

A photograph of a woman with dark skin and hair, wearing a yellow lace-trimmed top, sitting in a hospital bed. She is holding a newborn baby wrapped in a white blanket. The baby is lying on a red blanket. The background shows a hospital room with various items on a table, including a yellow cloth and a patterned bag. The text is overlaid on a semi-transparent red and white background.

OPERATIONAL GUIDELINES ON IMPROVING NEWBORN HEALTH IN REFUGEE OPERATIONS

The electronic version of this document is posted on the UNHCR website. Hard copies can be obtained by contacting the Public Health Section at HQPHN@unhcr.org. All reasonable precautions have been taken by the Office of United Nations High Commissioner for Refugees to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied.

Acronyms

ANC	antenatal care
ART	antiretroviral therapy
ARVs	antiretroviral drugs
AZT	zidovudine
BEmOC	basic emergency obstetric care
CEmOC	comprehensive emergency obstetric care
EmOC	emergency obstetric care
EPI	expanded programme on immunization
HIS	health information system
HIV	human immunodeficiency virus
ICU	intensive care unit
IPTp	intermittent preventative treatment of malaria in pregnancy
MOH	ministries of health
NVP	nevirapine
PPROM	pre-term pre-labour rupture of membranes
Rh	rhesus
SP	sulfadoxine-pyrimethamine
UNHCR	Office of the United Nations High Commissioner for Refugees
WHO	World Health Organization

Contents

1. PURPOSE	3
2. SCOPE	3
3. RATIONALE	4
4. GUIDELINES	4
4.1. BACKGROUND	4
4.2. HOW TO IMPROVE PLANNING AND IMPLEMENTATION OF NEWBORN HEALTH PROGRAMMING	6
4.3. HOW TO IMPROVE MONITORING OF NEWBORN HEALTH PROGRAMMING	15
5. ANNEXES	20
6. REFERENCES CITED	22

Cover page:
From top: Central African Republic / UNHCR / S. Phelps / December 2013;
Jordan / UNHCR / J. J. Kohler / September 2013

Back cover: S.Hoibak/UNHCR Lebanon/2014

Graphic Design: Alessandro Mannocchi / Rome



Tanzania / Save the Children / J. Matas / November 2013

1. Purpose

These operational guidelines, in line with the UNHCR global strategy for public health 2014-2018, provide practical orientation for UNHCR and partner staff in the field on improving newborn health in refugee operations. The document provides background information and definitions, covers specific points of good practice to consider when planning maternal and newborn health programming, and offers advice on common challenges faced in many areas where UNHCR and its partners work.

2. Scope

These guidelines apply in all UNHCR operations and in all phases of displacement. The guidelines are directed primarily at UNHCR public health staff and clinical staff working for partners in refugee settings. These guidelines build on existing strategies and policies, such as the *Every Newborn Action Plan*, *UN Commission on Information and Accountability for Women and Children's Health*, *UN Commission on Life-Saving Commodities for Women and Children's Health*, *Child Survival Call to Action: A Promise Renewed*, and *Partnership for Maternal, Newborn and Child Health* with special consideration for the unique needs of refugee populations (see annexes).

The guidelines are also based on the growing body of evidence related to newborn health as indicated in the 2013 World Health Organization (WHO) recommendations on newborn health, the programmatic and operational challenges identified during neonatal mortality studies conducted in Farchana refugee camp in Chad in 2012 and Nyarugusu refugee camp in Tanzania in 2013, a review of neonatal mortality in Jordan in 2013, and consultations with UNHCR public health staff.

Compliance with these guidelines is expected.

3. Rationale

Reducing neonatal mortality requires planning and implementation of newborn health programming at the community and facility level. Whether newborns who need care are brought to the health facility from home, transferred from another institution or ward, or brought from the delivery room as a result of a complicated birth, managing their care requires planning to ensure that trained health workers are available and have the resources needed to continuously assess the infant's condition and take rapid action to address potentially catastrophic events. This document is intended to provide general guidance to improve newborn health programming at health facilities in refugee settings, and to provide tools for gathering context specific information to further adapt strategies to meet the refugee population needs.

UNHCR recognizes the importance of a continuum of reproductive, maternal and newborn care from the community to the health facility and hospital levels; this document focuses primarily on facility-based programming around the time of birth when most lives can be saved. Guidelines are organized as follows:

- 4.1: Background
- 4.2: How to improve planning and implementation of newborn health programming
- 4.3: How to improve monitoring of newborn health programming

Additional resources, including general references, clinical guidelines and sample assessment tools are presented as annexes.

4. Guidelines

Based on definitions approved by UNHCR's Guidance Management System, this document should be treated as 'operational guidelines'. These guidelines are applicable in low-middle-income countries, refugee camps, urban and other settings where refugees live outside of camps where UNHCR is supporting public health programmes.

4.1 BACKGROUND

Understanding the reasons why newborns die and factors affecting the coverage and quality of antenatal, intrapartum and postnatal care is crucial for improving newborn health programming in any setting. The following sections provide a brief summary of what is known about the burden and causes of neonatal mortality globally, as well as the findings of recent studies of neonatal mortality in protracted refugee settings.

4.1.1 GLOBAL MAGNITUDE AND TRENDS

Neonatal deaths, defined as any death that occurs in the first 28 days of life, currently account for approximately 44 per cent of all deaths of children under five years of age in low- and middle- income countries. Approximately three-quarters of these deaths are early neonatal deaths that occur during the first week of life, including 36 per cent that occur within the first 24 hours after birth.

Current estimates suggest that approximately 2.9 million newborn deaths occur each year, along with approximately 1.2 million intrapartum stillbirths (deaths that occur during labour). More than half of all neonatal deaths occur in countries with a neonatal mortality rate of 30 or more deaths per 1,000 live births. Many of these countries have experienced recent conflict or humanitarian emergencies and are hosting refugees.^{1,2 *}

4.1.2 CAUSES OF NEONATAL MORTALITY

The three major causes of neonatal mortality are complications of premature birth and low birth weight, infections, and complications that arise during the birth process (previously known as birth asphyxia).

* Afghanistan, Angola, Burundi, Central African Republic, Chad, Comoros, Congo, Cote d'Ivoire, DRC, Djibouti, Equatorial Guinea, Ethiopia, Guinea, Guinea-Bissau, India, Lesotho, Mali, Mauritania, Mozambique, Nigeria, Pakistan, Sierra Leone, Somalia, South Sudan, Zimbabwe.

These causes account for more than 85 per cent of newborn mortality.

- Babies born before 37 weeks gestation are considered pre-term. **Pre-term birth** is the most common cause of neonatal mortality worldwide, responsible for 1.1 million deaths per year, 75 per cent of which are preventable. Many risk factors are known, but some cases of pre-term birth have unclear causes. The four main conditions that lead to pre-term birth include: pre-term labour, pre-term pre-labour rupture of membranes, antepartum haemorrhage, and severe pre-eclampsia.

Babies born weighing less than 2500 grams are considered low birth weight. **Low birth weight** can be a consequence of preterm birth, small size for gestational age (usually attributed to intrauterine growth retardation), or a combination of both. Directly or indirectly, low birth weight contributes to approximately 60-80 per cent of all newborn deaths.

- Severe bacterial infections in newborns can result from any number of infectious agents and can be acquired in-utero, during delivery or after birth. Some infections, such as syphilis, are transmitted from mother-to-child during pregnancy or delivery. Other infections, like tetanus, are the result of environmental causes or behavioural practices during the neonatal period. Major infections like septicemia, meningitis and pneumonia are difficult to differentiate in newborns, and are therefore grouped together as **possible severe bacterial infections**. These infections account for approximately one-third of newborn deaths globally, and up to 50 per cent of newborn deaths in high mortality settings.
- **Intrapartum-related neonatal deaths** (birth asphyxia) account for nearly one-quarter of neonatal deaths. These deaths result from deprivation of oxygen to the newborn during the birth process, most commonly due to a drop in maternal blood pressure or interference with blood flow to the infant's brain during delivery.

Other, less common causes of neonatal death include congenital anomalies such as heart defects, neural tube defects and metabolic disorders. Causes of newborn deaths in refugee settings are not different

from causes of newborn death globally. However, underlying risk factors and conditions that contribute to newborn deaths can be exacerbated in refugee emergencies with inadequate shelter and sanitation, poor maternal diets, limited access to skilled attendance at delivery, limited capacity for care in the first 24-48 hours after delivery, and low rates of early and exclusive breastfeeding.

4.1.3 NEONATAL MORTALITY IN REFUGEE SETTINGS

Few published studies exist on the burden of neonatal mortality in complex humanitarian emergencies and even fewer provide information on improving service delivery in these settings.³

As part of UNHCR's efforts to develop improved strategies for neonatal mortality surveillance and survival activities, studies were conducted in Farchana refugee camp in Chad in 2012 and Nyarugusu refugee camp in Tanzania in 2013 to assess the accuracy of the UNHCR health information system (HIS) in capturing neonatal deaths, improve understanding of causes of neonatal mortality in these refugee camps, and provide recommendations on how to reduce avoidable neonatal deaths. These studies used capture-recapture methodology to measure neonatal deaths, stillbirths and live births and used WHO verbal autopsy methodology to ascertain underlying causes of neonatal deaths identified. While the causes of death in both settings were consistent with those found in studies of low and middle income countries – most deaths were due to prematurity, infection, or both and occurred in the first week of life – the location and circumstances surrounding the deaths varied. A neonatal death audit process was also established in Zaatari refugee camp in Jordan to investigate an increased number of neonatal deaths detected in the HIS in 2013. Initial audits found that most deaths were due to prematurity, infection or congenital anomalies, and that contributing factors included poor knowledge of conditions that require urgent care and weak emergency transport systems.

Understanding context-specific needs is the first step in improving newborn health programming. Because refugee operations differ considerably in the robustness and reach of health services, programmes must be tailored to the specific characteristics,



Timor Leste / UNHCR / N. Ng / June 2006

opportunities and constraints of the setting to be effective. Focus should be on identifying specific positive practices that can be integrated into services along the community-to-hospital continuum of care and eliminating common negative practices that increase the risk of poor outcomes.

4.2 HOW TO IMPROVE PLANNING AND IMPLEMENTATION OF NEWBORN HEALTH PROGRAMMING

Prioritizing interventions in settings with limited resources can be a challenge. UNHCR can improve newborn health programming by increasing awareness of interventions that can be integrated into routine services across the reproductive, maternal, newborn, child and adolescent continuum of care and by supporting health partners to determine the most promising strategies by looking at the particular situations they face, including local epidemiology and population distribution, service utilization patterns, barriers to access, availability of resources and robustness of support systems.

KEY RESOURCES – HEALTH SERVICE GUIDELINES

Antenatal care

[UNHCR Strategic Plan for Anaemia Prevention, Control and Reduction \(2008\)](#)

[UNHCR Policy Statement of HIV Testing and Counselling in Health Facilities for Refugees \(2014\)](#)

Labour and delivery care

[WHO Managing Complications in Pregnancy and Childbirth \(2003\)](#)

[UNHCR Principles and Guidance for Referral Health Care \(2009\)](#)

[Inter-agency Field Manual on Reproductive Health in Humanitarian Settings \(2010\)](#)

Essential newborn and postnatal care

[UNICEF Toolkit for Setting Up Special Care Newborn Units, Stabilization Units and Newborn Care Corners \(2011\)](#)

UNHCR Standard Operating Procedures for the Handling of Breast Milk Substitutes in Refugee Situations (*forthcoming*)

Public Health Interventions

[Malaria Prevention: Quick Checklist \(2013\)](#)

As a starting point, UNHCR and its partners should review current health programming to identify bottlenecks in service delivery and missed opportunities to save newborn lives. Emphasis should be on identifying a core set of interventions to improve the availability and quality of newborn care on the day of birth, when 46 per cent of all maternal deaths and 40 per cent of all stillbirths and neonatal deaths occur. These interventions should then be considered in the design, budgeting, staffing, implementation and monitoring of refugee health programmes.

Complementary initiatives can then be built around this core set of interventions to strengthen linkages between communities and facilities during the antenatal and postnatal periods, raise awareness of danger signs for obstetric and newborn complications, encourage timely care seeking, and monitor the impact of interventions.

4.2.1 FOCUS OPERATIONAL RESPONSE ON LOW-COST, HIGH-IMPACT INTERVENTIONS

There is substantial evidence that the vast majority of newborn deaths can be prevented with low-cost, high-impact health interventions delivered through well-functioning health systems. These include:

I. PRECONCEPTION CARE

Preventive, promotive and curative care before pregnancy or preconception care aims at reducing behaviours and individual and environmental factors that contribute to poor maternal and child health outcomes.

Key interventions include:

- **Screening and treatment of anaemia**
Research shows that anaemia before conception increases the risk of low birth-weight. Screening adolescent girls and women for anaemia should be routine at every health contact at outpatient clinics in refugee camp settings, and treatment should be provided for those found to be iron deficient, even in the absence of pregnancy.
- **Promoting healthy timing and spacing of pregnancies, and providing family planning services**
Women who have very closely spaced pregnancies

are more likely to have pre-term or low-birth-weight babies, and adolescent mothers are more likely to have poor newborn health.⁴ After a live birth, the recommended minimum interval before attempting the next pregnancy is at least 24 months. After a miscarriage, the recommended minimum interval to next pregnancy should at least be six months in order to reduce risks of adverse maternal and perinatal outcomes. This can be done by strengthening information, education and communication efforts on the benefits of family planning and where to seek services, engaging community leaders and influential persons, and ensuring that services are accessible to adolescent girls, women, men and couples within health facilities and in the community.

II. ANTENATAL CARE (ANC)

Antenatal care provides an opportunity to screen for and address low-prevalence, high-risk pregnancy complications associated with newborn complications and mortality. Services should be put in place as early as possible in an emergency response, and pregnant women should be encouraged to visit an antenatal clinic as early as possible during the first trimester.

The below ANC package should be provided:

- **Screening and treatment for hypertension**
Hypertensive disorders of pregnancy can complicate 8 per cent of pregnancies and are the second most common cause of maternal deaths worldwide. Detection and management of hypertensive diseases of pregnancy (including treatment with magnesium sulphate) can reduce antepartum stillbirths by 20 per cent.
- **Screening and treatment for anaemia**
Anaemia during pregnancy puts infants at risk of permanent cognitive damage and mortality. Routine iron and folic acid supplementation, along with prevention of malaria and control of hookworms, has been shown to prevent anaemia in settings where prevalence is high. In all settings, pregnant women should be screened for anaemia as early as possible during pregnancy and in every trimester including at the time of delivery. Those diagnosed with anaemia should be treated according to standard clinical protocols.

- **Counselling, testing and treatment for syphilis**
Universal screening for syphilis has been shown to be cost-effective, even in areas of low prevalence.⁵ In syphilis-endemic countries, antenatal syphilis screening and treatment of detected cases with penicillin could reduce pre-term births by 64 per cent and neonatal deaths due to sepsis by 80 per cent.⁶ All pregnant women should receive counselling and testing for syphilis as early as possible in during pregnancy in order to maximize the effects of treatment.
- **Tetanus toxoid vaccination**
Studies show that vaccination of pregnant women with two or more doses of tetanus toxoid given at least 4 weeks apart can reduce the risk of neonatal tetanus by 65 per cent and mortality due to tetanus by 94 per cent.⁶
- **Intermittent preventative treatment of malaria and provision of insecticide treated mosquito nets**
Studies have shown that intermittent preventative treatment of malaria in pregnancy (IPTp) can reduce the risk of neonatal death by 31 per cent, and use of insecticide treated mosquito nets in pregnancy can reduce low birth weight by 20 per cent.⁶ The recommended regimen for IPTp is directly observed therapy of three tablets of 500mg/25mg sulfadoxine-pyrimethamine (IPTp-SP) at every ANC visit, with at least two doses provided during the second and third trimester of pregnancy.
- **Counselling, testing and treatment for HIV (according to national protocols)**
Antiretroviral drugs (ARVs) reduce viral replication and can decrease mother-to-child transmission of HIV. Current WHO guidelines recommend that HIV-positive pregnant or breastfeeding women go on a regimen of three ARVs as soon as possible and stay on these drugs for life. All pregnant women should receive counselling and be offered testing for HIV, and treatment in accordance with national protocols.

- **Blood group typing and anti-D administration**
A newborn can develop haemolytic disease that leads to jaundice, oedema and difficulty in breathing when there is an incompatibility between the rhesus (Rh) blood types of the mother and the foetus. This can be prevented by testing the blood type of the mother during antenatal care, providing those who are Rh-negative with injections of Rho(D) Immune Globulin (anti-D) at 28 weeks gestation to prevent her from developing antibodies toward the foetus, and providing the mother with a second dose of anti-D at birth if the child is found to be Rh positive. In refugee settings, national protocols for management of Rh incompatibility should be followed, and efforts made to advocate for anti-D to be made available to all who need it.

III. MANAGEMENT OF THREATENED PRE-TERM DELIVERY & OBSTETRIC COMPLICATIONS

Interventions to manage pre-term labour aim at reducing serious complications arising from pre-term birth, the most common cause of neonatal mortality. These interventions require care-seeking at the onset of labour, availability of essential medicines, and staff able to recognize indications of pre-term labour and provide care:

- **Administer tocolytics for pregnant women with pre-term labour**
Medications to stop uterine contractions can be given to prolong pregnancy for a short time (up to 48 hours) to allow administration of antenatal corticosteroids and transfer to a higher level facility if necessary. Recommended tocolytics include salbutamol, nifedipine or indomethacin.
- **Administer antenatal corticosteroids to every pregnant woman who is less than 34 weeks gestation and has a condition that increases the possibility of pre-term delivery**
Any mother who is less than 34 completed weeks of pregnancy and has pre-term labour, pre-term pre-labour rupture of membranes, antepartum haemorrhage or severe pre-eclampsia/eclampsia should be given antenatal corticosteroids, which accelerate lung development of the foetus while it is still in the uterus. The recommended regimen is 4 injections of dexamethasone 6mg,

a low-cost, heat-stable generically produced drug. Administration of antenatal corticosteroids is the most effective intervention to prevent respiratory distress syndrome, and increasing its utilization for preterm labour in facility births could reduce neonatal deaths by 53 per cent.⁶

- **Administer antibiotics to women with pre-term pre-labour rupture of membranes (PPROM)**

Antibiotics should be given to women with PPRM because it delays labour and reduces the risk of both respiratory distress syndrome and infection in neonates. Current recommendations are to give ampicillin 2gms IV twice daily and erythromycin 250mg orally three times daily for 2 days, followed by amoxicillin 500 mg orally and erythromycin 250 mg orally three times daily to complete 7 days of therapy. Increasing utilization of antibiotics for PPRM could reduce neonatal deaths due to prematurity by 12 per cent and neonatal deaths due to sepsis by 8 per cent⁶

IV. MANAGEMENT OF CHILDBIRTH

Skilled care during labour, including careful monitoring of the foetal heart rate and timely action on indications of distress, could prevent 43 per cent of newborn deaths. These interventions are essential in any setting:

- **Safe and clean delivery in health facilities, with a skilled attendant**

Studies have shown that delivery with a skilled attendant reduces the risk of neonatal death by 25 per cent and clean birth practices at facilities reduce the risk of neonatal death due to infection by 27 per cent.⁶ Ensuring health workers have adequate resources to facilitate a safe, clean delivery is critical for preventing newborn infections. The “five cleans” recommended by WHO include hand washing (before, during and after delivery), a clean delivery surface, clean cord cut, clean cord ties and clean cord stump care. The use of a partogram to monitor and record the progress of labour, the foetal heart, and timely action on indications of foetal distress or labour dystocia and desisting from harmful practices such as dangerous application of fundal pressure during labour can prevent life-threatening asphyxia.

Institutional deliveries should be promoted for 100 per cent of pregnant women through active community mobilization.

- **Ensure all women experiencing complications receive timely emergency obstetric care (EmOC)**

Timely provision of emergency obstetric care can avert neonatal deaths resulting from poor foetal oxygenation associated with complications during childbirth. Health facilities without an operating theatre can provide basic emergency obstetric care (BEmOC) which includes administration of parenteral antibiotics, administration of parenteral anticonvulsants (e.g., magnesium sulphate), manual removal of placenta, assisted vaginal delivery, manual removal of retained products of conception and basic neonatal resuscitation. Facilities with an operating theatre should ensure that resources and skilled personnel are in place to provide all of these services, as well as caesarean section and safe blood transfusion, as provision of BEmOC has been shown to reduce risks of neonatal death by 40 per cent and provision of comprehensive emergency obstetric care (CEmOC) has been shown to reduce risks of neonatal death by 85 per cent.⁵ In settings where women experiencing complications must be referred to national facilities for emergency care, clear protocols should be in place defining criteria and pathways for referral, as well as how to initiate treatment to stabilize the woman and newborn before transfer. To watch a video on basic neonatal resuscitation, click [here](#).

V. ESSENTIAL NEWBORN CARE

Essential newborn care, including proper cord care, thermal care, initiation of breathing and resuscitation, early initiation of exclusive breastfeeding, and eye care could prevent an additional 10 per cent of newborn deaths.⁶

▪ **Delay cord clamping**

A delay in clamping the cord allows the continued passage of blood from the placenta to the baby for an additional 1 to 3 minutes after birth, which dramatically increases iron stores and prevents anaemia. WHO recommends delayed cord clamping also among those living with HIV or women with unknown HIV status.⁷

▪ **Ensure clean cord care**

All newborns should receive clean cord care, including use of chlorhexidine digluconate 7.1 per cent to prevent infection in resource-limited settings. Application of chlorhexidine digluconate 7.1 per cent to the umbilical cord stump could reduce neonatal mortality by 12 per cent.⁶

▪ **Provide appropriate thermal care for all newborns**

All newborns without complications should be thoroughly dried, covered (including hat or head covering), and kept in skin-to-skin contact with their mothers during the first hour after birth to prevent hypothermia and promote breastfeeding. Bathing should be delayed for at least 24 hours after birth. Provision of appropriate thermal care could avert 20 per cent of newborn deaths caused by pre-term birth complications and 10 per cent of deaths in full-term babies.⁶

▪ **Provide stimulation and, if needed, bag and mask resuscitation to all babies who do not breathe at birth**

As many as 10 per cent of newborn babies require some type of assistance to begin breathing at birth, but fewer than 1 per cent require advanced measures such as oxygen. Newborn babies who do not breathe spontaneously after thorough drying should be stimulated by rubbing the back 2-3 times. With this care, the majority of newborns will

Lebanon / UNHCR / S. Hoibak



initiate and sustain breathing within the “golden minute” after birth. In newborn babies who do not breathe spontaneously despite thorough drying and additional stimulation, positive-pressure ventilation should be initiated using a self-inflating bag and mask within a minute of birth. Health workers present at delivery must be prepared, recognize the non-breathing baby, and immediately begin the steps of neonatal resuscitation, and assess the adequacy of ventilation by measurement of the heart rate after every 60 seconds of ventilation with visible chest movements. If effectively done, these simple actions can prevent 30 per cent of deaths in full-term newborns and 5-10 per cent of deaths in pre-term births.⁶

- **Promote early initiation of exclusive breastfeeding for all newborns**

Simply ensuring that all babies are breastfed within an hour of their birth has been associated with reductions in newborn mortality of up to 44 per cent. Exclusive breastfeeding also prevents HIV transmission to infants and induces uterine contractions which reduce excess maternal bleeding.

- **Provide antiseptic eye treatment to all newborns**

All newborns should receive antimicrobial eye drops or ointment as soon as possible after birth, preferably within one hour of being born after the infant is first breastfed. This treatment protects the newborn from serious eye infection which can result in blindness or even death.

- **Provide vitamin K to all newborns**

All newborns should be given 1mg of vitamin K intramuscularly in the second hour after birth (during the first hour the infant should be in skin-to-skin contact with the mother and breastfeeding should be initiated).

- **Monitor newborn for danger signs**

All newborns should be examined for indications of life-threatening conditions immediately after birth and throughout the neonatal period. Health staff must also be able to teach families how to identify danger signs of newborn complications and to seek care as soon as these signs are detected. Danger signs include a sudden change

in feeding, when the newborn stops feeding well, reduced activity or lack of movement, difficulty breathing, chest in-drawing, fever or low body temperature, fits or convulsions and yellow palms or soles of feet.

VI. PRE-TERM AND LOW BIRTH-WEIGHT NEWBORNS

Increasing coverage of interventions for small and ill newborn babies could reduce neonatal mortality by 30 per cent. These include:

- **Provide kangaroo mother care to clinically stable newborns weighing <2500g for the first week of life**

Kangaroo mother care is the early, prolonged, and continuous skin-to-skin contact between the mother (or a substitute) and her baby, with support for positioning, feeding, and prevention and management of infections and breathing difficulties. Low birth-weight neonates weighing >1200g who do not have complications and are clinically stable should be put in skin-to-skin contact with the mother soon after birth and after drying them thoroughly to prevent hypothermia. Kangaroo mother care for preterm infants has been shown to reduce risk of neonatal death by 40 per cent, and to result in better outcomes than incubator care.⁸



Cup feeding with expressed breast milk is advised when natural breastfeeding is not possible.
Tanzania / Save the Children / Colin Crowley / December 2010

- **Ensure clearly defined protocol for referral of newborns weighing <2500g are established and followed**

Clinically stable newborns weighing between 1,500 to 1,750g who are not feeding well should be given expressed breast milk using an alternative feeding method and discharged when over 1,750g, as long as s/he is breathing without difficulty and able to maintain body temperature, and the mother is confident about her ability to provide care. Very low birth-weight newborns between 1,000 and 1,499g should be admitted to an intensive care unit and only discharged when over 1,750g with no complications. Prognosis and cost in line with [UNHCR's Principles and Guidance for Referral Health Care \(2009\)](#) should determine intensive care unit (ICU) stay in all other instances.

- **Identify and manage any cases of neonatal jaundice**

Many infants, particularly pre-term or low birth-weight babies, may have jaundice during the first week of life. In most cases, the level of bilirubin that causes the jaundice is not harmful and does not require treatment. However, any jaundice visible in the first 24 hours of life should be assumed to be serious. All newborns should be routinely monitored for the development of jaundice, and serum bilirubin should be measured in all babies where jaundice appears in the first 24 hours of life or palms and soles are yellow at any point.

VII. POSTNATAL CARE FOR ALL NEWBORNS

Early postnatal care is particularly important for reducing the large percentage of newborn mortality that occurs on the first day of life. If a birth takes place in a health facility, mothers and newborns should receive postnatal care in the facility for at least 24 hours after birth. If a birth takes place at home or in the community, the first postnatal visit to the facility should be as early as possible within 24 hours of birth (followed by additional visits on day 3 and in week 2). Home visits by healthcare workers are also recommended in the first week to identify any newborns in need of additional care because of difficulty feeding, convulsions, fast breathing, severe chest in-drawing, fever, low body temperature, lack of movement or jaundice.

- **Provide all infants with oral polio and hepatitis B vaccines as soon as possible after birth**

Oral polio vaccine, including a birth dose (known as a zero dose because it does not count towards the primary series) is recommended in all polio-endemic countries and in countries at high risk for importation and subsequent spread. More precise guidance can be found in the [WHO Position paper on polio vaccines and polio immunization \(January 2014\)](#). All infants should also receive their first dose of hepatitis B vaccine according to national protocols, preferably within the first 24 hours. These birth doses also provide an opportunity to enrol infants in routine expanded programmes on immunization (EPI) and to counsel caregivers on the importance of completing the childhood vaccination schedule.

- **Promote exclusive breastfeeding**

Initiation of breastfeeding within 1 hour of birth, exclusive breastfeeding of infants until 6 months of age and continuation of breastfeeding until 2 years of age are strongly recommended for infection prevention and proper nourishment of newborns, infants and young children. All infants should be breastfed on demand, both day and night (eight or more times in 24 hours), for as long as the infant wants. Mothers should not force the baby to feed, interrupt feeding before the baby is done, or give the infant any other food or drink for

the first six months of life. Intensive follow-up is recommended for newborns who are unable to breastfeed, including counselling and support for caretakers on alternative feeding methods (i.e., cup or spoon feeding) and regular growth monitoring.

- **Provide antibiotic treatment to all newborns with signs of serious bacterial infection**

Rapid detection and treatment of suspected newborn infections, such as pneumonia and septicemia, is critical. Danger signs of serious bacterial infection include severe jaundice and abdominal distention, but may include others such as a bulging fontanelle, umbilical redness extending to the peri-umbilical skin and painful swollen joints. The recommended regimen for severe newborn infections is a 10-14 day course of injectable antibiotics administered in a health

facility. Correct provision of antibiotic treatment for newborns with signs of serious bacterial infection can reduce newborn deaths due to pneumonia by 75 per cent and sepsis by 65 per cent.

- **Provide antiretroviral prophylaxis to all infants born to HIV infected women receiving ART**

All HIV-exposed infants should receive postpartum antiretroviral drugs to reduce perinatal transmission of HIV, in accordance with national protocols. The current [Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection 2013](#) recommend that HIV-exposed infants should get daily nevirapine (NVP) or zidovudine (AZT) from birth through age 4–6 weeks regardless of infant feeding method.



Lebanon / UNHCR / S. Hoibak

VIII. ENSURE ADEQUATE STAFFING & CAPACITY BUILDING

Approximately half of the burden of neonatal mortality can be reduced through scale-up of interventions delivered to the mother and half from interventions delivered to the newborn. UNHCR and its partners must ensure that adequate staffing is available at all camp health facilities to provide necessary care to the mother and newborn 24 hours per day, 7 days per week.

This means that at least one skilled birth attendant should be available at health facilities, with additional doctors, nurse-midwives or equivalent cadres available on call at all times. In addition, identifying cadres and individual staff with responsibilities for delivering low-cost high-impact interventions that save newborn lives during ANC, labour and delivery, and the post-natal period, and ensuring that these responsibilities are captured in job descriptions is critical.

All health workers assigned to or rotated through the maternity and paediatric wards should be trained on essential newborn care, and provided with guidelines or job aids to ensure they have the knowledge and confidence to provide the low-cost high impact interventions that save newborn lives. Depending on the level of training and experience of available staff, as well as the frequency of staff turnover or re-assignment, additional training and supportive supervision may be required.

In some settings, additional efforts may be needed to help staff overcome preconceived notions that neonatal intensive care is needed for all newborns with difficulty in breathing or maintaining warmth. These misconceptions must be dispelled through advocacy, training, education and behaviour change communications that convey the effectiveness of low-technology interventions such as stimulation for non-breathing newborns and kangaroo mother care for low birth-weight babies. As “incubator care” is associated with many more complications than kangaroo mother care, and only infants who are still too ill or too small to maintain their body temperature, breathe or feed actively may need to be referred, improving the capacity of staff at primary healthcare facilities to identify complications and follow protocols for diagnosis and management of complications is essential.

To ensure newborn health programming includes adequate staffing plans and capacity building efforts, UNHCR and partners should consult with current health facility staff to understand health worker knowledge, attitudes, current practices and challenges faced related to newborn health services. This type of analysis can help to tailor training plans to fit programme needs, and can identify structural or programmatic bottlenecks that may limit staff capacity to provide quality services when they are needed.

IX. ENSURE MINIMUM PACKAGE OF SUPPLIES AND EQUIPMENT IS AVAILABLE

The UN Commission on Life-Saving Commodities has identified and endorsed an initial list of 13 commodities that, if more widely accessed and properly used, could save the lives of more than 6 million women and children. These include the following commodities for newborn health:

<i>Commodity</i>	<i>Purpose</i>
Injectable antibiotics (e.g., ampicillin, benzylpenicillin, procaine benzylpenicillin, gentamicin, and ceftriaxone)	Treatment of newborn sepsis and other infections (including pneumonia, maternal sepsis, syphilis, etc.)
Antenatal corticosteroids (e.g., dexamethasone 6mg)	Treatment of respiratory distress syndrome for pre-term babies
Chlorhexidine digluconate 7.1%	Newborn cord care
Resuscitation equipment (newborn-sized bag and mask, suction device and resuscitation training mannequin)	Treatment of newborn asphyxia

These four products are highly effective and affordable, however cross-cutting challenges such as regulatory hurdles, including omission from or limited inclusion on national essential medicines and devices lists, low provider and user awareness, and inadequate training on the administration of these commodities contribute to limited and at times ineffective use. UNHCR can improve newborn health programming by ensuring that these essential supplies and equipment are available in or near the delivery room of every health facility, systems are in place to ensure

proper management of these commodities, and health workers have skills and confidence to ensure proper use.

Additional drugs supplies and equipment needed to provide the low-cost, high-impact interventions described above (such as iron and folic acid supplementation, tetanus toxoid vaccines, IPTp-SP, ARVs, tocolytics to delay pre-term birth, maternal and foetal stethoscopes, and intravenous (IV) sets) can be found on the [UNHCR list of essential medicines and medical supplies \(2013\)](#).

X. ENGAGE COMMUNITY MEMBERS IN IMPROVING ACCESS AND USE OF SERVICES

Sustained improvements in newborn health programming will only be achieved if community members are engaged in improving coverage of services. Community mobilization and antenatal and postnatal home visits by community health workers can complement facility-based care by raising awareness of danger signs for obstetric and newborn complications, promoting family contact with the health system at crucial times, and monitoring the impact of interventions.



Uganda / UNHCR / F. Noy / November 2012

Identifying and training community health workers to conduct antenatal and postnatal home visits should be an integral part of any effort to improve newborn health programming. Ensuring these frontline health workers have adequate training to educate families on the danger signs of obstetric and newborn complications, encourage and facilitate timely care seeking wherever possible, and discourage harmful traditional practices that increase the risk of poor outcomes is essential in any setting.

In addition, in acute emergency settings where a majority of births may take place at home without a skilled attendant, and care-seeking rates are low, preventive interventions such as early initiation of breastfeeding, skin-to-skin contact, and delayed bathing to prevent hypothermia, and clean care of the umbilical cord care may also be promoted at the community level. However, facility based health services should be established and institutional deliveries promoted as early as possible in an emergency.

KEY RESOURCES - COMMUNITY ENGAGEMENT

[UNHCR Community-Based Approach Manual \(2006\)](#)

[UNHCR Tool for Participatory Assessments in Operations \(2006\)](#)

UNHCR Community-Based Health Workforce Guidelines (forthcoming)

4.3 HOW TO IMPROVE MONITORING OF NEWBORN HEALTH PROGRAMMING

Improved data on where newborn babies are dying and understanding of delays in receipt of care are a priority for the design of context-specific community and health system strategies. To improve newborn health programming in refugee settings, UNHCR and its partners must make better use of existing data, improve data collected and connect this data to planning and implementation.

4.3.1 USE UNHCR HEALTH INFORMATION SYSTEM (HIS) DATA TO MONITOR SERVICE COVERAGE AND IMPACT

The UNHCR HIS can be used to monitor mortality rates and coverage of essential newborn health services.

OPERATIONAL GUIDELINES ON IMPROVING NEWBORN HEALTH IN REFUGEE OPERATIONS

Key indicators of newborn health service coverage that can be tracked using HIS reports include:

<i>Domain</i>	<i>Indicator</i>	<i>Definition</i>
<i>ANC</i>		
Antenatal care (HIS section 9.1)	Proportion of first time ANC visits made during 1 st trimester	# of first time ANC visits made during 1 st trimester of pregnancy/total # of first time ANC visits x100
	Coverage of syphilis screening during pregnancy	# pregnant women screened for syphilis during pregnancy/total # of live births x100
	Coverage of antenatal tetanus immunization	# of pregnant women who received at least 2 doses of tetanus toxoid vaccine during pregnancy/total # of live births x100
	Coverage of intermittent preventative treatment for malaria in pregnancy	# of pregnant women who received at least 2 doses of SP during pregnancy/total # of live births x100
<i>Delivery care</i>		
Delivery care (HIS section 9.2)	Proportion of births attended by a skilled health worker	# of deliveries attended by doctors, midwives or nurses with midwifery skills/total # of deliveries x100
	Proportion of deliveries at a health facility with EmOC services	# of deliveries in a camp health centre or government hospital with EmOC services/total # of deliveries x100
<i>Postnatal care</i>		
Vitamin A distribution (HIS section 7.3)	Coverage of postnatal vitamin A distribution	# of women receiving one dose of vitamin A prophylaxis within 6 weeks of delivery/total # of live births x100
Postnatal care (HIS section 9.3)	Coverage of complete PNC	# of women attending PNC 3 times within 6 weeks of delivery/total # of live births x100
<i>Prevention of mother-to-child transmission of HIV</i>		
PMTCT antenatal (HIS section 10.3)	Pre-test counselling coverage (PMTCT coverage rate)	# of first time ANC visits with pre-test counselling provided/total # of first time ANC visits
PMTCT labour and delivery (HIS section 10.4)	Proportion of mothers who swallowed ARV during labour/delivery	# of HIV positive mothers who swallowed ARV during labour or delivery/total # of HIV positive mothers delivering x100
	Proportion of newborns who were given ARV <72 hours of birth	# of babies of HIV positive mothers who swallowed ARV within 72 hours of birth/total # of babies born to HIV positive mothers x100
PMTCT postnatal (HIS section 10.5)	Proportion of HIV positive women who received at least one home-based care visit	# of HIV positive mothers who received at least one home-based counselling visit after delivery/total # of HIV positive mothers delivering x100
	Proportion of infants who are started on cotrimoxazole	# of HIV positive mothers who were started on cotrimoxazole prophylaxis/total # of HIV positive mothers delivering x100

Because HIS reports are generated based on data recorded in health facility registers, it is critical that every effort is made to ensure these registers are accurate and complete. In some settings, there may be systemic challenges that contribute to information gaps. In many cases, underreporting is not intentional, but there is not a clear system for reporting deaths that occur at home or the community, or records kept by community leaders are not shared with official vital registration entities. In settings with high levels of population fluctuation, multiple health service providers, or heavy reliance on referral of patients to national health facilities, obtaining a comprehensive and accurate assessment of population needs from routine data sources may be even more challenging.

If all births and deaths that occur in the community and facilities are captured in central registers used to generate HIS reports, these reports can be a valuable tool for monitoring the impact of newborn health programming. Specific indicators that can be tracked include:

<i>Domain</i>	<i>Indicator</i>	<i>Definition</i>	<i>Notes</i>
Mortality by cause (HIS section 2.2)	Neonatal mortality rate (NNMR)	# of deaths of newborns <28 days of life /total # of live births x1000	Intended to capture all deaths occurring in community or facility; accuracy depends on completeness and accuracy of facility registry data
Delivery care (HIS section 9.2)	Stillbirth rate	# of stillbirths/total # of live births and stillbirths x1000	Stillbirth defined as a foetal death after 22 weeks gestation
	Proportion of low birth weight newborns	# of live births weighing <2500g/ total # of live births x100	

4.3.2 USE FACILITY REGISTERS AND OTHER ROUTINE DATA SOURCES TO ASSESS NEEDS AND MONITOR PROGRAM QUALITY

Closer examination of facility registers can provide additional insights into the mortality burden in a population by identifying misclassifications of neonatal deaths and stillbirths and contributing to improved cause of death attribution.

For example, delivery registers can also be reviewed to identify the proportion of neonatal deaths occurring in low birth weight babies (the HIS only reports the proportion of live births that have low birth weight).

<i>Indicator</i>	<i>Definition</i>
Proportion of neonatal deaths with low birth weight	# of deaths of newborns <28 days of life weighing <2500g at birth/total # of deaths of newborns <28 days of life

Monitoring this indicator can help to track progress in prevention and treatment of pre-term birth complications and monitor progress of efforts to improve care for low birth-weight babies such as kangaroo mother care.

In addition, delivery registers can be reviewed to estimate the proportion of babies who are successfully resuscitated.

<i>Indicator</i>	<i>Definition</i>
Proportion of neonates with first APGAR score below 3 and subsequent APGAR score \geq 7	# of deliveries with first APGAR score < 3 and subsequent score >7/# of deliveries with first APGAR score < 3

Monitoring this indicator can help to track improvements in the capacity of health workers to perform neonatal resuscitation, including stimulation and bag-and-mask ventilation.

[Standardized Expanded Nutrition Surveys](#) may also provide additional insights into the coverage of essential health services for newborn survival and health, such as use of insecticide treated mosquito nets, coverage of iron-folic acid supplementation and early and exclusive breastfeeding practices.

4.3.3 USE BALANCED SCORECARD TO MONITOR FACILITY CAPACITY FOR SERVICE PROVISION

In addition to intervention coverage, UNHCR and its partners should regularly assess facility readiness to provide newborn health services. Although the [UNHCR Balanced Scorecard](#) is designed to assess the overall quality of care provided in primary healthcare facilities, not newborn-specific care, it contains a number of indicators specifically related to antenatal and delivery care, as well as more general measures of capacity for service provision, provider and patient satisfaction that may also be informative for improving newborn health programming.

Balanced Scorecard indicators directly related to newborn health programming include:



<i>Section</i>	<i>Domain</i>	<i>Method</i>	<i>Indicator</i>
1.Capacity for service provision <i>inputs</i>	Supplies ANC (Scorecard section 1.4)	Health facility observation	1.4.1 Health facility has 4 essential supplies to support antenatal care available on day of assessment (dry heat sterilizer, blood pressure machine, syphilis testing kit, albustix for testing for protein)
	Medicines ANC (Scorecard section 1.6)	Health facility observation	1.6.1 Health facility has 3 essential ANC medicines available on day of survey (iron, folic acid, iptP)
2.Capacity for service provision <i>process</i>	Training in maternal/ neonatal care (Scorecard section 2.6)	Health worker interview	2.6.1 Interviewed health worker reported receiving in-service or pre-service training in maternal and neonatal health (e.g. EmONC training) in last 12 months

In addition, poor performance on other indicators may point to broader problems that could negatively impact capacity to provide newborn care services at the facility. For example, lack of items for infection control, gaps in cold chain or supply of essential medicines and supplies (including antibiotics), and non-functioning referral systems may limit capacity to provide clean and safe deliveries, essential vaccinations, and ensure that mothers and children experiencing complications have timely access to quality care.

4.3.4 ADDITIONAL ACTIVITIES TO GUIDE IMPROVEMENT OF NEWBORN HEALTH PROGRAMMING

Additional monitoring, evaluation or research activities may be helpful to understand the context-specific factors contributing to neonatal mortality, such as socio-cultural barriers to care seeking or health system bottlenecks limiting health worker capacity to provide care. One such activity that greatly informed the development of these guidelines is conducting neonatal death reviews. Facility-based mortality event

reviews and community-based verbal autopsies are tested methods of finding out the medical causes of death and ascertaining the personal, family and community factors that may have contributed to the death. The purpose of these exercises is to raise awareness among health professionals, administrators, programme managers, and community members about modifiable factors in the facilities and the community, and to stimulate actions to address these factors to prevent further newborn deaths.

The low cost high impact interventions proposed by these guidelines should be implemented in all situations. No prior assessment or verbal autopsies are required to implement them. The below additional activities are recommended only in locations where sufficient resources exist to carry them out.

- **Mortality event reviews** are in-depth investigations of the causes and circumstances surrounding maternal and perinatal deaths occurring at health facilities or in the community, which tends to focus on avoidable or preventable factors that may have contributed to the death.
- **Verbal autopsies** use information from individuals in the community who looked after the deceased at or near the time of death to determine the cause of death.

These two methods can be used independently, or in combination, to develop a comprehensive understanding of the circumstances leading up to and surrounding each newborn death. Whether event reviews are conducted by clinicians involved in the case or an independent review team, these exercises should be conducted by physicians trained on mortality event review tools and procedures, using standardized tools and processes adapted to the context. If inquiries are carried out in a confidential, non-threatening manner, and findings discussed with the purpose of improving health service delivery rather than assigning blame, then information gathered through mortality event reviews and verbal autopsies can guide efforts to improve access to and quality of care.

If event reviews reveal barriers in access to care, strategies can be introduced to assist community members in reaching care. Likewise, if inquiries identify bottlenecks in service provision or gaps in quality of services at the facility, efforts can be made to increase workforce allocations, or upgrade skills of certain cadres to facilitate task sharing. Gaps in provision of certain services may also prompt development of targeted trainings, guidelines or job aids, or intensification of supportive supervision and mentorship in specific focus areas. Improvement of newborn health programming should be a continuous process, with event reviews conducted where feasible to identify factors contributing to each death, and feedback loops established to ensure that findings of these reviews are used to inform service planning at the community and facility level.



Ethiopia / Save the Children / E. Sigurdardottir / January 2013

5. Annexes

KEY RESOURCES

GENERAL RESOURCES

- [Every Newborn Action Plan \(2014\)](#)
- [Commission on Information and Accountability for Women's and Children's Health: Recommendations \(2011\)](#)
- [Partnership for Maternal, Newborn and Child Health \(2005\)](#)
- [United Nations Commission on Life-Saving Commodities for Women and Children \(2012\)](#)
- [Child Survival Call to Action: A Promise Renewed \(2012\)](#)
- [Global Strategy for Public Health - HIV and Reproductive Health - Food Security and Nutrition - Water, Sanitation and Hygiene \(WASH\) 2014 - 2018](#)
- [Lancet Every Newborn Series \(2014\)](#)
- [Inter-agency Field Manual on Reproductive Health in Humanitarian Settings \(2010\)](#)

HEALTH SERVICE GUIDELINES

- [UNHCR Strategic Plan for Anaemia Prevention, Control and Reduction \(2008\)](#)
- [UNHCR Policy Statement of HIV Testing and Counselling in Health Facilities for Refugees \(2014\)](#)
- [WHO Managing Complications in Pregnancy and Childbirth \(2003\)](#)
- [UNHCR Principles and Guidance for Referral Health Care \(2009\)](#)
- [UNICEF Toolkit for Setting Up Special Care Newborn Units, Stabilization Units and Newborn Care Corners \(2011\)](#)
- [UNHCR Malaria Prevention Quick Checklist \(2013\)](#)

BREASTFEEDING GUIDELINES

- [WHO Guidelines on improving maternal, newborn, infant and young child health and nutrition \(2013\)](#)
- [WHO Guidelines on optimal feeding of low birth-weight infants in low and middle income countries \(2011\)](#)
- [WHO Framework for Priority Action: HIV and Infant Feeding \(2012\)](#)

- UNHCR Standard Operating Procedures for the Handling of Breast Milk Substitutes in Refugee Situations (*forthcoming*)

COMMUNITY ENGAGEMENT

- [UNHCR Community-Based Approach Manual \(2008\)](#)
- [UNHCR Tool for Participatory Assessments in Operations \(2006\)](#)
- UNHCR Community-Based Health Workforce Guidelines (*forthcoming*)

ESSENTIAL MEDICINES AND SUPPLIES

- [UNHCR Essential Medicine and Medical Supplies Policy and Guidance \(2013\)](#)
- [UNHCR List of Essential Medicines and Supplies \(intranet\) \(2013\)](#) - For UNHCR staff and available to others on request from HQPHN@unhcr.org.

ASSESSMENT AND MONITORING TOOLS

- [UNHCR Health Information System](#)
- [UNHCR Balanced Scorecard](#)
- [UNHCR Maternal Death Review Tool](#)
- [WHO Verbal Autopsy Standards and Tools](#)

ADDITIONAL RESOURCES

GENERAL RESOURCES

- [Newborn Health Services Rapid Health Facility Assessment \(2012\)](#)
- [Priority life-saving medicines for women and children \(2012\)](#)
- [Global Review of the Key Interventions Related to Reproductive, Maternal, Newborn and Child Health \(2011\)](#)
- [Packages of Interventions for Family Planning, Safe Abortion Care, Maternal, Newborn and Child Health \(2010\)](#)
- [Working with Individuals, Families and Communities to Improve Maternal and Newborn Health \(2010\)](#)
- [WHO Essential Newborn Care Course \(2010\)](#)
- [Demand Generation I-Kit for Underutilized Commodities in RMNCH \(2014\)](#)

- [Scaling Up Lifesaving Commodities for Women, Children and Newborns: An Advocacy Toolkit \(2013\)](#)

WHO GUIDELINES

- [WHO Recommendations on Postnatal Care of the Mother and Newborn \(2013\)](#)
- [WHO Guidelines on Basic Newborn Resuscitation \(2012\)](#)
- [WHO Brief on the Implementation of Intermittent Preventative Treatment of Malaria in Pregnancy \(2013\)](#)
- [WHO Recommendation on Optimal Timing of Cord Clamping for the Prevention of Iron Deficiency Anaemia in Infants \(2013\)](#)
- [WHO Programmatic Update on Use of Antiretroviral Drugs for Treating Pregnant Women and Preventing HIV Infection in Infants \(2012\)](#)
- [WHO Guidelines on Caring for Newborns and Children in the Community – Caring for Newborns at Home \(2012\)](#)
- [WHO Guidelines on Optimal Feeding of Low Birth-Weight Infants in Low- and Middle- Income Countries \(2011\)](#)
- [WHO Recommendations for Management of Common Childhood Conditions: Evidence for Technical Update of Pocket Book Recommendations: Newborn Conditions, Dysentery, Pneumonia, Oxygen Use and Delivery, Common Causes of Fever, Severe Acute Malnutrition and Supportive Care \(2011\)](#)
- [WHO Guidelines on HIV and Infant Feeding: an updated framework for priority action \(2010\)](#)
- [WHO Position paper on polio vaccines and polio immunization \(January 2014\).](#)
- [WHO and UNICEF Home Visits for the Newborn Child: A Strategy to Improve Survival \(2009\)](#)
- [WHO IMCI Chart Booklet \(2008\)](#)
- [WHO Standards for Maternal and Newborn Health \(2007\)](#)
- [WHO Guidelines on Managing Complications in Pregnancy and Childbirth \(2007\)](#)
- [WHO Guidelines on Kangaroo Mother Care \(2003\)](#)

6. References Cited

1. Liu L, Johnson H, Cousens S, et al. Global, regional, and national causes of child mortality: an updated systematic analysis for 2010 with time trends since 2000. *Lancet* 2012; 379(9832): 2151 - 61.
2. Save the Children. Surviving the First Day: State of the World's Mothers 2013: Save the Children, 2013. Available at: <http://www.refworld.org/docid/51a5ad654.html>
3. Morof DF, Kerber K, Tomczyk B, et al. Neonatal survival in complex humanitarian emergencies: setting an evidence-based research agenda. *Confl Health* 2014; 8(1): 8.
4. March of Dimes, Partnership for Maternal N, and Child Health, Save the Children, World Health Organization. Born Too Soon: The Global Action Report on Preterm Birth. Geneva: World Health Organization, 2012. Available at: http://www.who.int/maternal_child_adolescent/documents/born_too_soon/en/
5. Newman L, Kamb M, Hawkes S, et al. Global estimates of syphilis in pregnancy and associated adverse outcomes: analysis of multinational antenatal surveillance data. *PLoS Med* 2013; 10(2): e1001396.
6. Bhutta ZA, Das JK, Bahl R, et al. Can available interventions end preventable deaths in mothers, newborn babies, and stillbirths, and at what cost? *The Lancet* 2014.
7. McDonald SJ, Middleton P, Dowswell T, Morris PS. Effect of timing of umbilical cord clamping of term infants on maternal and neonatal outcomes. *Cochrane Database of Systematic Reviews* 2013.
8. Bergh A-M, Kerber K, Abwao S, et al. Implementing facility-based kangaroo mother care services: lessons from a multi-country study in Africa. *BMC Health Services Research* 2014; 14(1): 293.



