

UNIT 5: PREVENT EXCESS MATERNAL AND NEWBORN MORTALITY AND MORBIDITY



Two-thirds of preventable maternal deaths and 45% of newborn deaths take place in countries affected by recent conflicts, natural disasters, or both.⁹¹ Stressful living conditions and limited access to skilled health providers and health facilities exacerbates the vulnerability of crisis-affected women and increases the risk of morbidity and mortality due to pregnancy-related complications.

There are several useful resources that provide step-by-step approaches to integrate emergency obstetric and newborn care (EmONC) into humanitarian programming, including the *Inter-Agency Field Manual on Reproductive Health in Humanitarian Settings*, *Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Doctors*, and the Inter-Agency Working Group (IAWG) on Reproductive Health (RH) in Crises Training Partnership Initiative's series of clinical outreach refresher trainings.⁹² Useful resources for providing and enhancing national strategies and programs for newborn care include *Newborn Health in Humanitarian Settings: Field Guide and Operational Guidelines on Improving Newborn Health in Refugee Operations*.⁹³

At the end of the unit, learners will be able to:

- ▶ explain why preventing maternal and newborn morbidity and mortality is a priority;
- ▶ explain what clean and safe delivery, essential newborn care, and basic and comprehensive EmONC services must be made available and accessible in crises;
- ▶ define the requirements for an effective referral system;
- ▶ list ways to ensure post-abortion care is available and what to do if a woman presents for care; and
- ▶ explain how to make supplies and commodities available for clean delivery and immediate newborn care if access to a health facility is not possible.

91 Sarah Zeid, Flavia Bustreo, Maha Taysir Barakat, Peter Maurer, and Kate Gilmore, "For Every Woman, Every Child, Everywhere: A Universal Agenda for the Health of Women, Children, and Adolescents," *The Lancet* May 16, 2015, [https://doi.org/10.1016/S0140-6736\(15\)60766-8](https://doi.org/10.1016/S0140-6736(15)60766-8).

92 *Inter-Agency Field Manual on Reproductive Health in Humanitarian Settings. Assisted Vaginal Delivery via Vacuum Extraction — Refresher Training; Uterine Evacuation in Crisis Settings Using MVA — Refresher Training; and BEmONC in Humanitarian Settings: Select Signal Functions*, IAWG, accessed April 8, 2019, <http://iawg.net/tpi-home/resources>.
Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Doctors. (WHO, UNFPA, and UNICEF, 2017), <http://apps.who.int/iris/bitstream/10665/255760/1/9789241565493-eng.pdf?ua=1>.

93 *Newborn Health in Humanitarian Settings: Field Guide* (Save the Children, WHO, and UNICEF, January 1, 2018). <http://iawg.net/resource/newborn-health-humanitarian-settings>; *Operational Guidelines on Improving Newborn Health in Refugee Operations* (UNHCR, 2015), <http://www.unhcr.org/protection/health/54bd0dc49/operational-guidelines-improving-newborn-health-refugee-operations.html>.

MISP for SRH objectives and activities

PREVENT EXCESS MATERNAL AND NEWBORN MORBIDITY AND MORTALITY.

To prevent excess maternal and newborn morbidity and mortality from the onset of an emergency, the SRH Coordinator, program managers, and service providers must work with the health sector/cluster to:

- ▶ ensure availability and accessibility of clean and safe delivery, essential newborn care, and lifesaving EmONC services;
- ▶ establish a 24 hours per day, 7 days per week referral system to facilitate transport and communication from the community to the health center and hospital;
- ▶ ensure the availability of post-abortion care in health centers and hospitals; and
- ▶ ensure availability of supplies and commodities for clean delivery and immediate newborn care where access to a health facility is not possible or is unreliable.

Why is preventing maternal and newborn morbidity and mortality a priority?

In any crisis-affected population, approximately 4% of the total population will be pregnant at any given time. Of these pregnant women, approximately 15% will experience an obstetric complication, such as obstructed or prolonged labor, pre-eclampsia/eclampsia, infection, or severe bleeding. The World Health Organization (WHO) estimates that 9% to 15% of newborns will require lifesaving emergency care.⁹⁴ Most maternal and newborn deaths occur around the time of labor, delivery, and the immediate postpartum period. The first day of life is the highest risk for newborns. In humanitarian situations, the breakdown of health systems can cause increases in maternal and newborn deaths due to untreated complications that can be prevented in stable situations (e.g., obstructed labor). This objective addresses the main causes of maternal and newborn mortality and morbidity and the lifesaving interventions that must be available in any humanitarian crisis.

What causes women to die from pregnancy complications?

The common causes of maternal mortality are hemorrhage (antepartum and postpartum), postpartum sepsis, pre-eclampsia or eclampsia, complications of abortion, ectopic pregnancy, and prolonged or obstructed labor. Delays in accessing lifesaving care, which can be caused by many factors, can cost women their lives. The delays that contribute to the likelihood of maternal death can be grouped using a simple model called the Three Delays:

- ▶ **Delay 1:** Delay in the decision to seek care;
- ▶ **Delay 2:** Delay in reaching care (inability to get transport, poor road conditions, insecurity, check points, curfews, etc.); and

⁹⁴ *Inter-Agency Field Manual on Reproductive Health in Humanitarian Settings.*

- ▶ **Delay 3:** Delay in receiving quality care (absence or lack of qualified staff, lack of equipment/supplies, high costs of treatment, need for down payment prior to receiving care, etc.).

The emergency team needs to make sure that basic and comprehensive EmONC services are in place and that there is an immediate focus on preventing delays in accessing quality services for women during labor and childbirth and in the immediate postpartum period.

What are some ways to manage intrapartum complications?

The WHO estimates that in any given population, 5% to 15% of all deliveries may require a caesarean section. If the percentage is high, it may mean that there is use of nonindicated caesarean sections. If it is low, the provision of EmONC may not be adequate for the population. Women with obstetric emergencies and those requiring blood transfusion and surgery will need to be referred to a hospital that is capable of providing CEmONC.

Where Type III female genital cutting is common, SRH Coordinators and health program managers should ensure that SRH service providers are trained in deinfibulation as needed for childbirth or that a referral system is established for trained providers. Providers should ensure that women and girls have information on all aspects of the procedure and obtain consent.

Estimates of C-sections needed based on a population of 150,000 with a crude birth rate (CBR) of 4%

expected number of live births in a 3-month period	$150,000 \times 0.04 \text{ (CBR)} \times .25$	1500 Births
number of deliveries that require a c-section in a 3-month period	1500×0.05	75 Deliveries

Ensuring Maternal and Newborn Care in Urban and Mobile Settings

Work within the health sector/cluster to identify and support health facilities with medical supplies and human resources to ensure provision of care for normal deliveries, basic and comprehensive EmONC, essential newborn care, and an emergency referral system 24 hours per day, 7 days per week. In circumstances where a “user fee” is a barrier to health care service, advocate with governments where feasible and with United Nations agencies such as the WHO, United Nations High Commissioner for Refugees (UNHCR), United Nations Population Fund (UNFPA), and United Nations Children’s Fund (UNICEF) for free access for maternal and newborn health care services, including EmONC services.

Women and communities also need to be informed about the danger signs of pregnancy and where to seek immediate care. For mobile populations and in urban settings, crisis-affected populations are unlikely to know where women can go for care during childbirth or for complications of childbirth. Ensure that explicit information is available to inform pregnant women and the crisis-affected community when and where women can access care. Further, identify how communities are currently gaining information, if at all, such as through the radio, cell phones, or other means of communications. To inform communities, consider using these methods and the adaptable information, education, and communication templates available at iawg.net/resource/universal-adaptable-information-education-communication-iec-templates-misp.

The MISP for SRH activity:

Ensure availability and accessibility of clean and safe delivery, essential newborn care, and EmONC services

Where should clean and safe deliveries, essential newborn care, and EmONC services be made accessible?

Past experience has shown that at the onset of an emergency there may be an increase in births that will take place outside of the health facility without the assistance of trained health personnel. As birth complications are difficult to predict, the WHO recommends that **all births** are attended by skilled health personnel and take place in health institutions that are equipped and staffed to manage complications.

What needs to be in place within the different health levels to prevent excess maternal and newborn morbidity and mortality?

Health providers should promote the skilled attendance of all births in a health facility to prevent maternal and newborn morbidity and mortality, where feasible. They should also ensure that sufficient skilled birth attendants, equipment, and supplies (especially lifesaving medicines) are available and women are informed of the location of health facilities.

At the community level, information should be provided to the community about the availability of safe delivery and EmONC services and the importance of seeking care from health facilities. Clean delivery kits should be given to visibly pregnant women and birth attendants to promote clean home deliveries when access to a health facility is not possible. When distributing clean delivery kits, remind women that it is still important for them to give birth in a health facility, if possible.

Primary health care facilities should provide skilled birth attendants (including midwives) and supplies for vaginal births, essential newborn care, and provision of basic EmONC (BEmONC).

Referral hospitals should provide all the above health facility activities, as well as skilled medical staff and supplies for provision of comprehensive EmONC (CEmONC).

Adolescents

Identify pregnant adolescents in the community and link them to health facilities to encourage facility-based deliveries. Facilitate new adolescent mothers' participation in peer support networks while pregnant and following the delivery.



Signal Functions of Basic and Comprehensive EmONC*

Ensure basic EmONC at all health centers. This means that staff are skilled and have the resources to do the following:

1. Administer parenteral antibiotics for treatment of maternal sepsis.
2. Administer parenteral anticonvulsant drugs (e.g., magnesium sulfate) to manage severe pre-eclampsia and eclampsia.
3. Perform assisted vaginal delivery (e.g., vacuum extraction).
4. Manually remove the placenta.
5. Remove retained products of conception after delivery or an incomplete abortion.
6. Perform basic neonatal resuscitation (e.g., with bag and mask).
7. Administer uterotonic drugs (e.g., parenteral oxytocin or misoprostol tablets) for treatment of postpartum hemorrhage and administer intravenous tranexamic acid in addition to standard care for women with clinically diagnosed postpartum hemorrhage.

Ensure comprehensive EmONC at hospitals. This means that staff are skilled and have the resources to support all interventions 1–7 above, plus:

8. Perform surgery (e.g., caesarean section).
9. Perform safe blood transfusion, observing universal infection prevention precautions.

**Signal functions are key medical interventions that are used to treat the direct obstetric complications that cause the vast majority of maternal deaths around the globe.*

Basic EmONC

Basic emergency obstetric and newborn care (BEmONC) must be provided at the health center level to address the main complications of childbirth, including newborn complications. While skilled attendance at all births in a health facility is ideal because it can help reduce morbidity and mortality associated with pregnancy and childbirth, it may not be feasible at the start of a humanitarian response. However, at a minimum, ensure that BEmONC interventions and capacity to refer to the hospital for comprehensive EmONC are available 24 hours per day, 7 days per week at each health center.

Comprehensive EmONC

Comprehensive emergency obstetric and newborn care (CEmONC) must be provided at referral hospitals to address obstetric complications. Where feasible, support host-country hospitals with skilled staff, infrastructure, and medical commodities, including medicines and surgical equipment, as needed to provide CEmONC. If this is not feasible because of the hospital's location or inability to meet the increased demand, the SRH Coordinator should work with the health sector/cluster and an agency such as the

International Committee of the Red Cross, the International Federation of Red Cross and Red Crescent Societies, Médecins Sans Frontières, or other nongovernmental organizations (NGOs) to provide CEmONC. Services can be made available, for example, by establishing a temporary field or referral hospital close to the crisis-affected population.

Key Danger Signs of Pregnancy

- ▶ Vaginal bleeding
- ▶ Severe abdominal pain
- ▶ Convulsions
- ▶ Severe headache
- ▶ Fever
- ▶ Fast or difficult breathing

What are some lifesaving medicines and supplies needed to address maternal and newborn complications?

Provide midwives and other skilled birth attendants in health centers with materials and medicines to conduct deliveries, provide newborn care, treat complications, and stabilize women prior to transport to the hospital if needed.

Lifesaving medicines and supplies that must be available include:

- ▶ **antibiotics** for prevention and management of maternal infections;
- ▶ **uterotonics** (oxytocin, misoprostol, and tranexamic acid) for prevention and management of postpartum hemorrhage;
- ▶ **anticonvulsants** (magnesium sulfate) for prevention and treatment of severe pre-eclampsia and eclampsia;
- ▶ **newborn resuscitation supplies**, including a bag and mask;
- ▶ **antibiotics** (gentamycin and ampicillin) for treatment of newborn infections; and
- ▶ **antenatal steroids** (dexamethasone) for preterm labor and **antibiotics** (penicillin and erythromycin) for premature pre-labor rupture of membrane, at specialized referral hospitals only. Skilled medical providers at specialized referral hospitals should have the ability to manage obstetric complications, provide neonatal intensive care, accurately estimate gestational age, and administer steroids (dexamethasone for fetal lung maturity).

Newborn care

Essential newborn care is the basic care required for every baby. Approximately two-thirds of infant deaths occur within the first 28 days of life. The majority of these deaths are preventable by initiating essential actions that can be taken by health workers, mothers, or other community members. One major challenge is that approximately 5% to 10% of newborns do not breathe spontaneously at birth and require assistance to breathe. The major reasons for failure to breathe include preterm birth and acute intrapartum events resulting in severe asphyxia.

Newborn Danger Signs

The following danger signs indicate a newborn should be referred to a health facility by family members and community health workers:

- ▶ Not feeding well
- ▶ Fits or convulsions
- ▶ Reduced activity or lack of movement
- ▶ Fast breathing (more than 60 breaths per minute)
- ▶ Severe chest in drawing
- ▶ Temperature above 37.5°C or below 35.5°C
- ▶ Very small size at birth

Formally trained medical staff are able to identify additional danger signs.

What are the essential services for all newborns?

Newborn care is part of the continuum of care for a mother and baby. In humanitarian settings, essential newborn care is provided at the community, health center, and hospital levels and includes the following:

- ▶ **Thermal care:** Drying, warming, skin-to-skin contact, and delayed bathing.
- ▶ **Infection prevention/hygiene:** Clean birth practices, hand washing, and clean cord, skin, and eye care.
- ▶ **Feeding support:** Skin-to-skin contact, support for immediate and exclusive breastfeeding, and not discarding colostrum (i.e., first milk).
- ▶ **Monitoring:** Frequent assessment for danger signs of serious infections and other conditions that require extra care outside of the household or health post.
- ▶ **Postnatal care checks:** Care given at or as close to home as possible in the first week of life. The first 24 hours are the most critical time, and a postnatal visit should be a priority. Every effort should be made to reach newborn babies at home as soon as possible after delivery.

Chlorhexidine for Clean Cord Care at Home

Daily application of 7.1% chlorhexidine digluconate to the umbilical cord stump during the first week of life is recommended for newborns who are born at home in settings with high neonatal mortality. It is a low-cost, acceptable, and feasible intervention shown to reduce newborn morbidity and mortality related to infection and sepsis. Where women have been trained on the application of chlorhexidine for cord care prior to the emergency, chlorhexidine can be procured as an Inter-Agency Emergency Reproductive Health (IARH) Kit complementary commodity (early 2020).

Clean, dry cord care is recommended for newborns born in health facilities and at home in low neonatal mortality settings.

Important to note: The WHO has issued a warning that chlorhexidine 7,1% digluconate aqueous solution or gel (10ml) has caused serious harm when mistakenly applied to the eyes. This has resulted in severe eye injuries, including blindness.⁹⁵



⁹⁵ Information Exchange System, Alert No. 133 Chlorhexidine 7,1% digluconate (CHX) aqueous solution or gel (10ml) Reports of serious eye injury due to errors in administration (World Health Organization, February 2019), https://www.healthynewbornnetwork.org/hnn-content/uploads/alert133_chlorhexidine.pdf.

What newborn care should be provided at the health facility level and the hospital level?

Newborn Care at the Health Facility Level	Newborn Care at the Hospital Level
<p>Address intrapartum complications and ensure labor monitoring using partograph with appropriate action for complications.</p> <p>Be prepared for newborn resuscitation at every birth, including drying, clearing airway as needed, stimulation, and bag and mask ventilation.</p> <p>Provide essential newborn care for every newborn.</p> <p>For preterm and low birth weight /small newborns where babies and mothers are clinically stable, initiate skin-to-skin contact, support immediate breastfeeding, and refer to a hospital as soon as possible.</p> <p>Manage signs of possible serious bacterial infections in newborns, including diagnosing, classifying, providing the first dose of antibiotics, and referring to a hospital as soon as possible.</p>	<p>Ensure space for newborn resuscitation in the labor ward and capacity and supplies to provide bag and mask ventilation.</p> <p>Ensure space for newborn resuscitation in the labor ward and capacity and supplies to provide bag and mask ventilation.</p> <p>Address intrapartum complications and ensure labor monitoring using partograph with appropriate action for complications.</p> <p>Provide newborn resuscitation, including drying, clearing airway as needed, stimulating, and ventilating with bag and mask. Continue to manage newborns with respiratory distress.</p> <p>Provide essential newborn care for every newborn.</p> <p>Establish a kangaroo mother care unit for babies and mothers that are clinically stable, support immediate breastfeeding, and follow WHO guidelines for preterm infants, including management of serious signs of bacterial infections in newborns.</p>

Kangaroo Mother Care for Preterm and Low Birthweight Babies

Kangaroo mother care is one of the most promising ways to save preterm and low birthweight babies in all settings. This form of care, initiated in health facilities, involves teaching health workers and caregivers how to keep newborns warm through continuous, 24-hours-per-day, skin-to-skin contact on the mother or caregiver's chest. Kangaroo mother care may significantly enhance other well-known treatments for prematurity, such as thermal care, breastfeeding support, infection prevention and management, and neonatal resuscitation.



The Reality of Implementing the MISP for SRH in Nepal

Following the earthquake in Nepal in April 2015, UNFPA estimated that 1.4 million women of reproductive age were affected, including 93,000 pregnant women, of which 1,000 to 1,500 were likely to experience complications.⁹⁶ The Minimum Initial Service Package (MISP) for Sexual and Reproductive Health (SRH) was immediately initiated by government, international, and local actors.

In September 2015, a MISP for SRH assessment was conducted by a team from the IAWG on RH in Crises. Regarding the objective on the prevention of maternal and newborn morbidity and mortality, the assessment revealed that facilities visited were providing normal delivery services and BEmONC was available. To increase facility-based deliveries in the Sindhupalchowk district, a temporary hospital was set up for CEmONC with an emergency referral system, and radio and television campaigns were conducted to provide women with information about the services.

However, after the closure of this temporary hospital, CEmONC was not reliably available in Sindhupalchowk. Focus group discussion participants reported bypassing nearby health posts or the district hospital when experiencing complications and going directly to the neighboring district hospital or Kathmandu for quality care. Ongoing barriers to accessing delivery care in the facilities included direct and indirect costs associated with reaching facilities, particularly in faraway districts.

Clean delivery kits were distributed to pregnant women in Sindhupalchowk and there were newborn care services provided in both Kathmandu and Sindhupalchowk districts, with well-established comprehensive care in higher-level hospitals in Kathmandu. Sindhupalchowk reported that barriers to implementing comprehensive newborn care included a lack of or malfunctioning equipment.

⁹⁶ Myers, et al., "Facilitators and Barriers in Implementing the Minimum Initial Services Package."

The MISP for SRH activity:

Establish a 24 hours per day, 7 days per week referral system

When should a referral system for obstetric emergencies be made available?

Because most maternal and perinatal deaths are due to a failure to get skilled help in time for complications of childbirth, it is critical to have a well-coordinated system to identify obstetric complications and ensure their immediate management and/or referral to a health center with BEmONC or a hospital with CEmONC capacity as needed. SRH Coordinators must coordinate with the health sector/cluster and host-country authorities, as well as communities, to ensure a referral system (including means of communication and transport) is established in the first days in a humanitarian setting.

The referral system must support the management of obstetric and newborn complications 24 hours per day, 7 days per week. It should ensure that women, girls, and newborns who require emergency care are referred from the community to a health center where BEmONC is available. Patients with obstetric complications and newborn emergencies that cannot be managed at the health center must be stabilized and transported to the nearest available hospital with CEmONC services.

What are the requirements for an effective and efficient referral system?

To ensure an effective and efficient referral system:

- ▶ Develop policies, procedures, and practices to be followed in health centers and hospitals to ensure efficient referral.⁹⁷
- ▶ Assess the referral facilities to ensure adequate supplies, staffing and infrastructure to provide CEmONC.
- ▶ Determine distances from the affected community to functioning health centers and to the hospital, as well as transport options for referrals—including drivers, sufficient fuel, and cellphones/radio/sat phones—available 24 hours per day, 7 days per week.
- ▶ Post protocols in every health center, specifying when, where, and how to refer patients with obstetric and newborn emergencies to the next level of care.
- ▶ In a camp setting, negotiate with camp security personnel for lifesaving access to the referral hospital in order to allow for transport of emergency patients at night.
- ▶ Inform communities about the danger signs of pregnancy and where to seek emergency care for complications of pregnancy and childbirth:

⁹⁷ Ideally hospitals and health centers should have referral policies and procedures in place prior to a humanitarian crisis to ensure the health system is ready to respond.

- Messages should be shared in multiple formats and languages (e.g., Braille, sign language, pictorial formats) to ensure accessibility and in discussion groups through community-led outreach (with women’s, lesbian, gay, bisexual, transgender, queer, intersex, and asexual [LGBTQIA], and persons with disabilities groups) and other setting-appropriate channels (e.g., midwives, community health workers, community leaders, radio messages, or informational leaflets in women’s latrines).
- ▶ Where 24 hours per day, 7 days per week referral services are impossible to establish, make sure that qualified staff are available at all times at health centers to provide BEmONC. For example, establish a system of communication, such as the use of radios or cell phones, to get medical guidance and support from more qualified personnel. The SRH Coordinator should also work through the health sector/cluster to resolve the problem and ensure that the populations have access to basic and comprehensive EmONC.



Noted Practice: Establishing a Referral System in Cox’s Bazar, Bangladesh

In Cox’s Bazar, Bangladesh, access and transportation to health facilities and referral hospitals were challenging due to the difficult terrain.⁹⁸ In addition to mobilizing ambulances, over 20 Tom Toms (a motorbike with seats) were used to bring pregnant women and others in need to health facilities. The phone number of the Tom Tom coordinator was shared, and the service was available day and night. One Tom Tom per facility was also stationed for any emergency referral.

The MISP for SRH activity:

Ensure the availability of post-abortion care in health centers and hospitals

Post-abortion care is the global strategy to reduce death and suffering from the complications of unsafe and spontaneous abortion (also called a miscarriage) and is a lifesaving intervention. Death and injury from unsafe abortion continues to be a serious public health problem that affects women, girls, families, and entire communities. Globally, unsafe abortion, defined as an abortion performed either by persons lacking the necessary skills or in an environment lacking the minimum medical standards, or both, accounts for nearly 8% of maternal deaths, 97% of which occur in the developing world.⁹⁹ Women and girls in humanitarian settings may be at an increased risk of unintended pregnancy and unsafe abortion.

⁹⁸ Site visit, Women’s Refugee Commission, February 2018.

⁹⁹ “Induced Abortion Worldwide,” Guttmacher Institute, March 2018, <https://www.guttmacher.org/fact-sheet/induced-abortion-worldwide>; and *Inter-Agency Field Manual on Reproductive Health in Humanitarian Settings*, p. 48.

Most countries allow abortion to be performed for one or more of the following reasons, including when the pregnancy:

- ▶ endangers the woman's life;
- ▶ threatens the woman's physical and/or mental health;
- ▶ is the result of rape or incest; or
- ▶ involves a fetus with a severe impairment.

All countries allow for legal access to emergency post-abortion care, regardless of the legal status of access to abortion. Women and girls are also at risk of spontaneous abortion, and some will require timely and appropriate care.

What should be done if a woman presents for post-abortion care?

Typically, women presenting for post-abortion care are ambulatory and have symptoms that may include vaginal bleeding, abdominal pain, fever, or chills.¹⁰⁰ Women who have suffered more severe complications may present with shock, hemorrhage, sepsis, and intra-abdominal injury. Severe complications are more likely in settings where access to safe and legal abortion care is limited.

If a woman presents for post-abortion care, a skilled health provider should do the following:

- ▶ **Conduct a rapid initial assessment.** If a woman shows signs and symptoms of shock or has heavy vaginal bleeding, she needs immediate stabilization.
- ▶ **Once the initial assessment and stabilization are underway, conduct a more complete clinical assessment to determine the cause and begin treatment.** This includes a history and directed physical exam with concurrent urgent treatment for definitive management of underlying causes. Shock in post-abortion care clients is usually either hemorrhagic or septic:
 - *Hemorrhagic shock* is the result of severe blood loss, which may be caused by an incomplete abortion, uterine atony, or vaginal, cervical, uterine, or intra-abdominal injury.
 - *Septic shock* is the end result of infection, which may come from incomplete abortion, endometritis, or intra-abdominal injury.
- ▶ **Provide immediate uterine evacuation, if treatment requires.** In the first trimester this is typically done through vacuum aspiration or the use of misoprostol. If the woman requires treatment beyond the capability of the facility where she is seen, stabilize her condition before transferring her to a higher-level service.
- ▶ **Provide or refer the patient for tetanus prophylaxis.** Women who have had unsafe abortions with nonsterile instruments are at risk of tetanus, particularly in communities where tetanus after abortion has been reported.
- ▶ **Provide all women who present for post-abortion care with contraceptive information, counseling, and services once their immediate medical needs are met.**

¹⁰⁰ More information on post-abortion care is available in Unit 8 on safe abortion care to the full extent of the law.



Noted Practice: Provision of Post-abortion Care in Cox's Bazar, Bangladesh

In Cox's Bazar, Bangladesh, a partnership with Ipas supported the immediate rollout of post-abortion care services.¹⁰¹ The deployment of trained health workers and availability of adequate commodities facilitated service provision. Referral facilities were equipped with human resources and commodities to provide post-abortion care in a systematic manner.

The MISP for SRH activity:

Ensure availability of supplies and commodities for clean delivery and basic newborn care

What basic materials can help pregnant women have a clean birth in an emergency?

In all humanitarian settings, there are women and girls who are in the advanced stages of pregnancy and will therefore deliver during the emergency. At the onset of a humanitarian response, births will often take place outside of a health center without the assistance of skilled birth attendants. In many places home deliveries are common. It is important to make clean delivery kits available to all visibly pregnant women to improve birth and essential newborn care practices when access to a health facility is not possible. Be sure to include information—in the local language—on how to use the kit, to emphasize the importance of giving birth at a health facility in the presence of a skilled provider, and about how to access nearby health facilities. Distribution can be done at registration sites or via community health workers where there is an established network. In settings where access to facilities is not possible and traditional birth attendants are assisting home deliveries, they can be given clean delivery packages.

What is the best way to obtain clean delivery packages?

Clean delivery kit (IARH Kit 2A) packages and supplies for community-level distribution can be ordered from UNFPA through the IARH Kit procurement process.¹⁰² Because these materials are often easily obtained locally and do not expire, it is possible to assemble these kits on site and pre-stock them in settings where they do not need to be immediately available. If possible, consider contracting with a local NGO to produce the kits, which could provide an income-generation project for local women. If a decision is made to locally procure the items as a preparedness measure, it is essential to ensure the quality of the individual items being procured; the UNFPA country office or Procurement Services Branch can support in this effort.

¹⁰¹ Site visit, Women's Refugee Commission, February 2018.

¹⁰² To order kits, go to <https://www.unfpaprocurement.org/humanitarian-supplies>.



Noted Practice: Ensuring the Availability of Clean Delivery Supplies

If the situation permits, assembling clean delivery packages locally may be a good opportunity to identify and organize women's groups and traditional birth attendants. This provides an opportunity to talk about informing and encouraging all pregnant women to deliver in a health facility and the early recognition and referral of those suffering from obstetric complications. The women's groups can make the packages and then distribute them to visibly pregnant women free of charge. This is particularly helpful because, as the women's groups are part of the crisis-affected population, they most likely already know which women are close to their delivery times and are in need of the materials. Those responsible for distributing the kits should also be informed about the nearest facilities, the danger signs in pregnancy, and the importance of delivering with a skilled attendant so that they can pass this information on to the women they visit.

Are there any types of activities related to maternal care that are not a priority in a crisis?

Setting up services to provide antenatal care and training midwives are appropriate activities that need to be established as soon as possible. However, these interventions are not a priority in the immediate emergency and should not divert attention from the more urgent need for access to quality facility-based delivery, basic and comprehensive EmONC services, and newborn care.

Training existing midwives on clean and safe deliveries can wait until the situation has stabilized. Identifying midwives, however, and ensuring they are informed about the referral system should be undertaken from the onset of a crisis. It is important to note the definition of "skilled personnel" has been updated to reflect new evidence and a focus on being competent in providing care during childbirth. The WHO does not recommend training new traditional birth attendants but rather informing all women and the community about danger signs of pregnancy and facilitating referrals to health facilities and, in the stable phase of humanitarian emergencies, supporting professional training for midwives.



Noted Practice: Preventing Excess Maternal and Newborn Mortality and Morbidity in Cox's Bazar, Bangladesh

- ▶ UNFPA and partners were able to deploy obstetricians and anesthesiologists (a combination of national and international staff) to the referral facilities to provide CEmONC.¹⁰³
- ▶ Midwives, who were the first responders at all levels of the health system, were trained in initial stabilization and supported with commodities and supplies.
- ▶ An adequate number of midwives to provide services 24 hours per day, 7 days per week was assured, in addition to having midwife mentors to support new recruits and encourage them to provide evidence-based care.
- ▶ Clean delivery kits were distributed very early on in the emergency through mobile SRH clinics, static clinics, and community health workers. A contingency stock was kept at all times to ensure there were enough supplies available to meet the needs of new Rohingya arrivals over weeks.

Unit 5: Key Points

- ▶ To prevent excess maternal and newborn morbidity and mortality, the WHO recommends that all births be attended by skilled health personnel and take place in health institutions that are equipped and staffed to manage complications.
- ▶ Each health center should have skilled birth attendants and supplies for vaginal births, essential newborn care, and BEmONC interventions, as well as the capacity to refer to the hospital for CEmONC 24 hours per day, 7 days per week.
- ▶ The essential services for all newborns include thermal care, infection prevention/hygiene, feeding support, monitoring, and postnatal care checks.
- ▶ Midwives and other skilled birth attendants should be provided with materials and medicines to conduct deliveries, provide newborn care, treat complications, and stabilize women prior to transport to the hospital, if needed.
- ▶ A referral system must be established to facilitate transport and communication from the community to the health center and hospital to manage obstetric and newborn complications 24 hours per day, 7 days per week.
- ▶ Community members must be informed about the danger signs of pregnancy and childbirth and where to seek emergency care for complications of pregnancy and childbirth.
- ▶ Post-abortion care should be available in the health centers and hospitals because women and girls in humanitarian settings may be at increased risk of spontaneous abortions, unintended pregnancies, and unsafe abortions.
- ▶ Clean delivery packages should be made available to all visibly pregnant women to improve birth and essential newborn care practices when access to a health facility is not possible.

103 Site visit, Women's Refugee Commission, February 2018.

Challenges and Solutions

Challenges	Solutions
What if ensuring 24/7 referral services is not possible due to insecurity in the area?	<p>Without access to adequate basic and comprehensive EmONC, women, girls, and newborns will die unnecessarily. Therefore, it is important to attempt to negotiate access to an appropriate referral facility within any emergency referral system. Where 24/7 referral services are impossible to establish, it is essential that qualified staff are available at all times to stabilize patients with BEmONC. In this situation, establishing a system of communication, such as the use of radios or cell phones, would be helpful to communicate with more qualified personnel for medical guidance and support.</p>
What if the crisis-affected population does not have a history of routinely accessing services for assisted delivery?	<p>As many women in developing countries routinely deliver in their homes, an essential activity to undertake is to ensure the community—especially midwives and existing traditional birth attendants—knows the danger signs and where to immediately refer women, as needed. It is also important to refer newborns to a health facility if they show any of the danger signs.</p> <p>Provide incentives for deliveries in health facilities, such as transport vouchers and newborn kits.</p> <p>Plan and implement trainings and other capacity development opportunities for all trained health staff once the emergency is stable and the MISP for SRH has been fully implemented to ensure respectful, quality care.</p>
What else can be used for transportation besides an ambulance?	<p>Not all health facilities have ambulances. Depending on the context, other solutions could include, but are not limited to, donkey carts, stretchers, rented vehicles, and bicycles.</p>
What can be done if a referral hospital lacks the lifesaving supplies needed for BEmONC and CEmONC?	<p>Discuss the issue during the SRH and health sector/cluster coordination meeting.</p> <p>Work with UNFPA to determine if IARH kits are already available in country.</p> <p>Work with United Nations agencies, including WHO, UNHCR, and UNFPA, World Food Programme (WFP), and the logistics cluster to see if they can support with supplies procurement and management.</p> <p>Discuss the issue with the Ministry of Health and/or advocate for available supplies to be sent to the referral hospitals.</p>

MISP FOR SRH MONITORING CHECKLIST: PREVENT EXCESS MATERNAL AND NEWBORN MORBIDITY AND MORTALITY

The MISP for SRH Checklist, below, can be used to monitor SRH service provision in humanitarian emergencies.

5. Prevent Excess Maternal and Newborn Morbidity and Mortality			
5.1	Availability of EmONC basic and comprehensive per 500,000 population	Yes	No
	Health center with basic EmONC, five per 500,000 population		
	Hospital with comprehensive EmONC, one per 500,000 population		
5.2	Health center (to ensure basic EmONC 24/7)	Yes	No
	One qualified health worker on duty per 50 outpatient consultations per day		
	Adequate supplies, including newborn supplies to support basic EmONC available		
5.3	Hospital (to ensure comprehensive EmONC 24/7)	Yes	No
	One qualified health worker on duty per 50 outpatient consultations per day		
	One team of doctor, nurse, midwife, and anesthetist on duty		
	Adequate drugs and supplies to support comprehensive EmONC 24/7		
	Post-abortion care (PAC)		
	Coverage of PAC: (number of health facilities where PAC is available/number of health facilities) x 100		%
	Number of women and girls receiving PAC		
5.3	Referral system for obstetric and newborn emergencies functioning 24/7 (means of communication [radios, mobile phones])	Yes	No
	Transport from community to health center available 24/7		
	Transport from health center to hospital available 24/7		
5.4	Functioning cold chain (for oxytocin, blood-screening tests) in place		
5.5	Proportion of all births in health facilities: (number of women giving birth in health facilities in specified period/expected number of births in the same period) x 100		%
5.6	Need for EmONC met: (number of women with major direct obstetric complications treated in EmONC facilities in specified period/expected number of women with severe direct obstetric complications in the same area in the same period) x 100		%
5.7	Number of caesarean deliveries/number of live births at health facilities x 100		%
5.8	Supplies and commodities for clean delivery and newborn care		
5.9	Clean delivery kit coverage: (number of clean delivery kits distributed where access to health facilities is not possible/estimated number of pregnant women) x 100		%
5.10	Number of newborn kits distributed including clinics and hospitals		
5.11	Community informed about the danger of signs of pregnancy and childbirth complications and where to seek care		

MATERIALS AND SUPPLIES

Which supplies are needed or which IARH Kits could be ordered to provide clean and safe delivery, essential newborn care, and EmONC services?

IARH Kits (2019)

The IARH Kits are categorized into three levels, targeting the three health service delivery levels. The kits are designed for use for a three-month period for a specific target population size.¹⁰⁴

Note: The IARH Kits are not context specific or comprehensive. Organizations should not depend solely on the IARH Kits and should plan to integrate procurement of SRH supplies in their routine health procurement systems as soon as possible. This will not only ensure the sustainability of supplies but also enable the expansion of SRH services from the MISP to comprehensive care.

Health Care Level	Kit Number	Kit Name
Community/health post	Kit 2A, 2B	Clean Delivery (A: mother, B: birth attendant)
Primary health care facility (BEmONC)	Kit 6A, 6B	Clinical Delivery Assistance—Midwifery Supplies (A: Reusable, B: Consumable)
Primary health care facility (BEmONC)	Kit 8	Management of Complications of Miscarriage or Abortion
Primary health care facility (BEmONC)	Kit 9	Repair of Cervical and Vaginal Tears
Primary health care facility (BEmONC)	Kit 10	Assisted Delivery with Vacuum Extraction
Referral hospital (CEmONC)	Kit 11A, 11B	Obstetric Surgery and Severe Obstetric Complications Kit (A: Reusable, B: Consumable)
Referral hospital (CEmONC)	Kit 12	Blood Transfusion

* Where there is a kit A and B, it means that these kits may be used together, but they can also be ordered separately.

Complementary commodities

Complementary commodities can be ordered according to the enabling environment and capacities of health care providers. Complementary Commodities will be available from UNFPA in 2020.

¹⁰⁴ The 2019 IARH Kits will be available for procurement in early 2020. Check with UNFPA (<https://www.unfpa.org>) or IAWG (<http://iawg.net/resource/inter-agency-reproductive-health-kits-2011>) to verify whether the revised kits are available. For information regarding kits available before 2020, see the *Inter-Agency Reproductive Health Kits for Crisis Situations* (5th ed., 2011) at <http://iawg.net/resource/inter-agency-reproductive-health-kits-2011>.

Service Delivery Level	Item	To Complement
Community/health post	Chlorhexidine	Kit 2A
Community/health post	Misoprostol*	Kit 2B, 6A, 8
Community/health post	Inter-Agency Newborn Care Supply Kit (Community)**	Kit 2A, 2B
Primary health care facility (BEmONC)	Non-Pneumatic Anti-Shock Garment	Kit 6A
Primary health care facility (BEmONC)	Oxytocin	Kit 6B
Primary health care facility (BEmONC)	Inter-Agency Emergency Health Kit (Basic Malaria Module)	Kit 6B
Primary health care facility (BEmONC)	Inter-Agency Newborn Care Supply Kit (Primary Health Facility)**	Kit 6A, 6B
Primary health care facility (BEmONC)	Mifepristone*	Kit 8
Primary health care facility (BEmONC)	Handheld Vacuum-Assisted Delivery System	Kit 10
Referral hospital (CEmONC)	Inter-Agency Newborn Care Supply Kit (Hospital)**	Kit 11A, 11B

*Misoprostol can also be procured to complement Kits 6A and 8 for the primary health care facility level.

**At the time of printing the 2018 IAFM, Newborn Care Supply Kits were not yet available.



Unit 5 Quiz: Prevent Excess Maternal and Newborn Morbidity and Mortality

1. Which of the below is **not** an essential service for all newborns?
 - a. Drying, warming, skin-to-skin contact, and delayed bathing
 - b. Infection prevention/hygiene
 - c. Feeding support: discarding colostrum (or first milk) and then supporting breastfeeding or formula if available
 - d. Monitoring for danger signs of serious infections
 - e. Postnatal care checks
2. Where should BEmONC and/or CEmONC services be made accessible?
 - a. In referral hospitals
 - b. In health centers
 - c. At the community level
 - d. a and b
3. Newborns should be referred to a health facility if they have reduced activity or lack of movement.

True or False

4. If a woman presents for post-abortion care, the **first** thing a skilled health provider should do is refer her to a hospital.

True or False

5. Who should the SRH Coordinator work with to establish an effective referral system at the onset of a humanitarian crisis? Select all that apply:
 - a. Health sector/cluster
 - b. Communities
 - c. Host-country authorities