at:  
<http://www.childsurvival.com/documents/trms/tech.cfm>

### **2. Prevention/Treatment of Anemia**

Anemia in mothers increases the risk of poor pregnancy outcomes such as increased maternal mortality from hemorrhage, LBW, decreased infant iron stores and increased infant morbidity and mortality. Anemia among pregnant women ranges from **24–76 percent** and several interventions to prevent and address anemia should be considered:

- ◆ Nutritional interventions encouraging intake of iron-rich foods, especially animal products and fortified foods, discouraging iron-inhibiting foods/fluids (e.g., tea with meals) and promoting iron absorption-enhancing substances (e.g., vitamin C-rich foods)
- ◆ De-worm pregnant women after the first trimester as well as lactating women, according to WHO protocol
- ◆ Prevent and/or treat malaria (intermittent preventive treatment for women and insecticide treated bednets) in pregnant women; see also context specific interventions.

And most importantly—

- ◆ **Give iron/folate supplementation (180 tabs) to all women during pregnancy** and continue supplementation for 3 months postpartum in areas with anemia prevalence >40 percent. *Iron is a component of every cell of the body and is essential for hemoglobin production. Anemia, (hemoglobin <11) leads to reduced energy levels, weakness, and reduced physical ability to work. Iron deficiency is the main cause of anemia in many settings and is estimated to cause 50 percent of anemia globally.*

### **b. Safe Birth**

### **3. Emergency Obstetric and Newborn Care**

Approximately 15 percent of all pregnant women will experience potentially life-threatening obstetric complications. Without proper intervention, many of these complications will result in death or maternal disability, some of which (e.g., obstetric fistulas) are long lasting). While most obstetric complications (hemorrhage, unsafe abortion, eclampsia, obstructed labor, infection) cannot be predicted or prevented, they can be treated and effectively managed to save women's lives.

As outlined in the MAMAN package, PVOs/NGOs have a major role to play in establishing referral links to emergency obstetric and newborn care, helping communities to overcome economic and social-cultural barriers that inhibit women and their newborns from accessing high-quality care (see four delays). Overcoming the barriers needs to go hand in hand with provision of emergency obstetric and newborn care (EmONC): women and newborns need to be referred to a facility that is equipped to provide the emergency care they need. For this to happen, facilities need to be able to provide basic or comprehensive EmONC 7 days a week, 24 hours a day (see table 7).

**Table 7: Emergency Obstetric and Newborn Care**<sup>13</sup>

Basic EmONC	Comprehensive EmONC
1) Administer parenteral* oxytocics 2) Administer parenteral antibiotics 3) Administer parenteral anticonvulsants 4) Manually remove placenta 5) Remove retained products (e.g., manual vacuum aspiration of post-abortion care) 6) Assist vaginal delivery (vacuum extraction, forceps) 7) Resuscitate newborn	Basic plus: 8) Perform cesarean section, including anesthesia 9) Administer blood transfusion 10) Care for sick newborn

\*Parenteral administration of drugs means by injection or intravenous infusion/drip.

PVOs/NGOs may consider assisting local authorities in monitoring the quality of essential obstetric and neonatal care (EONC), including care during complications, and ensuring that essential systems supporting EONC are operational. Criterion-based audits could be used to reinforce established protocols and maintain health workers knowledge and skills for managing obstetric complications. (For more on criterion-based audits, see also “Improving Emergency Obstetric Care through Criterion-Based Audit” at <http://cpmnet.columbia.edu/dept/sph/popfam/amdd/docs/AuditEnglishFinal.pdf>)

**c. Postpartum/Newborn Care**

**4. Prophylactic Eye Care**

Ophthalmia neonatorum is any conjunctivitis with discharge occurring during the first 2 weeks of life. The infection may become systemic or may result in permanent eye damage if treatment is delayed or inappropriate. Ophthalmia neonatorum is generally contracted during passage through the birth canal and the most common causes are *Gonococcus* and *Chlamydia trichomatis*.

Eye prophylaxis is a simple, highly cost-effective intervention, costing US \$1.40 per case averted when the rate of gonococcal infection is more than 10 percent. Despite the proven efficacy of this preventive measure, it has not been widely implemented.

One percent silver nitrate eye drops or preferably 1 percent tetracycline eye ointment should be applied to infants’ eyes within 1 hour of delivery to prevent infection<sup>14</sup>. Delay in the application of the ointment is a key reason for failure of eye prophylaxis. Untreated infections may result in blindness.

<sup>13</sup> Adapted from UNICEF, WHO, UNFPA, 1997.

<sup>14</sup> Povidone iodine 2.5% drops, which may be more effective against chlamydial ophthalmia, may soon also be available.

## 5. Immunization

Child immunization is one of the most cost-effective public health interventions for reducing child morbidity and mortality. The goal of immunization programs is to reduce the incidence of vaccine-preventable diseases in children by means of high coverage with potent vaccines administered at the appropriate age. PVOs/NGOs have invaluable experience working with communities to increase the demand for vaccination and with peripheral health services to effectively meet that demand.

Ministries of Health, with support from WHO, have carefully determined the immunization schedule in each country. The schedule is generally a compromise that takes into account the immunological, epidemiological, organizational, and financial characteristics of the country and its population. While schedules vary among countries, the basic WHO schedule for most developing countries appears below. As indicated in table 8, the WHO-recommended schedule includes three antigens (BCG, OPV, and where applicable hepatitis B) to be administered at birth.

**Table 8: WHO's Recommended Schedule for Primary Series of Childhood Vaccinations in Developing Countries**

Age	Vaccines
Birth	BCG - OPV0 - Hep B*
6 weeks	DTP 1 - OPV 1 - Hep B* - Hib 1**
10 weeks	DTP 2 - OPV 2 - Hep B* - Hib2**
14 weeks	DTP 3 - OPV 3 - Hep B* - Hib 3**
9 months	Measles - Hep B* - Yellow fever***
<p>*Only three doses of hepatitis B vaccine are needed for full protection. Hepatitis B vaccination schedules vary by country.                      **Hib stands for <i>Haemophilus influenzae</i> type b.                      ***In countries where indicated.</p>	

Vaccination cards (in many places combined with the growth monitoring card) can be given out at birth, and mothers should be instructed when to come back for the next series of immunizations. For more information on immunization see also the Immunization TRM at:

<http://www.childsurvival.com/documents/trms/tech.cfm>

## 6. Special Care of LBW

Complications from prematurity and LBW contribute to one in four neonatal deaths. Very small babies, weighing less than 1.5 kg, are likely to be preterm and require skilled care (although not necessarily intensive care). Very small babies are more susceptible to hypothermia; infection; feeding/breastfeeding difficulty; breathing difficulty (such as respiratory distress syndrome and apnea); jaundice; anemia; low blood glucose; etc. Along with the mother, these babies should urgently be referred to a hospital, while ensuring extra warmth during the journey (e.g., via skin-to-skin contact with mother or someone else). If possible, the mother should breastfeed during the journey.

Small babies weighing between 1.5 kg and 2.5 kg (corresponding to >34 weeks gestation), have a good prospect of survival without major disability and can be managed in a lower-level facility or even at home with careful supervision. They should be monitored closely and frequently (preferably daily) reassessed.

Key interventions include—

- ◆ **Breastfeeding support.** These babies may have difficulty attaching and sucking and can easily develop hypoglycemia. Frequent feedings are thus important. Small babies often do best with small frequent feeds; every 2–3 hours until she or he weighs more than 2.5 kg. Some babies may require cup- or spoon-feeding for the first few days to “top-up” after sucking and then learn to suck well.
- ◆ **Ensure warmth.** Depending on the climate and season, a warm room and dressing and wrapping the baby, especially with the head covered, may be adequate for thermal control. Kangaroo care and/or skin-to-skin care or hot cots (wire baskets with light bulbs to warm them) may be necessary for colder settings (ensure that the newborn is not too close to the heat source).
- ◆ **Ensure cleanliness,** but do not bathe until at least the second day of life. Small babies are more prone to infection, particularly if they have to be hospitalized. The number of caretakers should be held at a minimum and great attention should be paid to cord care.
- ◆ **Danger signs.** These may be more subtle in a LBW baby, especially if the baby is preterm and not feeding well or inactive because of prematurity. The mother and other caregivers need to be aware of danger signs and need to know how to respond.

## 7. Family Planning

Family planning (FP) is a life saving intervention for women and their children, as it helps prevent unintended pregnancy and reduce the risks of poor outcomes associated with age (especially the very young), high fertility, and closely spaced pregnancies. Enabling couples to decide whether and when to have children is vital to safe motherhood, infant and child survival, and preventing mother to child transmission of HIV/AIDS.

Antenatal, delivery, and postnatal contacts, as well as child care/immunization sessions are important times to talk with women about their intentions for spacing or limiting subsequent pregnancies. They offer the opportunity to counsel women about exclusive breastfeeding and its use for LAM, educate about return to fertility, and discuss FP options and their timing of use. When discussing FP with postpartum women, include the following:

### LAM and Transition

- See Section I under Breastfeeding, Exclusive Breastfeeding, and LAM - for information on correct LAM use, Return to Fertility, and transition to another modern method of FP.
- Note: If the pregnancy checklist is used (and pregnancy tests are not available), counsel mothers using LAM to return before the end of the six months in order to transition to another modern FP method.

### Fertility Intentions:

- Discuss whether the desired family size has been met or if more children are desired.
- For those desiring another child, counsel her **to wait at least two years after a live birth, or six months after a miscarriage/abortion, before trying to get pregnant** again to provide the greatest chance for a healthy outcome for mother and baby. (Citation – Report of a WHO Technical Consultation on Birth Spacing, 2005)
- For those who have reached their desired family size, they may choose a long acting or permanent method that can be used within the first 48 hours after birth, or after 4-6 weeks.

- Note: Many young women may wish to delay their first pregnancy. Counsel her about the range of contraceptives that she can choose from to meet her needs, including long-acting methods. (Citation – WHO Medical Eligibility Criteria)

**Family Planning Counseling and Services**

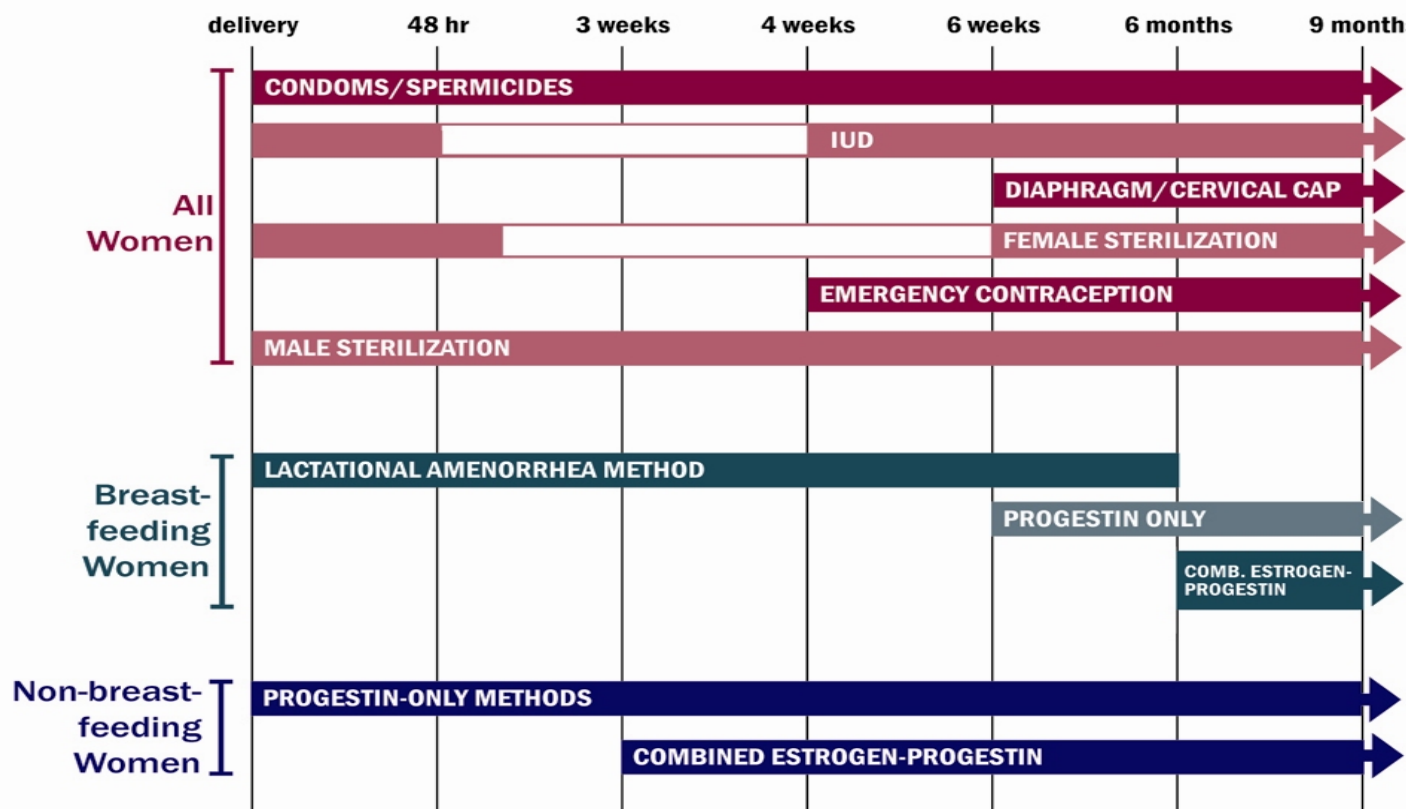
- Based on the desired fertility intentions, counsel about the range of modern contraceptives available to meet her needs (See the chart below for Postpartum Contraceptive Options)
- Provide her with the family planning method of her choice or refer her to another site that has the method.

**PMTCT:** In settings where HIV prevalence is high, dual protection, a strategy to protect against unwanted pregnancies and sexually transmitted and HIV infections (STI/HIV infection), should be considered. This can be done through—

- Consistent use of condoms (male or female)
- Use of condoms plus another family planning method or emergency contraception referred to as dual method use
- Avoidance of sex “at risk for STI/HIV infection” through mutual monogamy between uninfected partners combined with a contraceptive method.
- Note: Women may also wish to use an effective method of FP for prevention of unintended pregnancy or spacing the next pregnancy. Most are safe for HIV+ women to use and, except for condoms, do not protect against HIV/AIDS. (Citation – WHO Medical Eligibility Criteria)

For more information on family planning see also the Family Planning and Reproductive Health TRM at: <http://www.childsurvival.com/documents/trms/tech.cfm>

## Postpartum Contraceptive Options



### B. Context Specific Interventions

Context-specific interventions are those interventions that may not be relevant in certain settings, and/or are already part of another minimum package of activities. For example, in Africa malaria is endemic while in Albania this is not a problem. Table 9 articulates these interventions and the benefits for both the mother and newborn.

**Table 9: Context Specific MNC Interventions**

<b>Benefit to mother</b>	<b>Intervention</b>	<b>Benefit to newborn</b>
Decrease severe anemia, severe malaria, and death.	← IPTp for malaria → <i>Facility/community</i>	Reduced risks of stillbirth, preterm birth, IUGR, death.
Enhance mental development	← Iodine supplementation → <i>Facility/Community</i>	Enhance mental development
Reduced risks of infection, PID, infertility, other STI complications.	← Detect/treat syphilis → <i>Facility/community</i>	Reduced stillbirth, preterm birth, IUGR, ophthalmitis, infection, death.
Identification and possible treatment of HIV+ women (increased access to care,	← PMTCT → <i>Facility/community</i>	Reduced HIV/AIDS transmission to the neonatal

treatment, and RH/FP services)		
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## 1. Malaria

Each year, more than 30 million women, the majority living in African, in malaria-endemic areas become pregnant and are at risk for *Plasmodium falciparum* infections. For these women, malaria is a threat, both to themselves and to their babies, with up to 200,000 newborn deaths each year as a result of malaria in pregnancy.

Pregnant women residing in high-transmission areas should sleep under an insecticide-treated bednet and take intermittent preventive treatment. Intermittent preventive treatment (IPTp) involves the administration of two or three full, curative treatment doses of an efficacious, preferably single-dose, antimalarial drug (e.g., sulfadoxine-pyrimethamine) at predefined intervals during pregnancy, beginning in the second trimester after quickening<sup>15</sup>. IPTp can significantly reduce maternal anemia and LBW.

Women should receive at least two doses\* of IPT, each at least 1 month apart. IPTp can be administered under direct observation in the clinic, or be given in the community. WHO recommends a schedule of four antenatal care (ANC) visits, with three visits after quickening. The delivery of IPTp with each scheduled visit after quickening will help ensure that a high proportion of women receive at least two doses.

\* HIV infection diminishes a pregnant woman's ability to control *Plasmodium falciparum* infections. Women with HIV infection are thus more likely to have symptomatic infections and to have an increased risk for malaria-associated adverse birth outcomes. A minimum of three doses of IPTp are required to obtain maximum protection. In areas where HIV prevalence among pregnant women is greater than 10 percent, a third dose of IPTp should be administered at the last scheduled ANC visit.

For more information on malaria during pregnancy see also the Malaria TRM at: <http://www.childsurvival.com/documents/trms/tech.cfm>

## 2. Iodine

Iodine deficiency in pregnancy can result in stillbirth and irreversible brain and central nervous system damage in the infant. It is the single largest determinant of preventable brain damage, mental retardation (e.g., cretinism), and loss of IQ points in the world

Iodine deficiency can be a public health problem anywhere. However, geographical regions with iodine depleted soil and/or lack of seafood in the diet, especially mountainous landlocked countries, are especially at risk for iodine deficiency. WHO, UNICEF and the International Council for the Control of Iodine Deficiency Disorders (ICCIDD) estimate that approximately one-third of the world's population lives in iodine deficient environments; almost 120 countries have documented iodine deficiency disorders (IDD) as a problem.

Salt iodization is an effective and low cost intervention, and universal iodization is being promoted globally. Promoting and monitoring the consumption of iodine-fortified salt is practical for child survival and health programs and could have a measurable impact on child development. Simple testing kits to confirm that salt is iodized are available through UNICEF country offices.

<sup>15</sup> The first perception of the baby's kicking and movement is referred to as quickening. Quickening usually occurs between 14–26 weeks of pregnancy.



In areas where iodized salt or other iodine-fortified products cannot be accessed, iodine supplementation can be provided to women before conception or as early in pregnancy as possible via single dose of 400–600 mg (i.e., 2–3 capsules) of iodized oil<sup>16</sup>. Treatment should, however, be administered as early as possible to maximize positive impacts on birth outcomes and maximum protection against cretinism and neonatal hypothyroidism (e.g., insufficient production of thyroid hormone) is achieved when iodized oil is given before conception.

### **3. Syphilis**

Congenital syphilis is one of the leading and readily preventable causes of stillbirth and neonatal death worldwide. It is estimated that maternal syphilis is responsible for 460,000 abortions or stillbirths, 270,000 cases of congenital syphilis, and the birth of 270,000 low-birth-weight or premature babies. The universal institution of an effective program to prevent congenital syphilis could prevent over 500,000 deaths annually.

About 2 million pregnant women in Sub-Saharan Africa are infected with syphilis annually. Of these, 80 percent of their infections are undetected during pregnancy. In some African countries, the combined loss of life due to syphilis-related stillbirths and infant deaths is thought to be equivalent to the loss from mother-to-child transmission (MTCT) of HIV. Relatively inexpensive rapid strip tests for syphilis are now available and testing can be carried out by the midwives or other health workers providing antenatal care. Results are available immediately, and treatment of the woman and her partner can thus follow without delay. WHO recommends a single dose of 2.4 million units of benzathine penicillin G for recently acquired syphilis and 7.2 million units over 3 weeks if the duration of syphilis is at least a 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.

### **4. Prevention of Mother-to-Child Transmission of HIV/AIDS**

Mother-to-child transmission (MTCT) causes more than 90 percent of all HIV infections in infants and children. Almost all HIV-infected infants acquired HIV from their mothers before or during birth or through breastfeeding. Without HIV prevention measures, about 35 percent of children born to HIV-positive women will contract the virus: 5–10 percent during pregnancy; 10–20 percent during delivery; and 10–20 percent during breastfeeding.

Without interventions many children experience rapid progression of disease. In developing countries an estimated 35 percent of children with HIV die by the time they are 1 year old, 50 percent die by age 2, and 60 percent die by age 3. It is estimated that over 300,000 children under five die yearly of HIV and AIDS. In high-prevalence countries, AIDS is responsible for an increasing share of under-five mortality. In Africa, its share rose from 2 percent in 1990 to 6.5 percent in 2003 (WHO, 2005.)

Prevention of mother-to-child transmission (PMTCT) is a crucial entry point for primary prevention, treatment, care and support for mothers, their children and families. Ensuring availability of family planning services, provision of antiretroviral medicines to the mother and the newborn, safe delivery options, infant feeding counseling, and support are all key components of PMTCT programs.

#### **a. Family planning**

This was discussed earlier on.

#### **b. Provision of antiretroviral medicines to the mother and the newborn**

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<sup>16</sup> . Following WHO guidelines treating pregnant women with iodine is safe at any stage in pregnancy.

A number of available drug regimens for prevention of MTCT are known to be effective and safe, and the choice of regimen should be determined according to local circumstances (including cost and practicality, particularly as related to the availability and quality of antenatal care).

Zidovudine (AZT), a drug used to prevent MTCT of HIV, can reduce the risk of MTCT by two-thirds. A single dose of Nevirapine (NVP) given to the mother and to the infant can lower the risk of HIV transmission during the first 14 to 16 weeks of life by nearly 50 percent when compared to AZT. Furthermore, the risk of transmitting HIV from an HIV-infected mother to her newborn infant could be reduced to 1.5 percent among women who receive antiretroviral therapy (ART—a combination of drugs used to treat HIV/AIDS), and appropriate medical and obstetrical care during pregnancy.

Programs can increase the likelihood that women can take a dose of NVP in labor by providing women who are known to be HIV-infected with their dose of NVP at an antenatal visit, to take home and self-administer at the onset of labor, before she travels to the delivery facility.

Recent evidence from Rakai, a rural area of Uganda, suggests that HIV-infected mothers are able to provide single-dose NVP at home to both themselves and their newborn babies, achieving a low rate of MTCT (8%) similar to that seen in clinical trials where single-dose NVP was provided to mothers and neonates in a healthcare setting.

### **c. Safe delivery options**

Clinical practices during the intrapartum and postpartum periods, such as reduction in routine episiotomy, avoidance of premature rupture of membranes, and immediate cleansing of the newborn's face, can be implemented to decrease the risk of MTCT.

Elective caesarian section (c-section) delivery can reduce MTCT of HIV, though it is not without risk to certain women. In the developed world, where effective therapy is available, c-section delivery is recommended in specific circumstances for women living with HIV, but elective c-section is not a viable option for most HIV-infected pregnant women in the developing world. Obstetric management will be similar to that for uninfected women (or women of unknown serostatus) in most instances, and invasive diagnostic procedures should be avoided. In areas of high prevalence, these procedures should be the same for all pregnant women.

### **d. Infant feeding counseling**

In developing countries, an estimated one-third to half of all HIV infections are transmitted through breastfeeding. WHO recommends that all HIV-infected women be advised of both the risks and benefits of breastfeeding their infants. In situations in which safe alternatives to breastfeeding are readily available and economically feasible, exclusive formula feeding should be encouraged. In general, in developing countries where safe alternatives to breastfeeding are *not* readily available, exclusive breastfeeding should be encouraged and actively supported. The benefits of breastfeeding in terms of decreased illness and death due to other infectious diseases greatly outweigh the potential risk of HIV transmission.

### **e. Support**

The prevention of MTCT involves also appropriate counseling and testing services for women at risk, as well as ongoing community-based support for mothers and infants.

HIV testing in pregnancy has a number of benefits in terms of prevention and care for mother and child but this must be balanced against the possible risks of stigmatization, discrimination and violence. In order to avoid or minimize negative consequences, testing must be confidential and accompanied by quality counseling.

HIV voluntary counseling and testing (VCT) or routine testing is recommended, wherever possible. 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, making sure that family planning methods are provided after post-abortion care and in the postpartum period). Many antenatal services in resource-poor settings however are understaffed and under-resourced. PMTCT interventions should avoid further burdening antenatal services and thus reduce essential maternal and newborn care for the wider community. PMTCT programs should strengthen antenatal care while using this as an entry point for PMTCT services.

Care and support should not cease after the birth of the child. Elements of continued care include—

- ◆ Treatment and prophylaxis of common HIV-related illnesses
- ◆ Palliative care
- ◆ Psychosocial support through health services or AIDS support organizations
- ◆ Nutritional advice and support.

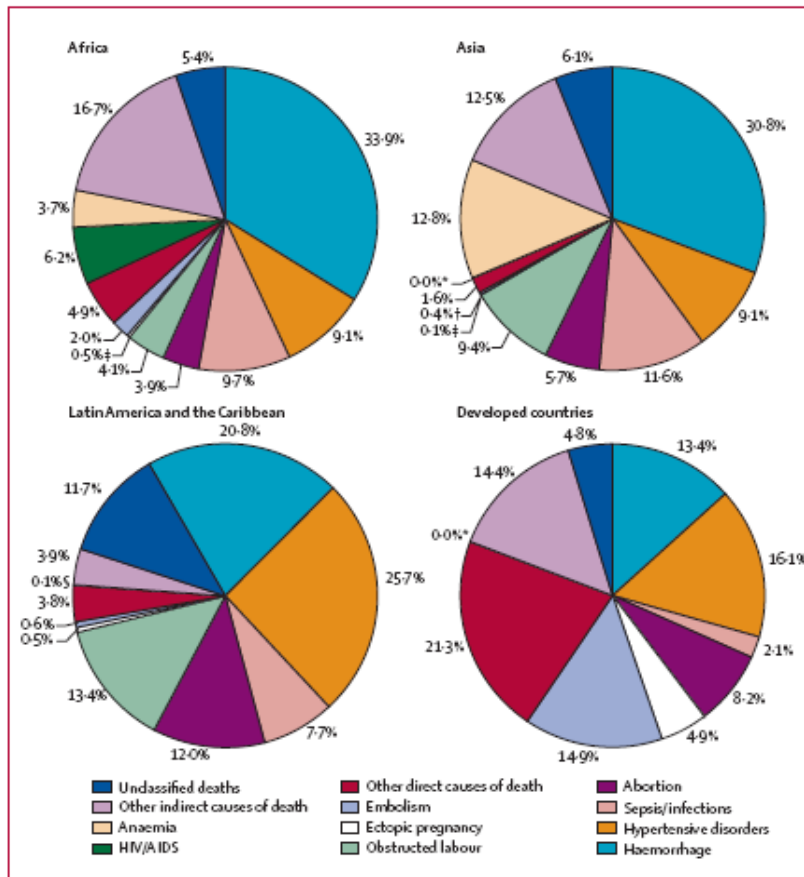
VI. Annexes

Annex I: Maternal, Perinatal, and Neonatal Mortality

Every year there are more than 500,000 maternal deaths from complications that are treatable or preventable. Figure 3 outlines the causes of these deaths, including postpartum hemorrhage (PPH), postpartum infection, pre-eclampsia/eclampsia, and obstructed labor.

Figure 3: Causes of Maternal Deaths

Source: Lancet 2006; 367:1066-7, [www.thelancet.com](http://www.thelancet.com)



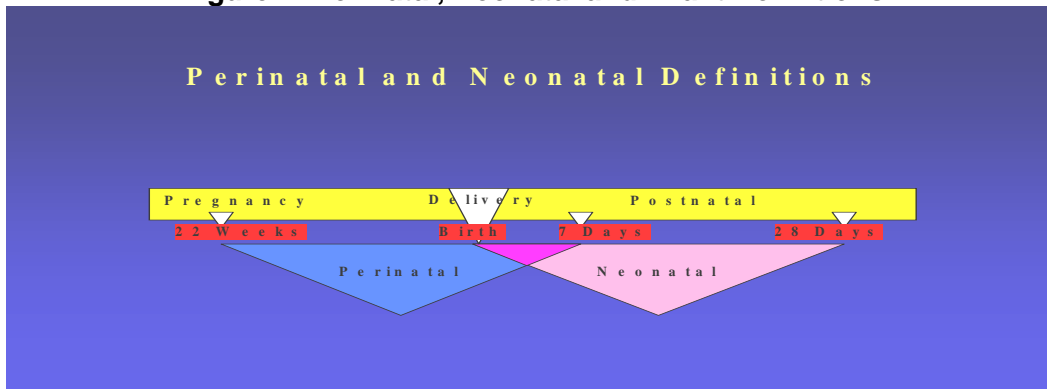
In addition to the medical causes of maternal deaths outlined in figure 3, there are health care system, economic, and social-cultural barrier issues that inhibit women from accessing high-quality maternal and newborn health services. These barriers are often referred to as the delays; in problem identification; decisionmaking; accessing quality services; and receiving quality health services.

In addition to maternal deaths, every year there are an estimated 4 million neonatal deaths annually. About half of these neonatal deaths occur in the first 24 hours of life.

There has been some confusion regarding the definitions for perinatal and neonatal periods. Figure 4 outlines these time periods and how they overlap.

Figure 3: Geographical variation in distribution of causes of maternal deaths  
 \*Represents HIV/AIDS. †Represents embolism. ‡Represents ectopic pregnancy. §Represents anaemia.

**Figure 4: Perinatal, Neonatal and Infant Definitions**



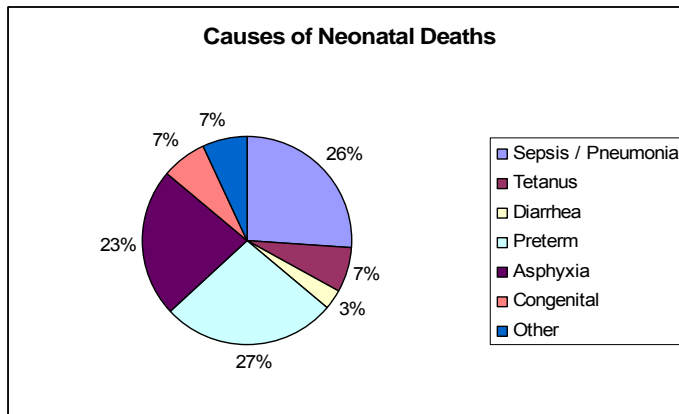
Source: CSTS/USAID Technical Reference Materials; Maternal and Newborn Care

**Perinatal mortality** is closely associated with obstetric complication, such as obstructed labor, placenta previa, eclampsia, and intrauterine infections like malaria and syphilis

Two-thirds of **neonatal mortality** occur in the first week of life, of these two-thirds die within the first 24 hours of life (the two-thirds rule). Infectious diseases are associated with 30 to 40 percent of all neonatal deaths, with the most important infectious causes being neonatal tetanus, sepsis, diarrhea, and acute respiratory infections. The other most important causes of neonatal mortality are asphyxia and birth injuries (see figure 5).

**Figure 5: Causes of Neonatal Deaths**

Source: The Lancet 2005; 365: 891-900, [www.thelancet.com](http://www.thelancet.com)



While not a direct cause of death, prematurity (<37 weeks gestation) and low birth weight (LBW—babies weighing less than 2500 gms) are associated with higher morbidity and mortality rates. LBW is directly related to the health and nutritional status of the mother before and during pregnancy.

## Annex II: The modified WHO Partograph

The WHO partograph has been modified to make it simpler and easier to use. The latent phase has been removed and plotting on the partograph begins in the active phase when the cervix is 4 cm dilated. A sample partograph is included (see figure below). Record the following on the partograph:

**Patient information:** Fill out name, gravida, para, hospital number, date and time of admission and time of ruptured membranes.

**Fetal heart rate:** Record every half hour.

**Amniotic fluid:** Record the color of amniotic fluid at every vaginal examination:

- ◆ I: membranes intact
- ◆ C: membranes ruptured, clear fluid
- ◆ M: meconium-stained fluid
- ◆ B: blood-stained fluid

**Moulding:**

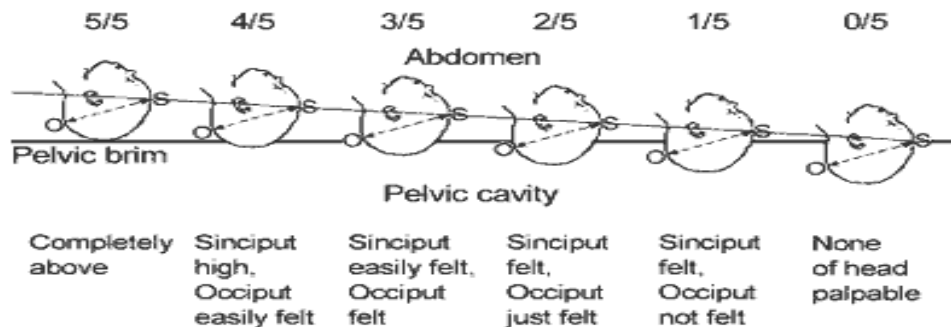
- ◆ 1: sutures apposed
- ◆ 2: sutures overlapped, but reducible
- ◆ 3: sutures overlapped and not reducible

**Cervical dilatation:** Assessed at every vaginal examination and marked with a cross (X). Begin plotting on the partograph at 4 cm.

**Alert line:** A line starts at 4 cm of cervical dilatation to the point of expected full dilatation at the rate of 1 cm per hour.

**Action line:** Parallel and 4 hours to the right of the alert line.

**Descent assessed by abdominal palpation:** Refers to the part of the head (divided into five parts) palpable above the symphysis pubis; recorded as a circle (O) at every vaginal examination. At 0/5, the sinciput (S) is at the level of the symphysis pubis.



**Hours:** Refers to the time elapsed since onset of active phase of labor (observed or extrapolated).

**Time:** Record actual time.

**Contractions:** Chart every half-hour; palpate the number of contractions in 10 minutes and their duration in seconds.

Less than 20 seconds:

Between 20 and 40 seconds:

More than 40 seconds:

**Oxytocin:** Record the amount of oxytocin per volume IV fluids in drops per minute every 30 minutes when used.

**Drugs given:** Record any additional drugs given.

**Pulse:** Record every 30 minutes and mark with a dot (•).

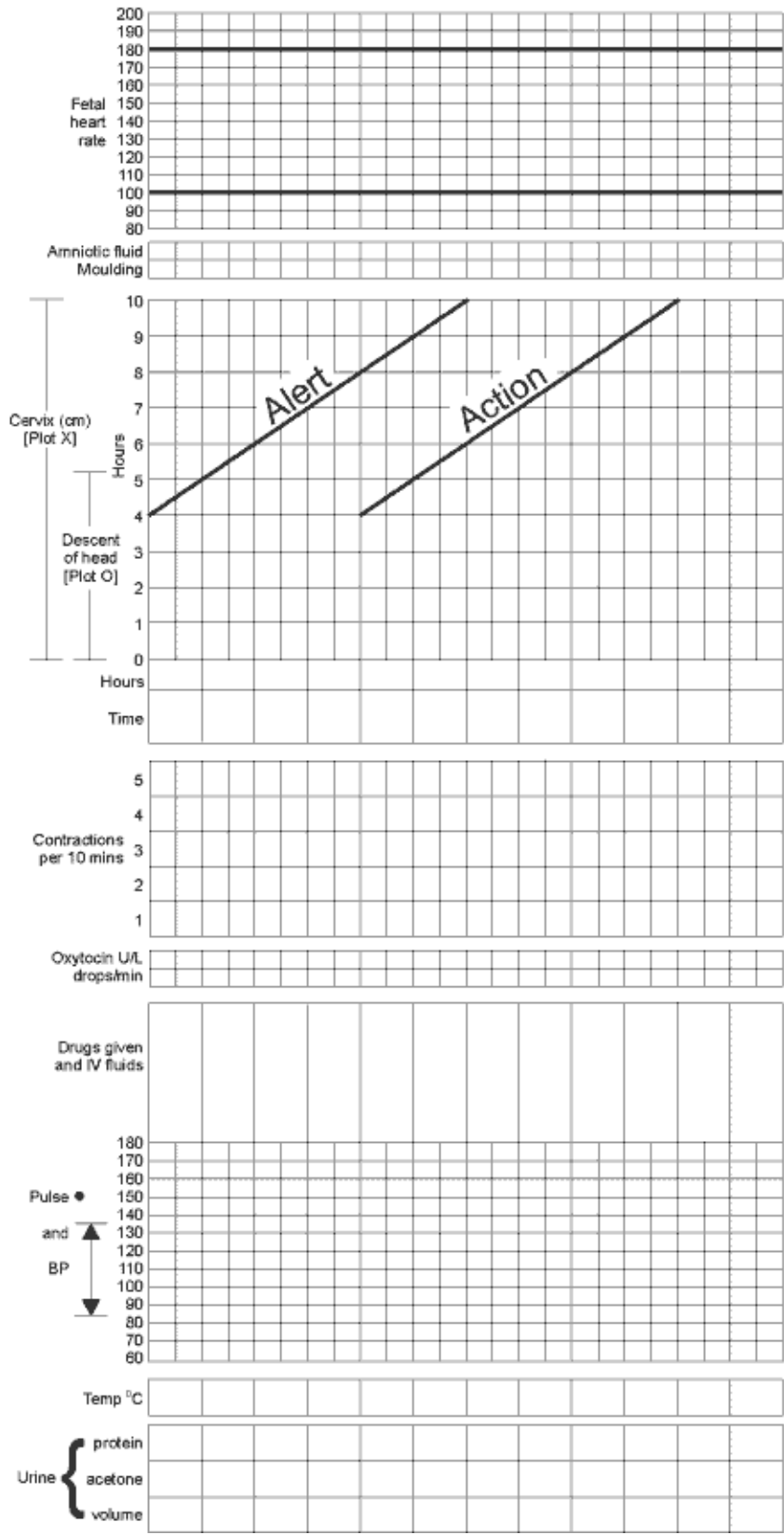
**Blood pressure:** Record every 4 hours and mark with arrows.

**Temperature:** Record every 2 hours.

**Protein, acetone and volume:** Record every time urine is passed.

# Minimum Activities for Mothers and Newborns

Name \_\_\_\_\_ Gravida \_\_\_\_\_ Para \_\_\_\_\_ Hospital number \_\_\_\_\_  
 Date of admission \_\_\_\_\_ Time of admission \_\_\_\_\_ Ruptured membranes \_\_\_\_\_ hours



**Annex III: Active Management indicators**

**AMTSL INDICATOR REFERENCE SHEET – V10 Dec 12<sup>th</sup> 2006**

**Indicator 1:** Number and Percentage of women in facilities and home where the woman received active management of the third stage of labor (AMTSL) by skilled birth attendants (SBAs)<sup>17</sup> within a specified time period

**DESCRIPTION**

**Precise Definition:** Number and percentage of women in facilities and homes where the woman received AMTSL by skilled birth attendants (SBAs) in targeted areas in a specified time period. This includes vaginal deliveries only<sup>18</sup>. Targeted areas are those where the U.S. Agency for International Development partner and Cooperating Agency (CA) maternal and child health projects are implementing AMTSL interventions; these include public and private health facilities, rural and urban health facilities, as well as home births with SBAs. AMTSL is defined as the following three elements:

- a) Use of uterotonic drug within 1 minute of birth (oxytocin is the drug of choice, preferred 10 IU/IM)
- b) Performance of controlled cord traction
- c) Performance of uterine massage after the delivery of the placenta.

**Unit of Measure:** Number and percentage

**DATA ACQUISITION**

**Data Collection Method:** AMTSL data can be collected in two ways:

- 1) When AMTSL is included in the facility records (e.g., delivery register, partograph, patient chart), or where logbooks are used for SBAs for home deliveries, the data recorded during the specified time period can be collected
- 2) In cases where AMTSL is not part of routine data collection, the number of women receiving AMTSL is determined by surveys, (self-administered or interviewer-administered), as a proxy for what actually happens.

**Data Quality:**

- Where data are collected through routine data collection, validation checks should be performed by supervisory visits that include observation of births. In a low-birth-rate facility or for home deliveries, this can be accomplished by implementing demonstration of births and inspecting supplies of uterotonic (preferred oxytocin) in the facility or home. In the cases where patients procure their own uterotonic (preferred oxytocin) and there are no births currently happening during the supervisory visit, provision of AMTSL can be determined by surveying staff at the facility or home.
- Where there is no routine data collection, supervisory visits should still be performed, observational where possible and then demonstration in the cases where observation is not possible due to lack of deliveries during the supervisory visit (for facility and home).

Supervisory visit frequency will be determined by the ministry of health (national, district in the cases where this is decentralized) when AMTSL is included in routine data collection. For instances where AMTSL is not included in routine data collection, supervisory visits should occur once during the site specified period.

**Data Source(s), Timing/Frequency of Data Acquisition:** Facility registers, logbooks, or surveys (primary)—semiannually

<sup>17</sup> <http://www.who.int/healthinfo/statistics/indbirthswithskilledhealthpersonnel/en/> - refer to WHO definition of SBA

<sup>18</sup> Does not include **Caesarean** -Section or abortion



**DATA ANALYSIS AND REPORTING**

**Method of Calculation:** For facility and home births, the percentage is calculated by dividing the number of women who received AMTSL recorded in the past time period where AMTSL is recorded (numerator) by the total number of women with vaginal deliveries recorded in the past time period (denominator). **Site specified time period includes during the past 0–12 months, and can be set at fixed intervals for different locations. For example, some sites may record data during 1 month, and some during 3 months.**

**Data Reporting:** Facility registers, logbooks or surveys reported by USAID partners to POPPHI semiannually

**DATA QUALITY AND OTHER ISSUES**

**Known Data Limitations and Significance (if any):** When data is collected via survey, (when the data is not available in the facility records), there are limitations because the data is being recorded based on individual recall of health care staff and is subject to error. The supervisory visits provide some validation of the recall but again only occur once during the time period of data collection. Also, there is usually turnover of health care staff, so we cannot guarantee during baseline and final that the same staff will be interviewed (will try to do this but in some cases it is not possible), which means that someone may be part of the final survey who has not been present all the time during the CA or partner projects so for this person we will not be able to compare baseline and final.

**Actions Taken/Planned to Address Data Limitations:** Work to include AMTSL in routine data collection.

**Indicator Significance and Management Utility:** This indicator is used to measure whether AMTSL occurred at facility births or home births with SBAs. This is consistent with the project providing training in AMTSL for facility-based births and determining pre- and post-training if there is an improvement in the use of AMTSL for births.

**Location of data storage:** Data will be kept with the project team and reported to POPPHI semiannually.

**Annex IV: MAMAN assessment tool**

FACE SHEET– (can be prepared partially in advance)

IDENTIFICATION		For Supervisor
District / UPAZILA: .....		<input type="checkbox"/>
Sub-District / UNION:		<input type="checkbox"/>
VILLAGE: ..... CLUSTER NUMBER		<input type="checkbox"/> <input type="checkbox"/>
Hamlet / PARA:.....		
NAME OF HOUSEHOLD HEAD:		RECORD NUMBER
NAME OF WOMAN INTERVIEWED:		<input type="checkbox"/> <input type="checkbox"/>
NAME of INTERVIEWER		<input type="checkbox"/> <input type="checkbox"/>

	1	2	3	FINAL VISIT
DATE	<u>  </u> / <u>  </u> / <u>  </u> day / month / year	<u>  </u> / <u>  </u> / <u>  </u> day / month / year	<u>  </u> / <u>  </u> / <u>  </u> day / month / year	<i>For supervisor</i>
NAME of INTERVIEWER				DAY <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
				MONTH <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
				YEAR <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
RESULT CODE*				RESULT CODE* <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
*RESULT CODES: 1 COMPLETED 2 RESPONDENT NOT AT HOME 3 POSTPONED 4 REFUSED 5 OTHER _____ (SPECIFY)				
SUPERVISOR / FIELD EDITOR		QUALITY CONTROL OFFICER		Data entered by
NAME _____	<input type="checkbox"/>	NAME _____	<input type="checkbox"/>	NAME _____ <input type="checkbox"/> <input type="checkbox"/>
DATE _____	<input type="checkbox"/>	DATE _____	<input type="checkbox"/>	DATE _____ <input type="checkbox"/> <input type="checkbox"/>

*This questionnaire targets mothers of children less than 12 months of age.*

**INFORMED CONSENT**

Hello. How are you? My name is \_\_\_\_\_. I am working with (NAME OF ORGANIZATION). (NAME OF ORGANIZATION) is now or will soon be working in your village to improve the care mothers and newborn babies receive during pregnancy, birth and in the first weeks of life. I would like to get your permission to collect information about you and your child.

To get this information I will need to ask you some questions. I would thus like your permission to ask you some questions. Whatever you tell me will be kept strictly confidential and will not be disclosed to any other persons. I will only need 15 to 30 minutes of your time to complete my questions.

Participation is totally voluntary and you can choose not to tell me anything. You can ask me to leave at any moment, and refuse to answer any or all questions I have. However, we hope that you will participate since we think we can learn important facts and better understand what goes on during pregnancy, birth and after birth so we can provide better training to pregnant women and people who take care of them and their small babies.

At this time, do you want to ask me anything about what will follow?

May I have your agreement now?

Signature of interviewer:

Date:        /        /  
                  Day / month / year

RESPONDENT AGREES  
GO TO 1

1

**RESPONDENT DOES NOT AGREE .....2**  
**GO TO END**

Minimum Activities for Mothers and Newborns

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1	First I would like to ask you about the births you have had during your life. Have you ever given birth?	Yes ..... 1 No.....2	→ <b>END</b>
2	What is the age of your youngest child?	<b>DAYS</b> ..... <input type="text"/> <input type="text"/> <b>MONTHS</b> ..... <input type="text"/> <input type="text"/> <b>YEARS</b> ..... <input type="text"/> <input type="text"/> <b>DON'T KNOW</b> ..... 9	
3	What is the date of birth of your youngest child?	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Day                      Month                      Year	
4	<b>INTERVIEWER: CHECK QUESTIONS 2 and 3. AND WRITE THE AGE OF YOUNGEST CHILD IN COMPLETED MONTHS.</b>	Months..... <input type="text"/> <input type="text"/>	
5	<b>CHECK QUESTION 4</b> <b>CIRCLE THE APPROPRIATE CODE.</b>	<b>11 MONTHS OR YOUNGER</b> Yes ..... 1 No.....2	→ <b>END</b>
6	What is the name of your youngest child?	Name: _____	→ <b>TT1.</b>

Minimum Activities for Mothers and Newborns

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
TT1.	During pregnancy with (NAME) did you receive an injection in the arm to prevent the baby from getting tetanus, that is, convulsions after birth?	Yes ..... 1 No..... 2 Don't know..... 9	→ TT4
TT2.	While pregnant with (NAME), how many times did you receive such an injection?	Times..... <input type="text"/> Don't know..... 9	
<b>TT3</b>	<b>INTERVIEWER</b>  <b>CHECK TT2</b>	<b>2 or more times</b> Yes ..... 1 No..... 2	→ TT7 → TT4
TT4.	At any time before the pregnancy with (NAME) did you receive any tetanus injections, either to protect yourself or another baby?	Yes ..... 1 No..... 2 Don't know..... 9	→ TT6
TT5.	Before this pregnancy how many other times did you receive a tetanus injection?  IF 7 OR MORE TIMES, RECORD 7	Times..... <input type="text"/> Don't know..... 9	
<b>TT6</b>	<b>INTERVIEWER</b>  <b>CHECK TT2 and TT5</b>	<b>TT2 and TT5 COMBINED 2 or more times</b> Yes ..... 1 No..... 2	
<b>TT7.</b>	<b>INTERVIEWER</b> <b>CHECK TT3 AND TT6</b> <b>CIRCLE THE APPROPRIATE CODE.</b>	<b>Yes in either TT3 or TT6..... 1</b> <b>Yes in neither TT3 nor TT6 ..... 2</b>	

<b>INDICATOR</b>	<b>Description Of Indicator</b>	<b>Numerator</b>	<b>Denominator</b>
<i>Tetanus Toxoid Immunization</i>	<i>Percentage of mothers with children age 0–11 months who received at least two tetanus toxoid (TT or Td) injections before the birth of their youngest child</i>	<i>Number of women giving birth during a reference period (1 year before date of survey) who report receiving at least two doses of tetanus toxoid during or before their last pregnancy. (CODE 1 IN QUESTION TT7)</i>	<i>Number of mothers of children age 0–11 months in the survey</i>

Minimum Activities for Mothers and Newborns

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
SBA1	<p>Who assisted you with the delivery of (NAME)?</p> <p>Anyone else?</p> <p>PROBE FOR THE TYPE(S) OF PERSON(S) AND RECORD ALL MENTIONED.</p> <p>IF RESPONDENT SAYS NO ONE ASSISTED, PROBE TO DETERMINE WHETHER ANY ADULTS WERE PRESENT AT THE DELIVERY.</p>	<p><u>HEALTH PERSONNEL</u></p> <p>DOCTOR ..... A</p> <p>NURSE or MIDWIFE ..... B</p> <p>AUXILIARY MIDWIFE ..... C</p> <p>OTHER HEALTH STAFF ..... D</p> <p><u>OTHER PERSON</u></p> <p>TRADITIONAL BIRTH ATTENDANT ..... E</p> <p>COMMUNITY HEALTH WORKER ..... F</p> <p>RELATIVE/FRIEND ..... G</p> <p>OTHER ..... H (SPECIFY)</p> <p>NO ONE ..... Y</p>	
SBA2	<p><b>INTERVIEWER</b></p> <p><b>CHECK SBA1 AND CIRCLE THE APPROPRIATE CODE.</b></p>	<p>A or B or C ..... 1</p> <p>Neither A nor B nor C ..... 2</p>	

<b>INDICATOR</b>	<b>Description Of Indicator</b>	<b>Numerator</b>	<b>Denominator</b>
<i>Skilled attendance*</i>	<i>Percent of deliveries with a skilled attendant at birth</i>	<i>Number of deliveries with a skilled attendant (Doctor, nurse, midwife or auxiliary midwife = CODE 1 FOR SBA2) at birth during a specified period.</i>	<i>Number of mothers of children age 0–11 months in the survey</i>

Minimum Activities for Mothers and Newborns

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
<b>CC1</b>	<b>INTERVIEWER</b> <b>CHECK CODE FOR SBA2</b>	<b>SBA2 = 1 - YES.....1</b> <b>SBA2 = 2 - NO .....2</b>	<b>→ CC5</b>
CC2	Was a Clean Delivery Kit used during delivery? (SHOW DELIVERY KITS LOCALLY PROMOTED)	Yes ..... 1 No.....2 Don't know.....9	<b>→ CC5</b>
CC3	What instrument was used to cut the cord?	New razor blade ..... 1 New and boiled razor blade.....2 Used razor blade.....3 Used and boiled razor blade .....4 New scissors.....5 New and boiled scissors .....6 Used scissors .....7 Used and boiled scissors .....8 Knife.....9 Reed ..... 10  Other _____.....96 (Specify) Don't know.....97	
<b>CC4</b>	<b>INTERVIEWER - CHECK CC3</b>	<b>1 or 2 or 4 or 6 or 8.....1</b>	
<b>CC5</b>	<b>INTERVIEWER</b> <b>CHECK CC1, CC2 AND CC4 AND</b> <b>CIRCLE THE APPROPRIATE</b> <b>CODE.</b>	<b>Yes in either CC1, CC2 or CC4 .1</b> <b>Yes in neither CC1, CC2 nor CC4.2</b>	

<b>INDICATOR</b>	<b>Description Of Indicator</b>	<b>Numerator</b>	<b>Denominator</b>
<i>Clean cord care</i>	<i>Percent of births where cord was cut with a new or clean instrument or a clean birth kit was used.</i>	<i># of births using a clean instrument (CODE 1 FOR CC4)</i>	<i>Number of mothers of children age 0–11 months in the survey</i>

Minimum Activities for Mothers and Newborns

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
AM1	Immediately after (NAME) was born, before the placenta was delivered, did you receive an injection to prevent you from bleeding too much?	Yes ..... 1 No ..... 2 Don't know ..... 9	→ AM4
AM2	Immediately after you got an injection to prevent you from bleeding, did the birth attendant hold your stomach and pulled on the cord to help the placenta come out?	Yes ..... 1 No ..... 2 Don't know ..... 9	→ AM4
AM3	Immediately after the Placenta was delivered, did someone massage your uterus to make it contract strongly and to prevent you from bleeding too much?	Yes ..... 1 No ..... 2 Don't know ..... 9	→ AM4
<b>AM4</b>	<b>INTERVIEWER CHECK AM1, AM2 AND AM3 CIRCLE THE APPROPRIATE CODE.</b>	<b>ONLY if AM1 AND AM2 AND AM3 = YES ..... 1 AM1 or AM2 or AM3 = 2 or 9 ..... 2</b>	

<b>INDICATOR</b>	<b>Description Of Indicator</b>	<b>Numerator</b>	<b>Denominator</b>
<i>Active Mgmt (see Annex for more details on this indicator)</i>	<i>Percent of births within the past 12 months in targeted area that received active management of third stage of labor</i>	<i>number of births receiving AMTSL (CODE=1 in AM4)</i>	<i>Number of mothers of children age 0–11 months in the survey</i>



Minimum Activities for Mothers and Newborns

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
DR1	Was (NAME) dried (wiped) immediately after birth before the placenta was delivered?	Yes ..... 1 No..... 2 Don't know..... 9	
DR2.	Was (NAME) wrapped in a warm cloth or blanket immediately after birth before the placenta was delivered?	Yes ..... 1 No..... 2 Don't know..... 9	
<b>DR3</b>	<b>INTERVIEWER CHECK DR1 AND DR2 CIRCLE THE APPROPRIATE CODE.</b>	<b>DR1 = YES and DR2 = YES..... 1 DR1 or DR2 = 2 or 9 ..... 2</b>	

<b>INDICATOR</b>	<b>Description Of Indicator</b>	<b>Numerator</b>	<b>Denominator</b>
<i>Drying and wrapping</i>	<i>Percent of newborns who were dried and wrapped with a warm cloth or blanket, immediately after birth (before the placenta was delivered)</i>	<i>Number of newborns who were dried and wrapped with a warm cloth or blanket, immediately after birth (before placenta delivered = CODE 1 FOR DR3)</i>	<i>Number of mothers of children age 0–11 months in the survey</i>

Minimum Activities for Mothers and Newborns

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP				
BF1.	Did you ever breastfeed (NAME)?	Yes ..... 1 No..... 2	→ <b>BF6</b>				
BF2	How long after birth did you first put (NAME) to the breast?  IF LESS THAN 1 HOUR, RECORD 00 HOURS, IF LESS THAN 24 HOURS RECORD THE HOURS, OTHERWISE RECORD DAYS	IMMEDIATE.....00  HOURS ..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>  DAYS..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>  Don't remember ..... 9					
<b>BF3</b>	<b>INTERVIEWER - CHECK BF2</b>	<b>Less than one hour</b> Yes ..... 1  No (1 hour or more) ..... 2					
BF4	During the first three or four days after delivery, before your regular milk began flowing, did you give (NAME) the liquid (colostrum) that came from your breasts?	YES ..... 1  NO ..... 2  DON'T KNOW ..... 9					
BF5	In the first three days after delivery, was (NAME) given anything to drink other than breast milk?	YES ..... 1  NO ..... 2  DON'T KNOW ..... 9					
BF6	<b>INTERVIEWER CHECK BF1, BF3 AND BF5 AND CIRCLE THE APPROPRIATE CODE.</b>	<b>Yes in BF3 and No in BF5 ..... 1</b>  <b>No in either BF1 or BF3 or yes in BF5 ..... 2</b>					

<i>INDICATOR</i>	<i>Description Of Indicator</i>	<i>Numerator</i>	<i>Denominator</i>
<i>Immediate initiation of breastfeeding</i>	<i>Percent of infants less than 12 months of age who were put to the breast within one hour of delivery</i>	<i>Number of infants less than 12 months of age who were put to the breast within one hour of delivery (=CODE 1 FOR BF3)</i>	<i>Number of mothers of children age 0–11 months in the survey</i>
<i>Colostrum</i>	<i>Percent of mothers who gave colostrum</i>	<i>Number of newborns who received colostrum (=CODE1 FOR BF4)</i>	<i>Number of mothers of children age 0–11 months in the survey</i>

## Minimum Activities for Mothers and Newborns

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<b>INDICATOR</b>	<b>Description Of Indicator</b>	<b>Numerator</b>	<b>Denominator</b>
<i>Prelacteal feeds</i>	<i>Percent of mothers who did not give anything other than breastmilk (prelacteal feeds) in the first 3 days after birth.</i>	<i>Number of infants who did not receive anything other than breastmilk in the first 3 days after birth (=CODE 2 FOR BF5)</i>	<i>Number of mothers of children age 0–11 months in the survey</i>
<i>Immediate and exclusive breastfeeding of the newborn</i>	<i>Percent of newborns who were put to the breast within one hour of delivery and did not receive prelacteal feeds</i>	<i>Number of infants less than 12 months of age who were put to the breast within one hour of delivery and did not receive prelacteal feeds (=CODE 1 FOR BF6)</i>	<i>Number of mothers of children age 0–11 months in the survey</i>

Minimum Activities for Mothers and Newborns

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
PP1	Where did you give birth to (NAME)?	<b>HOME (own or other)..... 1</b> <b>HEALTH FACILITY (public sector or private) ..... 2</b>	→ <b>PP14</b>
PP2	After (NAME) was born, before you were discharged, did any health care provider check on your health?	<b>Yes ..... 1</b> <b>No..... 2</b>	→ <b>PP7</b>
PP3	How long after delivery did the first check take place?  IF LESS THAN ONE DAY, RECORD HOURS. IF LESS THAN ONE WEEK, RECORD DAYS.	<b>HOURS.....</b> <input type="text"/> <input type="text"/> <b>DAYS.....</b> <input type="text"/> <input type="text"/> <b>WEEKS.....</b> <input type="text"/> <input type="text"/> <b>DON'T KNOW ..... 99</b>	
<b>PP4</b>	<b>INTERVIEWER</b>  <b>CHECK PP3</b>	<b>Three days or less</b> <b>Yes ..... 1</b> <b>No (3 days or more)..... 2</b>	→ <b>PP7</b>
PP5	Who checked on your health at that time?  PROBE FOR MOST QUALIFIED PERSON.	<b><u>HEALTH PERSONNEL</u></b> <b>DOCTOR ..... A</b> <b>NURSE or CLINICAL OFFICER B</b> <b>MIDWIFE..... C</b> <b>AUXILIARY..... D</b>  <b><u>OTHER PERSON</u></b> <b>TRADITIONAL BIRTH</b> <b>ATTENDANT..... E</b> <b>HEALTH WORKER.....F</b>  <b>OTHER ..... Z</b> (SPECIFY)	
<b>PP6</b>	<b>INTERVIEWER</b> <b>CHECK PP5</b>	<b>A or B or C..... YES</b> <b>Neither A nor B nor C ..... NO</b>	
<b>PP7</b>	<b>INTERVIEWER</b>  <b>CHECK PP2, PP4 and PP6</b>	<b>Yes in PP4 <u>AND</u> PP6..... 1</b> <b>NO in PP2 <u>OR</u> PP4 <u>OR</u> PP6..... 2</b>	→ <b>PN1</b>
PP8	After you were discharged, did any health care provider or a traditional birth attendant check on your health?	<b>Yes ..... 1</b> <b>No..... 2</b>	→ <b>PP13</b>

Minimum Activities for Mothers and Newborns

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
PP9	How long after delivery did the first check take place?  IF LESS THAN ONE DAY, RECORD HOURS. IF LESS THAN ONE WEEK, RECORD DAYS.	HOURS..... <input type="text"/> <input type="text"/> DAYS..... <input type="text"/> <input type="text"/> WEEKS ..... <input type="text"/> <input type="text"/> DON'T KNOW ..... 99	
<b>PP10</b>	<b>INTERVIEWER</b>  <b>CHECK PP9</b>	Three days or less Yes ..... 1  No (3 days or more)..... 2 → PP13	
PP11	Who checked on your health at that time?  PROBE FOR MOST QUALIFIED PERSON.	<u><b>HEALTH PERSONNEL</b></u> DOCTOR ..... A NURSE or CLINICAL OFFICER B MIDWIFE..... C AUXILIARY ..... D  <u><b>OTHER PERSON</b></u> TRADITIONAL BIRTH ATTENDANT ..... E HEALTH WORKER.....F TRAINED TBA ..... G TRAINED HW ..... H  OTHER ..... Z (SPECIFY)	
<b>PP12</b>	<b>INTERVIEWER</b> <b>CHECK PP11</b>	A or B or C or G or H..... YES Neither A nor B nor C nor G nor H ..... NO	
<b>PP13</b>	<b>INTERVIEWER</b> <b>CHECK PP8, PP10 and PP12</b>	Yes in PP10 <u>AND</u> PP12..... 1 → PN1  NO in PP8 <u>OR</u> PP10 <u>OR</u> PP11 ..... 2 → PN1	
PP14	After (NAME) was born, did any health care worker or a traditional birth attendant check on your health?	Yes ..... 1  No..... 2 → PP19	
PP15	How long after delivery did the first check take place?  IF LESS THAN ONE DAY, RECORD HOURS. IF LESS THAN ONE WEEK, RECORD DAYS.	HOURS..... <input type="text"/> <input type="text"/> DAYS..... <input type="text"/> <input type="text"/> WEEKS ..... <input type="text"/> <input type="text"/> DON'T KNOW ..... 99	

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NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
PP16	INTERVIEWER  CHECK PP15	Three days or less Yes ..... 1  No (3 days or more)..... 2 → PP19	
PP17	Who checked on your health at that time?  PROBE FOR MOST QUALIFIED PERSON.	<u>HEALTH PERSONNEL</u> DOCTOR ..... A NURSE or CLINICAL OFFICER B MIDWIFE..... C AUXILIARY ..... D  <u>OTHER PERSON</u> TRADITIONAL BIRTH ATTENDANT ..... E HEALTH WORKER.....F TRAINED TBA ..... G TRAINED HW ..... H  OTHER ..... Z (SPECIFY)	
PP18	INTERVIEWER CHECK PP17	A or B or C or G or H..... YES Neither A nor B nor C nor G nor H ..... NO	
PP19	INTERVIEWER CHECK PP 14, PP16 and PP18	Yes in PP16 <u>AND</u> PP18..... 1  NO in PP14 <u>OR</u> PP16 <u>OR</u> PP18 ..... 2	
PP20	Are you currently using a modern contraceptive method?	YES.....1  NO.....2	
PP21	What method are you using?	LAM Progestin-only pill Combined oral pill Depo Provera (injection) Implant IUD Female sterilization Male sterilization Condom Other barrier method Other _____	

<b>INDICATOR</b>	<b>Description Of Indicator</b>	<b>Numerator</b>	<b>Denominator</b>
<i>Postpartum visit (maternal)</i>	<i>Number and percent of postpartum visits made by appropriately trained workers * to mothers who delivered in facilities or at home within 3 days</i>	<i>Number of home and facility deliveries* that received one PP visit within 3 days after</i>	<i>Number of mothers of children age 0–11 months in</i>

Minimum Activities for Mothers and Newborns

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	<i>of birth</i>	<i>delivery (CODE=1 for PP7, PP13 or PP19)</i>	<i>the survey</i>
	<i>*Trained workers include: skilled birth attendant (SBA) or trained community health worker (CHW) which includes trained traditional birth attendants (TBA)</i>	<i>*For facility deliveries, a postpartum check prior to discharge can be counted as a postpartum visit</i>	
Use of LAM	Percent of postpartum women with infants under 6 months using LAM	Number of postpartum women with infants under 6 months, using LAM	Number of postpartum women with infants under six months
Family Planning	Number and percent of postpartum women using a modern contraceptive method	Number of postpartum women using FP during 0-11 months after delivery	Total number of deliveries

Minimum Activities for Mothers and Newborns

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
<b>PN1</b>	<b>INTERVIEWER CHECK PP1</b>	<b>HOME DELIVERY ..... 1</b> <b>FACILITY DELIVERY ..... 2</b>	→ <b>PN14</b>
PN2	After (NAME) was born, before you were discharged from the health facility, did any health care provider check on (NAME)'s health?	<b>Yes ..... 1</b> <b>No ..... 2</b>	→ <b>PN7</b>
PN3	How many hours, days or weeks after the birth of (NAME) did the first check of (NAME) take place?	<b>HOURS.....</b> <input type="text"/> <input type="text"/> <b>DAYS.....</b> <input type="text"/> <input type="text"/> <b>WEEKS.....</b> <input type="text"/> <input type="text"/> <b>DON'T KNOW ..... 99</b>	
<b>PN4</b>	<b>INTERVIEWER CHECK PN3</b>	<b>Three days or less</b> <b>Yes ..... 1</b> <b>No (3 days or more)..... 2</b>	→ <b>PN7</b>
PN5	Who checked on (NAME)'s health at that time?  PROBE FOR MOST QUALIFIED PERSON.	<b><u>HEALTH PERSONNEL</u></b> <b>DOCTOR ..... A</b> <b>NURSE or CLINICAL OFFICER B</b> <b>MIDWIFE..... C</b> <b>AUXILIARY..... D</b>  <b><u>OTHER PERSON</u></b> <b>TRADITIONAL BIRTH</b> <b>ATTENDANT..... E</b> <b>HEALTH WORKER.....F</b>  <b>OTHER ..... Z</b> (SPECIFY)	
<b>PN6</b>	<b>INTERVIEWER CHECK PN5</b>	<b>A or B or C..... YES</b> <b>Neither A nor B nor C ..... NO</b>	
<b>PN7</b>	<b>INTERVIEWER CHECK PN2, PN4 and PN6</b>	<b>Yes in PN4 <u>AND</u> PN6..... 1</b> <b>NO in PN2 OR PN4 OR PN6..... 2</b>	→ <b>END</b>
PN8	After you were discharged, did any health care provider or a traditional birth attendant check on (NAME)'s health?	<b>Yes ..... 1</b> <b>No..... 2</b>	→ <b>PN13</b>



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NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
PN9	<p>How many hours, days or weeks after the birth of (NAME) did the first check of (NAME) take place?</p> <p>IF LESS THAN ONE DAY, RECORD HOURS. IF LESS THAN ONE WEEK, RECORD DAYS.</p>	<p>HOURS..... <input type="text"/> <input type="text"/></p> <p>DAYS..... <input type="text"/> <input type="text"/></p> <p>WEEKS ..... <input type="text"/> <input type="text"/></p> <p>DON'T KNOW ..... 99</p>	
<b>PN10</b>	<b>INTERVIEWER CHECK PN9</b>	<p>Three days or less Yes ..... 1</p> <p>No (3 days or more)..... 2</p>	
PN11	<p>Who checked on (NAME)'s health at that time?</p> <p>PROBE FOR MOST QUALIFIED PERSON.</p>	<p><b>HEALTH PERSONNEL</b> DOCTOR ..... A NURSE or CLINICAL OFFICER B MIDWIFE ..... C AUXILIARY ..... D</p> <p><b>OTHER PERSON</b> TRADITIONAL BIRTH ATTENDANT ..... E HEALTH WORKER ..... F TRAINED TBA ..... G TRAINED HW ..... H</p> <p>OTHER ..... Z (SPECIFY)</p>	
<b>PN12</b>	<b>INTERVIEWER CHECK PN11</b>	<p>A or B or C or G or H ..... YES</p> <p>Neither A nor B nor C nor G nor H ..... NO</p>	
<b>PN13</b>	<b>INTERVIEWER CHECK PN8, PN10 and PN12</b>	<p>Yes in PN10 <u>AND</u> PN12 ..... 1 → END</p> <p>NO in PN8 <u>OR</u> PN10 <u>OR</u> PN12..... 2 → END</p>	
PN14	<p>During the first days after (NAME) was born, did any health care provider or a traditional birth attendant check on (NAME)'s health?</p>	<p>Yes ..... 1</p> <p>No..... 2 → PN19</p>	
PN15	<p>How many hours, days or weeks after the birth of (NAME) did the first check of (NAME) take place?</p> <p>IF LESS THAN ONE DAY, RECORD HOURS. IF LESS THAN ONE WEEK, RECORD DAYS.</p>	<p>HOURS..... <input type="text"/> <input type="text"/></p> <p>DAYS..... <input type="text"/> <input type="text"/></p> <p>WEEKS ..... <input type="text"/> <input type="text"/></p> <p>DON'T KNOW ..... 99</p>	

Minimum Activities for Mothers and Newborns

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
PN16	INTERVIEWER CHECK PN3	Three days or less Yes ..... 1  No (3 days or more)..... 2	→ PN19
PN17	Who checked on (NAME)'s health at that time?  PROBE FOR MOST QUALIFIED PERSON.	<u>HEALTH PERSONNEL</u> DOCTOR ..... A NURSE or CLINICAL OFFICER B MIDWIFE ..... C AUXILIARY ..... D  <u>OTHER PERSON</u> TRADITIONAL BIRTH ATTENDANT ..... E HEALTH WORKER ..... F TRAINED TBA ..... G TRAINED HW ..... H  OTHER ..... Z (SPECIFY)	
PN18	INTERVIEWER CHECK PN17	A or B or C or G or H ..... YES Neither A nor B nor C nor G nor H ..... NO	
PN19	INTERVIEWER CHECK PN 14, PN16 and PN18	Yes in PN16 <u>AND</u> PN18 ..... 1  NO in PN14 <u>OR</u> PN16 <u>OR</u> PN18 ..... 2	→ END

INDICATOR	Description Of Indicator	Numerator	Denominator
Postnatal visit* (neonatal)	Number and percent of newborn care visits made by appropriately trained workers * to newborns delivered in facilities or at home within 3 days of birth	Number of newborns born at home and in facilities that received one newborn care visit within 3 days of birth (CODE=1 for PN7, PN13 or PN19)	Number of mothers of children age 0–11 months in the survey
	*Trained workers include: skilled birth attendant (SBA) or trained community health worker (CHW) which includes trained traditional birth attendants (TBA)	* For facility deliveries, a postnatal check prior to discharge can be counted as a postnatal visit	

Minimum Activities for Mothers and Newborns

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NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
<b>END</b>	Thank you so much for taking time to answer my questions. I wish you and your child well.		
	<b>INTERVIEWER: CHECK THE QUESTIONNAIRE CAREFULLY BEFORE LEAVING THE RESPONDENT. HAND THE QUESTIONNAIRE TO YOUR SUPERVISOR FOR CODING BEFORE LEAVING THE VILLAGE.</b>		