

Key steps for maternal and newborn health care in Humanitarian Crisis

This document has been prepared for maternal and newborn health experts as well as reproductive health experts coordinating and assisting with emergency care during the humanitarian crisis. It describes the ways to estimate the number of pregnant women and those who are about to deliver, highlights some important aspects of emergency care related to pregnancy, childbirth and newborn care, and describes the content of UN kits for such care in three different scenarios.

In the current crisis, we need to ensure that people have access to shelter, nutrition, water, sanitation and essential health care including treatment of injuries. At the same time, special attention must be paid to pregnant women and newborn babies, who are most vulnerable and often the first victims of any crisis. An appropriate environment for the mother and newborn after childbirth (for “home” care) is essential.

We need to ensure that all pregnant women go through their pregnancy and can give birth as safely as possible. This requires that i) essential supplies (in the form of emergency kits) reach expectant mothers as quickly as possible, ii) skilled professionals with essential equipment be available and iii) an evacuation plan be created for women and newborn infants with pregnancy and health complications.

Needs assessment

Appendix 1, shows the estimated number of women who will deliver every month, potential problems they or their babies may have and the number that will require referral care based on a population of 1 million and a population of 30,000, with an estimated crude birth rate of 25. It also shows the estimated number of Interagency Emergency Health Kits (IEHK 2006) and Interagency Reproductive Health kits (IA-RH) required for this crisis situation. Appendix 1, is built on the following assumptions:

- Crude birth rate (per 1,000 population) is 25, thus higher than in the general population of the country (as the situation gets worsened in emergencies and the magnitude of problem increases).
- 15% of all pregnant women will have a miscarriage in early pregnancy (this is usually worse in crisis situations).
- Total number of pregnant women is the number of women giving birth plus the number of women having miscarriages.
- Number of women giving birth is calculated using the crude birth rate.
- Assumed stillbirth ratio is 15 per 1,000 live births.
- Assumed proportion of maternal complications is 15% of women giving birth.
- Assumed proportion of neonatal complications is 10% of all liveborn infants.

Appendix 2, serves as a guide to identify facilities and health workers with midwifery skills in the area and to estimate the capacity of services for childbirth care.

Appendix 3 outlines the number of kits needed by service delivery point and how to order them.



Information for managers concerning pregnancy, childbirth and newborn care during a humanitarian crisis

Certain aspects of maternal and newborn health must be addressed in this initial phase to reduce mortality and morbidity among pregnant women and newborn infants. Issues of concern related to pregnancy and childbirth during the current crisis include:

1. Childbirth and immediate newborn care
2. Complications during pregnancy, childbirth and postpartum
 - a. Conditions directly related to pregnancy and childbirth
 - b. Other conditions which can complicate pregnancy and childbirth
 - c. Newborn problems.

Childbirth and Immediate Newborn Care
<p>In pregnancy</p> <ul style="list-style-type: none"> ▪ Ensure sufficient number of delivery kits for the estimated number of deliveries in each area. ▪ Identify women who are in advanced stages of pregnancy and discuss birth plans - where to deliver, how to recognize danger signs and where to seek help. Give each woman a delivery kit. ▪ Maintain a register of pregnant women and estimated date of delivery, births and deaths. ▪ Provide the woman with information on where to obtain skilled attendants and on referral facilities. ▪ Give tetanus toxoid (2x) to all pregnant women. ▪ Ensure that pregnant women receive additional warm clothes, based on climate. Provide baby clothes and blankets for babies. ▪ Ensure that pregnant and lactating women receive additional rations of food and drinking water. Chemicals for water disinfection are safe for pregnant and lactating women if used according to instructions. <p>In childbirth</p> <ul style="list-style-type: none"> ▪ If providing delivery care on the camp site, ensure privacy for the woman. ▪ Ensure safety during delivery: consider risks in immediate environment that may harm mother/newborn. For example, in the context of a toxic spill, this would require moving pregnant women and newborns to the nearest safe space. ▪ Ensure presence of female health workers and adequate security for the delivery site. ▪ In cold weather, keep the place warm for the birth of the baby. ▪ In case of known complications or where problems are highly likely (e.g., a woman with a previous caesarean delivery), and if the appropriate health facility is not available nearby, organize referral to the appropriate level of care. ▪ During childbirth, ensure that she is provided with clean fluids and food (meat should be thoroughly cooked) and that she is not left alone at any time. ▪ In case of delivery without a skilled attendant, instruct woman and her family to watch for danger signs and to seek immediate help should they occur. If TBAs are assisting women, assess their practices, identify harmful ones and find approaches for preventing them. ▪ Where skilled attendance and supplies at birth is available, ensure active management of third stage of labour. ▪ Reduce risks of infection by using infection prevention measures while examining and caring for the woman during and immediately after childbirth. Ensure adequate supply of clean water and gloves or disinfectants for hand-washing for delivery and cutting the cord. ▪ Use a clean (preferably sterile) instrument to cut the umbilical cord, and check frequently for bleeding. <p>After childbirth</p> <ul style="list-style-type: none"> ▪ Use some kind of identification for the baby and the mother. ▪ Keep the baby warm by keeping the baby dry, close to mother's body (skin-to-skin or dressed above mother's clothes, covered with blanket), cover the baby's head. ▪ Promote, protect and support early (initiation within first hour of birth) and exclusive breast feeding, day and night.¹ ▪ Clean baby's eyes immediately after birth, and if prophylaxis is country policy, instill drops or ointment. ▪ Observe the mother and the baby for at least 12 hours for problems. Babies, especially preterm/small with breathing

¹ This recommendation applies in all settings for women who do not know their status and HIV-negative women, including in areas with high prevalence and low acceptance or availability of interventions to prevent HIV transmission to infants. For women who have been tested and are HIV-positive, UN guidelines state "when replacement feeding is acceptable, feasible, affordable, sustainable and safe, avoidance of all breastfeeding by HIV-infected mothers is recommended. Otherwise, exclusive breastfeeding is recommended during the first months of life" and should then be discontinued. Source: WHO's HIV and Infant Feeding: A guide for health-care manager and supervisors.



<p>difficulties starting soon after birth requires special newborn care. Guidance on pre-referral care and referral can be found in WHO IMPAC guides. Newly born infants who are not feeding well need special support for breastfeeding and referral if no improvement.</p> <ul style="list-style-type: none"> ▪ Visit the mother and baby and assess the mother for excessive bleeding, fever or foul smelling discharge and the baby for breastfeeding. ▪ Dispose the placenta safely by burial or incineration. If the baby is stillborn or dies after birth, bury or cremate the body according to local customs. ▪ Mother and baby should be accommodated in an area that is protected from sun, rain or winds. If open fire, ensure good ventilation and protect the baby from the smoke. ▪ Ensure the family and others in the relief camp understand the special care the pregnant woman and newborn need. <p>Continuing postnatal care</p> <ul style="list-style-type: none"> ▪ Keep the baby with the mother. Avoid putting two babies in the same cot. ▪ Teach mother basic hygiene, including cord care, how to keep the baby warm. ▪ Assess breastfeeding occasionally. ▪ Teach the mother danger signs to look for and ensure she knows when and where to go for help. ▪ Ensure immunizations according to the accepted calendar. 		
Complications directly related to pregnancy and childbirth		
<u>Conditions</u> directly related to pregnancy and childbirth	Conditions related to newborn problems	Other conditions complicating pregnancy
<p>Most complications occurring in pregnancy and childbirth can occur without warning. Early recognition of complications and appropriate management (including referral) will reduce ill-health and death resulting from these problems which include:</p>	<p>(first week of life)</p>	<p>These include some of the endemic diseases in the area which may complicate pregnancy:</p>
<p><i>Bleeding</i></p> <p>In case of excessive bleeding in early pregnancy (possible miscarriage), refer the woman to a facility where manual vacuum aspiration can be done. She may also need antibiotics.</p> <p>Refer any woman with bleeding in late pregnancy to a functioning first referral facility (<i>define</i>).</p> <p>Manage excessive bleeding occurring immediately after childbirth by uterine massage and oxytocics (should be available in kits). If bleeding is not controlled, transfer the woman to first referral level. The health worker should accompany the woman during transfer, while continuing with efforts to stop or reduce bleeding during transfer.</p> <p><i>Preterm and/or Prolonged labour</i></p> <p>Refer all women in early preterm labour to the health facility. In case of advanced preterm labour, arrange for delivery and transfer to a facility for care of the preterm baby. Ensure that mother can stay with the small/sick baby for breastfeeding. Do not discharge babies before breastfeeding is established.</p>	<p>Babies with diarrhoea should continue breastfeeding and receive ORS 20 ml/kg (50 to 60 ml) between breastfeeds by cup.</p> <p>Babies who have stopped feeding or are not feeding well might be ill and should be referred.</p> <p>If a baby does not have a mother (died, referred), find another woman to feed the baby. Avoid using formulas as per interagency guidelines on breastfeeding in emergencies².</p> <p>Infants in which breathing difficulties begin within 3 days of birth - fast breathing, chest in-drawing, grunting - may have pneumonia. Treat them according to WHO guidelines on newborn or young infant pneumonia.</p>	<p><i>Diseases occurring through contaminated food and water, as they relate to pregnancy (Diarrhoea, dysentery, typhoid, cholera, viral hepatitis A and E, and leptospirosis)</i></p> <p>Avoid unclean water and uncooked food, wash hands with soap and clean water after ablutions and before eating can reduce the risk of contracting these infections.</p> <p>For immunization in pregnancy, use only vaccines which contain killed organisms.</p> <p>Provide plenty of clean fluids (ORS, salted rice water, coconut water) in case of diarrhoeal illness during pregnancy.</p> <p>Provide antibiotics for typhoid, cholera, dysentery and leptospirosis. Benefits of the</p>

² For further details, see: Reproductive health during conflict and displacement Appendix II Breastfeeding in emergency situations also see Interagency manual on reproductive health in refugee situations, Ch 3.



<p>Refer all women with prolonged labour to the first referral facility.</p> <p>Infections Prevent infections by ensuring clean delivery and infection prevention practices. Ensure gloves to protect health workers and clean water with disinfectants for washing gloved hands.</p> <p>Refer women with fever and/or foul smelling vaginal discharge for further care in health facilities</p> <p>Refer all pregnant or recently delivered women with convulsions, headache, blurred vision or loss of consciousness to the first referral facility for further care.</p>		<p>antibiotics for the mother and baby in these conditions outweigh risks for the baby.</p> <p>Provide supportive care for hepatitis but refer immediately if maternal condition deteriorates.</p> <p>Vector borne diseases (<i>malaria, dengue, scrub typhus</i>)</p> <p>Prevent <i>malaria and dengue</i> by use of insecticide treated bed-nets.</p> <p>Use intermittent preventive treatment for malaria where falciparum malaria is endemic.</p> <p>Provide chloramphenicol for treatment of <i>scrub typhus</i> during pregnancy (except in the last trimester when it is preferably avoided).</p> <p>Ill women can and should continue to breastfeed their babies. They must observe hygiene as much as possible (hand washing).</p>
---	--	--



Emergency kits providing essential equipment, supplies and medicines for childbirth and complications

The Interagency Emergency Health Kit 2006 (IEHK - formerly the NEHK 98 (WHO))

The complete emergency kit contains two separate sets of drugs and supplies.

1. The first set, or basic kit, consists of 10 identical packages of basic drugs and supplies intended for use by community health workers located in remote areas. Each package is calculated to serve 1,000 persons for approximately three months. The basic kit does not contain oxytocin nor a delivery kit.

2. The second, or supplementary kit, contains drugs, renewable supplies, and equipment needed by doctors working in first- or second-referral health facilities. This supplementary kit contains oxytocin injections (200 ampoules of 10 IU/ml), emergency contraceptives and **ONE** delivery set which includes: 1 stainless steel box, 1 scissors straight, 1 scissors dissecting straight, Mayo 16-18cm SS, 1 forceps haemostat straight, Rochester Pean 15-17 cm SS

Therefore, 10 basic kits + 1 supplementary kit together make up one IEHK.

Additional kits covering immunization, reproductive health and nutrition are available and may be provided after assessment of needs.

UNFPA have 13 sub-kits available for Reproductive Health. Those relevant for maternal health are:

Reproductive Health Sub kit 2. Clean delivery

This kit is composed of 200 individual packets containing material and a pictorial instruction sheet for self delivery plus material for birth attendants. They are designed for 10,000 people for 3 months and are for use at the community level.

These packets have two parts

Part A: To be distributed to all women more than six months pregnant.

Part B: Equipment for birth attendants (for universal precautions)

Considering a birth rate of 4%, 100 deliveries will occur in 3 months for a population of 10,000
Number needed: 200 for a population of 10,000: 100 kits for those delivering in the initial 3 month period, and another 100 kits for deliveries in the subsequent 3 month period.

Note: no oxytocin is available. If a skilled attendant is providing childbirth care, 400 ampoules of oxytocin, syringes, needles and antiseptic swabs should be added.

Reproductive Health Sub kit 6. Clinical Delivery Assistance

These are for use at primary health care level and referral hospital and are designed for a population of 30,000 for a period of 3 months. (Based on a CBR of 4%, 300 deliveries will occur, of which an estimated 15% will take place in a health facility, hence there must be equipment for 45 deliveries)

This kit is designed for trained personnel, midwives, nurses with midwifery skills and medical doctors to perform normal deliveries, repair episiotomies and perineal tears under local anaesthetic and to stabilize dangerous situations (eclampsia and haemorrhage) before transfer to a referral unit.



Reproductive Health Sub kit 8. Management of Complications of miscarriage

These are for use at the primary health care and referral levels and are designed for 30,000 people for 3 months. (Assuming 20% of pregnancies may result in miscarriage, 60 women in a three month period may need treatment.)

This kit contains equipment and materials to perform uterine evacuation and antibiotics

Reproductive Health Sub kit 10. Vacuum extraction

These are for use at referral hospitals and are designed for a population of 30,000 for 3 months. This kit contains a vacuum extractor to assist in vaginal delivery.

**Reproductive Health Sub kit 11. Referral level (part A) Surgical/obstetric reusable equipment
Referral level (part B) Drugs and disposable equipment**

For a population of 150,000 with a CBR of 4% there will be an estimated 6000 deliveries over a 12 month period or 1,500 deliveries over 3 months. Of these 5% may need a caesarean section. Assuming that 40% reach the hospital in time, 30 additional women will need this care.

This kit contains equipment, materials and drugs provided for caesarean sections, resuscitation of mothers and babies, treatment of sexually transmitted infections, and complications of pregnancy and delivery designed for the referral level: surgical/obstetric. It serves 150,000 people for 3 months.

Reproductive Health Sub kit 12. Transfusion

Materials for grouping, cross-matching blood and HIV testing designed for referral level: surgical/obstetric for a population of 150,000 over a 3 month period.

An administrative kit is also included.



Appendix 1. Number of pregnant women and babies

Population	1,000,000 population		30,000 population			WHO Emergency Health Kits / Inter-Agency Reproductive Health Kits for Crisis Situations		
	Expected number of pregnant women and births		Expected number of pregnant women and births			Kit Number	Name of Kit	No. of kits per population of 30,000 per 3 months
	Per Year	Per Month	Per Year	Per Month	In three months			
Women having miscarriage	3,750	313	113	9	28	IA-RH Sub Kit 8	Management of Complications of Miscarriage	1
Women giving birth (total number of births)	25,500	2,125	750	63	189	IEHK (formerly NEHK-98)	Clean Delivery	3
Babies born alive (Number of live births)	24,625	2,052	739	62	185	IA-RH Sub Kit 2	Clean Delivery Kit (individual): Part A-Mother; Part B- Skilled Birth Attendant	3
Stillborn babies	375	32	11	1	3	IA-RH Sub Kit 6	Delivery Kit (Health Facility)	1
Of those:								For 150,000
Women with pregnancy and childbirth complications	4,313	359	129	11	32	IA-RH Sub Kit 11 (A+B)	Referral Level Kit for Reproductive Health: Part A-Reusable Equipment Part B- Drugs and Disposable Equipment	1
						IA-RH Sub Kit 10	Vacuum Extraction for Delivery (manual) Kit	5
						IA-RH Sub Kit 12	Blood Transfusion Kit	1
Newborn babies with problems	2,463	205	75	6	19			
Estimated Total Number of Pregnant Women	28,750	2,396	863	72	216			

Source: WHO Emergency Health Kits/Inter-Agency Reproductive Health Kits for Crisis Situations, 3rd Edition



Appendix 2. Needs Assessment - Planning Tool

Note: following figures are calculated against crude birth rate of 3.0%

A. Estimate and Identify the number of pregnant women and newborns		
	Expected number	Observed
If total population is	100,000	
If crude birth rate (per 1000 population) is:	30	
Estimated number of pregnant women/ year ($c \times 1.15$)	3450	
Number of births/year	3000	
Estimated number of deliveries/month	250	
Number of newborn infants/month	250	
Expected number of women with childbirth complications/year	455	
Expected number of women with childbirth complications/ month	38	
Expected number of newborn infants with problems/year	300	
Expected number of newborn infants with problems/month	25	
B. Planning for Facilities and services needed for population of 100,000 (Using checklist below, identify health facilities and referral resources now available and map them. Where gap exists, make note in order to add services required)		
	In immediate setting	In neighboring, non affected area if applicable
Health Centres		
Hospitals		
Identify facilities providing pregnancy and postpartum care <i>Norm: 1 per 10,000 population</i>		
Per facility:		
Functioning equipment, supplies and medicines for pregnancy and postpartum care (number, availability) <i>Norm: refer to emergency kit - Appendix III</i>		
Clean water at the facility		
Sanitation at the facility (a. bathing facilities b. toilet facilities)		
Placenta disposal facilities and other biohazardous materials		
Determine adequacy and availability of drugs/medical supplies and kits		
Identify the health workers with midwifery skills for childbirth care (number and list) <i>Norm: 1 per 5000 population</i>		
Ability of facility and staff to provide; Use the following signal function for monitoring:		
Normal childbirth care <ul style="list-style-type: none"> ▪ Active management of third stage of labour ▪ Use of Partograph ▪ Initiation of breastfeeding within 1 hour Basic Obstetric Care <ul style="list-style-type: none"> ▪ antibiotics (intravenous or by injection) ▪ oxytocic drugs ▪ anticonvulsants ▪ manual removal of placenta ▪ removal of retained products of conception ▪ assisted vaginal delivery Comprehensive obstetric care <ul style="list-style-type: none"> ▪ Caesarean section ▪ blood transfusion 		
Identify distances from local/camp facility to obstetric and neonatal services		
Identify distances to emergency obstetric and newborn care services		
Identify feasible transport options for referral care		
Additional rations of food and drinking water for pregnant and lactating women		
Means for information on the availability of services		
Means for birth preparedness and emergency plan and other health IEC		



Appendix 3. Emergency Health Kits for Maternal and Newborn Health

Scenario	Care	Emergency Health Kits	Number Needed	Comments		
<p>Scenario 1: Immediate needs following the crisis</p> <p>No facility and/or a small number of health care providers</p> <p>Most deliveries conducted by relatives or traditional providers</p> <p>For use at community level</p>	<p>Basic care for delivery</p>	<p>The Interagency Emergency Health Kit 2006 (IEHK formerly NEHK 98) Basic Kit (19) + Supplementary kit (1) AND Inter-Agency Reproductive Health (IA-RH) Sub Kit 2: Clean delivery These kits have two parts: Part 2A is distributed to all women more than six months pregnant. Part 2B: Equipment for birth attendants.</p> <p>Sub kit 2: clean delivery should not be confused with sub kit 6: clinical delivery</p>	<p>Basic kit for 10,000 persons for 3 months</p> <p>Supplementary kit is for 10,000 persons for 3 months</p> <p>Each sub kit 2A has 200 individually packed delivery sets</p>	<p>For 100 deliveries will occur in 3 months, 100 in next 3 months</p>	<p>Note: IEHK alone may not be enough for MNH care and should be supplemented by IA-RH kits.</p> <p>No disposable delivery kit in IEHK</p> <p>Note: no oxytocin available in sub kit 2</p> <p>One sub kit 2B has contents for 5 birth attendants</p>	<p>IEHK can be ordered from IDA Foundation P.O. Box 37098, 1030 AB Amsterdam, The Netherlands Tel: +31 20 403 30 51 Fax: +31 20 403 18 54 email: info@ida.nl</p> <p>IA-RH kits can be ordered from the following</p> <p>UNFPA/HRU 220 East 42nd Street New York, NY 10017 USA tel: +1 212 297 5245 fax: +1 212 297 4915 email: hru@unfpa.org website: www.unfpa.org</p>
<p>Scenario 2: When skilled attendants are available</p>	<p>Basic obstetric care + stabilize women with complications and referral</p>	<p>All the above AND IA-RH sub kits: 6: Clinical Delivery Assistance 8: Management of Complications of abortion</p>	<p>For 30,000 persons for 3 months: 15% deliveries will happen in the health facility, hence there must be equipment for 45 deliveries</p>	<p>1 sub kit has contents for 40-45 women</p>	<p>Depending on delivery facility in the area the number of kits required would be assessed.</p>	
<p>Scenario 3: For use at Referral Hospital level</p>	<p>Comprehensive obstetric care including normal delivery, emergency care, post abortion care Neonatal care</p>	<p>All the above AND IA-RH sub kits: 10: Vacuum extraction 11: Referral level (part 11A and 11B) surgical/obstetric kit and 12: Blood transfusion</p> <p>Drugs and disposable equipment for caesarean sections, resuscitation of mothers and newborn babies, treatment of sexually transmitted infections, and complications of pregnancy and delivery</p>	<p>For 150,000 people for 3 months surgical/obstetric care</p> <p>5% of pregnant women may need caesarean section, assuming that 40% reaches hospital in time, 30 additional women will need this care</p>	<p>1 sub kit will have contents for 30 women</p>		<p>UNFPA/HRU 11-13, chemin des Anémones 1219 Chatelaine, Geneva Switzerland tel: +41 22 917 83 14 fax: +41 22 917 80 16 email: doedens@unfpa.org</p> <p>Kits can also be directly ordered from:</p> <p>UNFPA Procurement Services Section Midtermolen 3 2100 Copenhagen Denmark tel: +45 3546 7368/7000</p>



Additional information

Clinical Practice guidelines

World Health Organization, *Pregnancy, Childbirth and Postpartum and Newborn Care: A Guide for Essential Practice*, 2003 http://www.who.int/making_pregnancy_safer/publications/PCPNC_2006_03b.pdf

World Health Organization, *Managing Complications in Pregnancy and Childbirth. A Guide for doctors, midwives and nurses*, 2003 http://www.who.int/making_pregnancy_safer/publications/archived_publications/mcpc.pdf

World Health Organization, *Managing Newborn problems. A guide for doctors and nurses. World Health Organization*, 2003
http://www.who.int/making_pregnancy_safer/publications/archived_publications/mnp.pdf

World Health Organization, *Integrated Management of Pregnancy and Childbirth (IMPAC) WHO Recommended Interventions for Improving Maternal and Newborn Health*, 2007.
http://whqlibdoc.who.int/hq/2007/WHO_MPS_07.05_eng.pdf

Programming Guidelines

Interagency (WHO, UNFPA, UNHCR), *Reproductive Health in refugee situations*, United Nations High Commissioner for Refugees, 1999
http://www.who.int/reproductive-health/publications/interagency_manual_on_RH_in_refugee_situations/full_text.pdf

Inter-agency Working Group (IAWG) for Reproductive Health in Crises, *Corrections to the Inter-agency Field Manual*, 2007. www.rhrc.org/iawg/

World Health Organization, *Reproductive Health during Conflict and Displacement; A guide for programme managers*, World Health Organization, 2000
http://www.who.int/reproductive-health/publications/conflict_and_displacement/pdf/conflict_displacement.pdf

Women's Commission for Refugee Women and Children/RHRC Consortium, *Field-Friendly Guide to Integrate Emergency Obstetric Care in Humanitarian Programs*, 2005. http://www.rhrc.org/pdf/EmOC_ffg.pdf

Emergency Health Kits

WHO, *The Interagency Emergency Health Kit 2006*, 2006
http://www.who.int/hac/techguidance/ems/WHO_PSM_PAR_2006.4.pdf

UNFPA and the Inter-agency Working Group on Reproductive Health in Refugee Situations, *Reproductive Health Kit for Emergency Situations*, (revised edition) 2006. www.rhrc.org/pdf/rhrkit.pdf

Additional Suggested Readings

Other Guidelines on maternal and newborn health: http://www.who.int/making_pregnancy_safer/publications/en/

