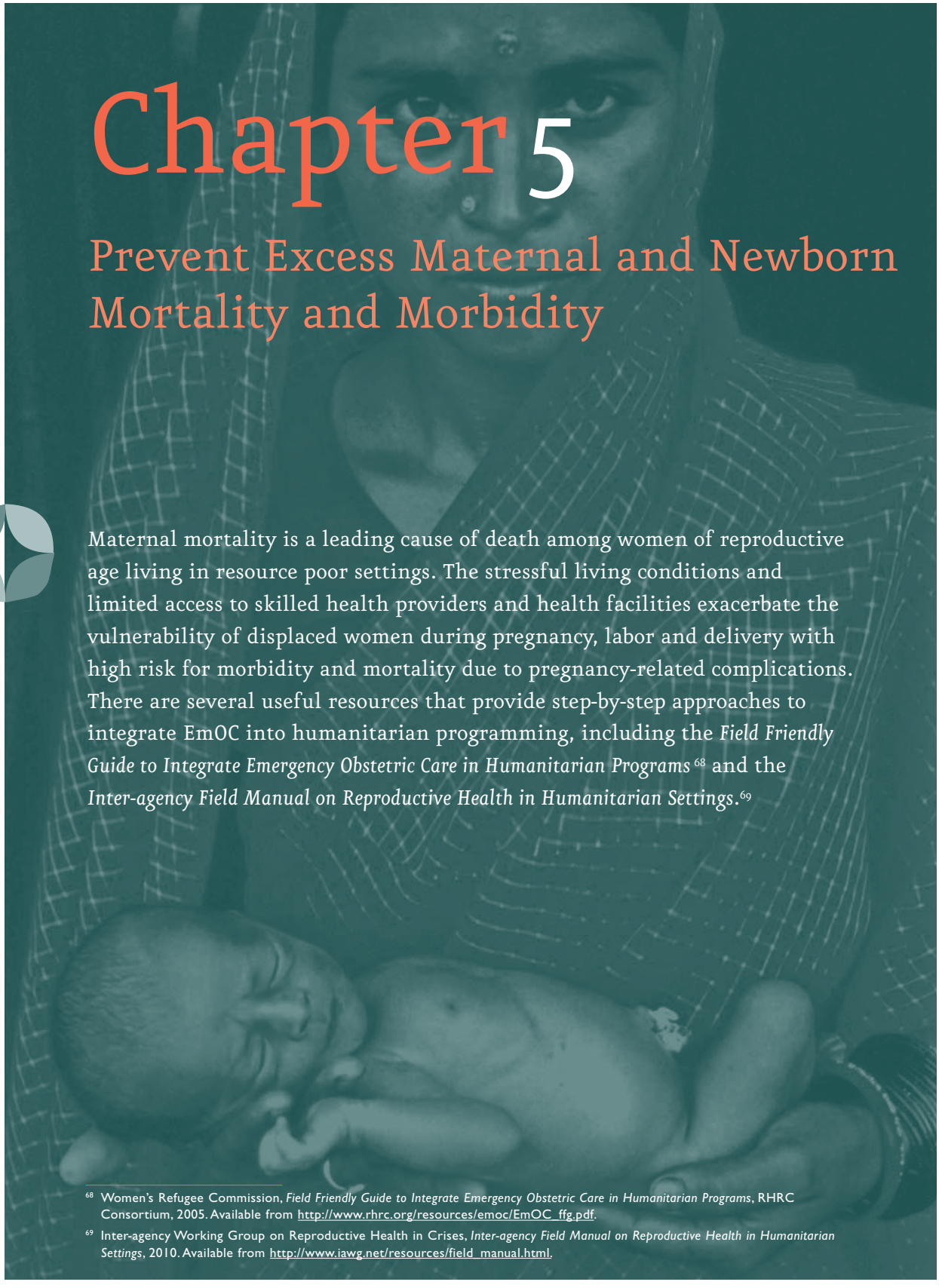

Chapter 5

Prevent Excess Maternal and Newborn Mortality and Morbidity

Maternal mortality is a leading cause of death among women of reproductive age living in resource poor settings. The stressful living conditions and limited access to skilled health providers and health facilities exacerbate the vulnerability of displaced women during pregnancy, labor and delivery with high risk for morbidity and mortality due to pregnancy-related complications. There are several useful resources that provide step-by-step approaches to integrate EmOC into humanitarian programming, including the *Field Friendly Guide to Integrate Emergency Obstetric Care in Humanitarian Programs*[68] and the *Inter-agency Field Manual on Reproductive Health in Humanitarian Settings*.[69]

[68] Women's Refugee Commission, *Field Friendly Guide to Integrate Emergency Obstetric Care in Humanitarian Programs*, RHRC Consortium, 2005. Available from http://www.rhrc.org/resources/emoc/EmOC_ffg.pdf.

[69] Inter-agency Working Group on Reproductive Health in Crises, *Inter-agency Field Manual on Reproductive Health in Humanitarian Settings*, 2010. Available from http://www.iawg.net/resources/field_manual.html.

OBJECTIVES

PREVENT EXCESS MATERNAL AND NEWBORN MORBIDITY AND MORTALITY THROUGH PROVISION OF PRIORITY ACTIVITIES:

- Ensuring availability and accessibility of EmOC and newborn care services at:
  - ❖ Health facilities, where skilled birth attendants, supplies for normal births, and basic emergency obstetric care for the management of obstetric and newborn complications (basic EmOC) should be available 24 hours per day 7 days per week.
  - ❖ Referral hospitals, where skilled medical staff and supplies for comprehensive emergency obstetric care for management of obstetric and newborn emergencies (basic and comprehensive EmOC) should be available 24 hours per day 7 days per week.
- Establishing a referral system for transportation and communication from the community to the health center or hospital, and between the health center and the hospital.
- Providing clean delivery kits to visibly pregnant women and birth attendants for clean home deliveries when access to a health facility is not possible.

Ensure basic EmOC and newborn care at all health centers. This means that the staff is skilled and has the resources to:

1. Administer *parenteral* antibiotics
2. Administer *parenteral* uterotonics
3. Administer *parenteral* anticonvulsants
4. Perform manual removal of the placenta
5. Perform removal of retained products of conception
6. Perform assisted vaginal delivery
7. Perform neonatal resuscitation

Ensure comprehensive EmOC and newborn care at hospitals. This means that the staff is skilled and has the resources to support all of the interventions above, plus to:

8. Perform cesarean and laparotomy under anesthesia
9. Perform blood transfusions

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

In any displaced population, approximately 4 percent of the total population will be pregnant at a given time.[70] Of these pregnant women, approximately 15 percent will experience an obstetric complication such as obstructed or prolonged labor, pre-eclampsia/eclampsia, sepsis, ectopic pregnancy or complications of abortion.[71] At the onset of an emergency, past experience has shown that births tend to take place outside 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. Without access to emergency obstetric services, many women will die or suffer long-term health consequences that are preventable (e.g., obstetric fistula).

Urban 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 EmOC, newborn care and an emergency referral system 24 hours per day, 7 days per week. In circumstances where a "user fee" is a new barrier to health care service, advocate for free access for maternal and newborn health care services, including EmOC services. In urban settings, crisis-affected populations are unlikely to know where women can go for free care during childbirth or complications of childbirth. Ensure that explicit information is available to inform pregnant women and the affected urban community when and where women can access free delivery care and care for complications of child birth. Also identify how communities are currently gaining information, if at all, such as through the radio, cell phones or other means of communications and consider using adaptable IEC templates to inform communities. (See http://rhrc.org/members/iec.)

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 later stages of pregnancy and who will therefore deliver during the emergency. It is important to make clean delivery packages available to all visibly pregnant women to support clean home deliveries (when access to a health facility is not possible). Be sure to include information on how to use the clean delivery 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 and can be provided to skilled personnel who are attending to births at the community level.

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 following the delivery.

[70] United Nations Population Fund, *State of the World Population 2002,* 2002.

[71] United Nations Children's Fund, World Health Organization, United Nations Population Fund, *Guidelines for Monitoring the Availability and Use of Obstetric Services*, 1997.

Clean Delivery Package

The package contains very basic materials: one sheet of plastic (for the woman to deliver on), a bar of soap, a pair of gloves, one clean razor blade (new and wrapped in its original paper, to cut the umbilical cord), three pieces of string (to tie the umbilical cord), two pieces of cotton cloth (one to dry and the other to warm the baby), explanatory leaflets with pictures.

What is the best way to obtain clean delivery packages?

Because the materials included in a clean delivery package are often easily obtained locally, it is possible to assemble these packages on site. In fact, it may be possible to contract with a local NGO to produce the packages, which could also provide an income generation project for local women. Clean delivery packages can also be ordered from UNFPA, which may sometimes be a quicker alternative—and the sooner the materials are available, the better it is for pregnant women. In addition, contacting UNFPA[72] before the start of a crisis to establish a relationship and to ensure the availability of supplies will likely facilitate better emergency preparedness.

Exercise

Use the Crude Birth Rate (CBR) (4%) to calculate the supplies and services needed for a population of 10,000 for 3 months to ensure pregnant women have a safe delivery.	
CBR =	4% per year
10,000 X .04 =	400 births per year
400 X .25[73] =	100 births in a 3-month period
ORDER	One RH Kit 2, Part A which contains 200 clean delivery packages to be used by women. This is sufficient for more than a 3-month period. One RH Kit 2, Part B which contains 5 sets of supplies for use by TBAs, including shoulder bags, flashlights with batteries, gloves, plastic aprons and rain ponchos.

How can we ensure that pregnancy and delivery complications are dealt with efficiently at the health center level?

Support and promote for all childbirth to take place at health facilities. You should also disseminate information to the community and to service providers at the location about working hours and ambulance services for health centers and hospitals that can manage normal and complicated pregnancy and delivery. In addition, provide midwives and other skilled birth attendants at the primary health center level with materials and drugs to safely conduct deliveries, to provide basic EmOC and to stabilize women prior to transport to the referral hospital.

[72] Contact information available at http://www.unfpa.org/public/contact

[73] Three months are 25 percent (.25) of one year.

Ensure access to basic and comprehensive EmOC and newborn care services. According to the UN Process Indicators of the Emergency Obstetric Services, an estimated 15 percent of women will develop a potentially life-threatening complication during pregnancy or at the time of delivery. [74] In order to prevent maternal and newborn morbidity and mortality resulting from complications, RH Officers must ensure that basic and comprehensive EmOC and newborn care services are available 24 hours a day 7 days a week. These services include provision of drugs and medical supplies, and recruitment/retention of skilled health personnel. Supplies to address obstetric emergencies are included in the Inter-agency RH Kits and can be ordered through UNFPA (see Chapter 8 for Ordering RH Kits).

How many deliveries require a cesarean section (c-section)?

About five to 15 percent of all deliveries will require a cesarean section.[75] Women with obstetric emergencies, and those requiring blood transfusion and surgery will need to be referred to a hospital that is capable of providing comprehensive EmOC.

Estimates of *c-sections needed* based on a population of 20,000 with a CBR of 4%		
EXPECTED NUMBER OF BIRTHS IN A 3-MONTH PERIOD	20,000 x .04 (CBR) x .25	200
PREGNANT WOMEN WHO WILL FACE COMPLICATIONS AT DELIVERY	15%	30
COMPLICATED DELIVERIES THAT REQUIRE A C-SECTION	5-15%	10-30

The Reality of Implementing the MISP in Haiti[76]

Four months following the earthquake in January 2010 in Haiti, basic and comprehensive EmOC was available to varying extents in the three settings assessed, but the quality and availability of free care was not consistently available 24 hours per day 7 days per week. In Port-au-Prince, several facilities offered free comprehensive EmOC but mobile clinics, serving many displaced settlements and camps, were not able to provide basic EmOC. Referral pathways also appeared to be problematic for communities without access to communications networks or affordable transport options–particularly those in the more remote camps and settlements in Léogane and Jacmel. Women also appeared to have very limited access to clean delivery kits, in spite of agencies reporting distribution in the thousands. Care for complications in newborns was also raised as a major concern in all three locations.

[74] United Nations Children's Fund, World Health Organization, United Nations Population Fund, *Guidelines for Monitoring the Availability and Use of Obstetric Services*, 1997. www.amdd.hs.columbia.edu/docs/unguidelines.finalversion.pdf

[75] UNICEF, WHO and UNICEF *Guidelines for Monitoring the Availability and Use of Obstetric Services*, 1997.

[76] *Women's Refugee Commission, Four Months On: A Snapshot of Priority Reproductive Health Activities in Haiti: An Inter-agency MISP Assessment Conducted by CARE, International Planned Parenthood Federation, Save the Children and Women's Refugee Commission*, May 17-21, 2010, October, 2010. Available from http://www.womensrefugeecommission.org/reports

What is included in newborn care?

Approximately two-thirds of infant deaths occur within the first 28 days of life.[77] The majority of these deaths are preventable by initiating essential actions that can be taken by mothers or health care workers. [78] One major challenge is that approximately five to ten percent of newborns do not breathe spontaneously at birth and require stimulation; [79] about half of those who have difficulty initiating breathing require resuscitation.[80] To prevent and address these complications:

- Provide midwives and other skilled birth attendants in health facilities with materials and drugs for essential newborn care. This will include materials for newborn resuscitation, antibiotics for the treatment of sepsis, and supplies for the care of low birth weight/preterm babies.
- Ensure skilled birth attendants are able to provide competent essential newborn care, including:
  - Initiation of breathing;
  - Resuscitation;
  - Thermal protection (delayed bathing, drying, skin-to-skin contact);
  - Prevention of infection (cleanliness, hygienic cord cutting and care, eye care);
  - Immediate and exclusive breastfeeding; and
  - Management of newborn sepsis and care for preterm/low birth weight babies.

Establish a Referral System

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

RH Officers must coordinate with the health sector/cluster and host-country authorities to ensure a referral system (including means of communication and transport) is established immediately (in the first days) in a humanitarian setting. The referral system must support the management of obstetric and newborn complications in the displaced population available 24 hours per day 7 days per week. It should ensure that women, girls and newborns that require emergency care are referred from the community to a health center where basic EmOC is available, or a hospital where basic and comprehensive EmOC and newborn care is available. Patients with obstetric complications and newborn emergencies that cannot be managed at the health center must be stabilized and transported to a hospital with comprehensive EmOC and newborn care services.

What are the requirements of an effective referral system?

A referral system should have transport—including drivers, sufficient fuel and cell phones/radio/sat phones—available 24 hours per day 7 days per week. In a camp setting, it is extremely important to attempt to negotiate access to the referral hospital with camp security personnel in order to allow for the transport of emergency patients at night. Where available 24 hours per day 7 days per week transportation services are impossible to establish, the RH Officer should work through the health sector/cluster to resolve the problem and to ensure that the populations have access to basic and comprehensive EmOC.

[77] World Health Organization, *Perinatal and Neonatal Mortality: Global, Regional and Country Estimates*, 2001.

[78] Moore, J. and J. McDermott, Every *Newborn's Health: Recommendations for Care for All Newborns, Save the Children USA,* 2004.

[79] World Health Organization. Basic *Newborn Resuscitation: Practical Guide*, WHO/RHT/MSM/98.1, 1-32, 1998.

[80] World Health Organization. Basic *Newborn Resuscitation: Practical Guide*, WHO/RHT/MSM/98.1, 1-32, 1998.

For there to be a functional referral mechanism, it is critical that qualified staff are available at all times at health centers to provide basic EmOC and newborn care. These staff members must have a means of communication to call for transportation as soon as possible and to contact the hospital to inform them that they are sending a referral patient. The communication system is also important for staff to contact the referral hospital for support and guidance on stabilizing the patient if she has an obstetric complication, particularly if transport to the hospital is not possible. A qualified medical person who can address obstetric complications and perform a cesarean section if necessary must be available at the referral facility at all times. Finally, the referral facility must have qualified staff, medical equipment and supplies to cope with the extra demands put on it by the displaced population. Where needed, it is important to support existing hospitals in areas with the affected populations with skilled staff, infrastructure and medical commodities, including medicines and surgical equipment, and to provide comprehensive EmOC and newborn care.

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

Most maternal deaths occur from complications during labor, delivery and in the immediate postpartum period. The majority of these complications cannot be predicted during pregnancy. Setting up the ability 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 of access to quality facility-based delivery, basic and comprehensive EmOC and newborn care. Training existing midwives on clean and safe deliveries should wait until more stability has been reached; identifying midwives, however, and ensuring they are informed about the referral system, should be undertaken from the onset of a crisis. It is also important to inform community members on danger signs during pregnancy and where to refer women with these symptoms from the onset of a crisis.

It is important to note that WHO does not recommend training new TBAs, but rather informing all women in the community about danger signs during delivery and providing a professional training curriculum for village midwives.[81]

Noted Practices in Preventing Excess Maternal and Newborn Mortality and Morbidity from Burma/Myanmar

After Cyclone Nargis devastated Burma/Myanmar in May 2008, UNFPA, MSI, Relief International and other groups prioritized ensuring referral systems were established for EmOC. Agencies used creative transport mechanisms for women with obstetric emergencies, including transportation by boat to referral hospitals since roads were severely obstructed. Agencies pooled their funds to support the costs of EmOC and also established maternity waiting homes during the more stable times, reflecting exceptional coordination among agencies supporting EmOC and newborn care.

[81] WHO, *Making pregnancy safer: the critical role of the skilled attendant: a joint statement by WHO, ICM and FIGO*, 2004. Available from http://whqlibdoc.who.int/publications/2004/9241591692.pdf.

What causes women to die from pregnancy complications?

The common causes for maternal mortality are hemorrhage (ante-and postpartum), postpartum sepsis, pre-eclampsia or eclampsia, complications of abortion, ectopic pregnancy and prolonged or obstructed labor. While there are many factors that can cause the delays in accessing life-saving care that cost women their lives, those delays can be grouped using a simple model called The Three Delays. Those three types of delays that contribute to the likelihood of maternal death are:

- Delay at the household level in identifying complications and deciding to seek care;
- Delay in reaching a treatment facility (inability to get transport, poor road conditions, insecurity, check points, curfews, etc.); and
- Delay in receiving adequate treatment at the facility once reached (absence or lack of qualified staff, lack of equipment/supplies, high costs of treatment, need for down payment prior to receiving care, etc.).[82]

Therefore, the emergency team needs to make sure that basic and comprehensive EmOC services are in place, and that there is immediate focus on preventing delays for timely access to good quality basic and comprehensive EmOC services for women during labor, delivery and in the immediate postpartum period.

Noted Practice

If the situation permits, assembling clean delivery packages locally may be a good opportunity to identify and organize women's groups and TBAs with whom you can then talk about encouraging all pregnant women to deliver in a health facility, and about early recognition and referral of those suffering from obstetric complications. The women's group can make up the simple 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 displaced population, they most likely already know which women are close to their delivery times and are in need of the materials. Those provided with the kits should also be informed about the nearest facilities and the importance of delivering with a skilled attendant so that they can pass this information on to the women they visit.

[82] Thaddeus, S. and D. Maine, "Too far to walk: maternal mortality in context," Social Science and Medicine, April 1994.

MISP Maternal and Newborn Checklist Monitoring

- Health center (to ensure basic EmOC and newborn care 24/7) with:
  - One qualified health worker on duty per 50 outpatient consultations per day
  - Midwife supplies, including newborn supplies, available
- Hospital (to ensure comprehensive EmOC and newborn care 24/7) with:
  - One qualified service provider on duty per 20-30 inpatient beds for the obstetric wards
  - One team of doctor/nurse/midwife/anesthetist on duty
  - An adequate amount of drugs and other supplies to support comprehensive EmOC and newborn care 24/7
- Referral system for obstetric and newborn emergencies functioning 24 hours per day/seven days per week with:
  - Means of communication (radios, mobile phones) available 24/7
  - Transport from community to health center available 24/7
  - Transport from health center to hospital available 24/7
- Functioning cold chain (for oxytocin, blood screening tests) in place
- Number of caesarean deliveries/number of births x 100
- Number of clean delivery kits distributed/estimated number of pregnant women x 100

Which supplies are needed or which UNFPA RH Kit(s) could be ordered to address this issue?[83]

Number	Name	Color
Kit 2:	*Clean Delivery Subkit (Individual) (Part A + B)*	*Dark blue*
Kit 6:	*Clinical Delivery Assistance (Part A + B)*	*Brown*
Kit 8:	*Management of Complications of Miscarriage*	*Yellow*
Kit 9:	*Suture of Tears (cervical and vaginal) and Vaginal Examination*	*Purple*
Kit 10:	*Vacuum Extraction for Delivery (Manual)*	*Grey*
Kit 11	*Referral level for RH (Part A + B)*	*Fluorescent Green*
Kit 12:	*Blood Transfusion*	*Dark green*

Challenges and Solutions

1. *What if ensuring 24/7 referral services are not possible due to insecurity in the area?*

   Without access to adequate basic and comprehensive EmOC, women and girls will die unnecessarily. Therefore, it is extremely important to attempt to negotiate women and girls' access to an appropriate referral facility. Where 24/7 referral services are simply impossible to establish, it is particularly essential that qualified staff are available at all times to stabilize patients with basic EmOC. 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.

2. *What if the displaced population does not have a history of routinely accessing services for assisted delivery?*

   As many women in developing countries routinely deliver in their homes, an essential activity to undertake is to ensure the community, especially midwives and TBAs, knows the danger signs and where to immediately refer women with danger signs of pregnancy and delivery, including: heavy bleeding, high fever, severe headache, blurry vision, swelling of face/hands, convulsions, prolonged labor, retained placenta and loss of consciousness. It is important to plan and implement training and capacity-building for all trained health staff once the emergency is stable and the MISP has been fully implemented.

[83] *The Reference and Training Package, a library of resource materials* is included with each kit order. Please see Chapter 8 for the list of materials in this package. Inter-agency Working Group on Reproductive Health in Crises, *Inter-Agency Reproductive Health Kits for Crisis Situations (Fourth edition)*, January 2008. Available from http://www.iawg.net/resources/rhkits.html.

Chapter 5 Quiz

(Answers on page 106)

1 *Which of the below is **not** an activity of emergency obstetric care?*

- **a.** Manually removing the placenta
- **b.** Resuscitating the newborn
- **c.** Distributing clean delivery kits
- **d.** Performing cesarean section
- **e.** Performing blood transfusion

2 *Which activity is **not** a part of essential newborn care?*

- **a.** Initiation of breathing (resuscitation)
- **b.** Ensuring the baby is dried and warmly wrapped, keeping its head covered immediately after birth
- **c.** Identification and treatment of sepsis
- **d.** Prevention of infection (hygienic cord cutting and care, eye care)
- **e.** Blood transfusions

3 *Approximately what proportion of the displaced population will be pregnant at a given time?*

- **a.** 25 percent
- **b.** 20 percent
- **c.** 15 percent
- **d.** 4 percent
- **e.** 10 percent

4 *It is usually better to construct a new health facility than to support an already existing one.*

- True
- False

5 *Which material is not part of a clean delivery kit?*

- **a.** A new razor blade
- **b.** A sheet of plastic
- **c.** Two pieces of string
- **d.** Sutures
- **e.** A bar of soap