5.2 WATER, SANITATION AND HYGIENE
This chapter of the *Emergency Field Handbook* is a guide on how to implement the water, sanitation and hygiene components of the Core Commitments for Children in Emergencies. There is practical guidance on what safe drinking water is and how to help families gain access to it in an emergency. Also covered are basic purification methods and guidance on providing families with water collecting and storage containers. The key hygiene-related messages are outlined, with guidance on how to communicate these messages to affected populations. The chapter also covers how to address basic sanitation in the early days of an emergency, including such topics as provision of UNICEF’s basic family and community sanitation supplies and general guidance on the types of latrines that may be needed.
Core Commitments for Children in Emergencies: Water, sanitation and hygiene

To ensure the provision of safe water and proper sanitation for children and women, UNICEF, in collaboration with partners, will:

First six to eight weeks

1. Ensure the availability of a minimum safe drinking water supply, taking into account the privacy, dignity and security of women and girls. See topics 5–11

2. Provide bleach, chlorine or water purification tablets, including detailed user and safety instructions in the local language. See topic 9

3. Provide jerrycans, or an appropriate alternative, including user instructions and messages in the local language on handling of water and disposal of excreta and solid waste. See topics 11 and 17

4. Provide soap and disseminate key hygiene messages on the dangers of cholera and other water- and excreta-related diseases. See topics 12–14

5. Facilitate safe disposal of excreta and solid waste by providing shovels or cash for contracting local service companies spreading messages on the importance of keeping excreta (including infant faeces) buried and away from habitations and public areas; disseminating messages on disposal of human and animal corpses; and giving instructions on and support for construction of trench and pit latrines. See topics 15–21
Beyond initial response

6. Make approaches and technologies used consistent with national standards, thus reinforcing long-term sustainability.

See topic 22

7. Define UNICEF’s continuing involvement beyond the initial response by:
   - Establishing, improving and expanding safe water systems for source development, distribution, purification, storage and drainage, taking into account evolving needs, changing health risks and greater demand.
   - Providing a safe water supply and sanitation and hand-washing facilities at schools and health posts.
   - Supplying and upgrading sanitation facilities to include semi-permanent structures and household solutions, and providing basic family sanitation kits.
   - Establishing regular hygiene promotion activities.
   - Planning for long-term solid waste disposal.

See topic 23
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1. Priority action checklist

- Conduct a rapid assessment.
- Contact government and partners to assess water and environmental sanitation needs.
- Provide technical support to government and partners in siting new camps for the displaced and in the layout of water and sanitation facilities.
- Assess staffing requirements and recruit accordingly.
- Arrange for adequate funding, following UNICEF guidelines.
- Ensure safe drinking water. Organize local action if needed, such as trucking in water.
- Provide adequate family water kits, water purification supplies and other supplies for household-level sanitation.
- Based on demographic data, calculate water collection and storage needs and provide adequate jerrycans or appropriate alternatives.
- Promote hygiene by providing soap and issuing messages on preventing and treating diarrhoea, cholera and shigella.
- Identify and provide suitable latrine facilities.
- Facilitate safe excreta and solid waste disposal.

2. Rapid assessment

A rapid assessment should be developed and implemented as soon as possible in an emergency. A rapid assessment matrix is available for reference on the Emergency Field Handbook CD-ROM. Additional tools can be found on the Evaluation and Emergencies portals of the UNICEF Intranet.

For a list of questions to ask during the initial rapid assessment to be conducted in the first 48–72 hours, see 'The initial assessment' chapter.

For detailed guidance on implementing and managing a rapid assessment, see the 'Assessment and monitoring' chapter.

3. Water, sanitation and hygiene in emergencies: An overview

Water and sanitation are critical for survival in the initial stages of an emergency. People in emergency situations are generally much more susceptible to illness and death from disease, often caused by a lack of sanitation, inadequate water supplies and poor hygiene. Diarrhoea and infectious diseases transmitted from faeces to mouth are the most significant diseases resulting from poor water and sanitation.
The main objective of water supply and sanitation programmes in emergencies is to reduce the transmission of diseases from faeces to mouth through the promotion of good hygiene practices, the provision of safe drinking water and the reduction of health risks related to poor sanitation.

This chapter provides an overview of the key early action that needs to be taken to help UNICEF meet its water- and sanitation-related Core Commitments for Children in Emergencies. It provides non-specialist staff with the information they need to consult more effectively by telephone with technical experts. Although UNICEF may not be directly involved in some of the activities described in the chapter (but instead supports them in working with local and international implementing partners), its guidance, coordination and technical oversight are essential in order to ensure standards and policy guidelines, and the quality of water, environment and sanitation interventions.

See ‘Emergency WES Resource Kit’, a compendium of UNICEF and other resources on water and sanitation in emergencies.

4. UNICEF’s role and partners

During emergencies, UNICEF is committed to meeting children’s rights to water and sanitation, whether directly or through implementing partners. UNICEF is often called upon to take the lead on behalf of the UN and non-governmental organizations (NGOs) in water, sanitation and hygiene programmes in emergency situations. In this, it is responsible for coordinating the work of the various UN agencies to see that essential needs are met and for supporting related government institutions to coordinate the emergency response whenever the UN and other implementing partners are involved.

Although UNICEF’s water and sanitation role in emergencies varies from country to country, its direct contribution is typically to:

- Restore water sources.
- Truck water in if necessary.
- Provide technical expertise to ensure rapid response standards and policy guidelines are followed.
- Provide water containers and water purification mechanisms.
- Make latrines and sanitation services available.
- Make sure that hygiene and sanitation supplies are available.
- Prepare and disseminate information on safe water, sanitation and hygiene.
- Order additional supplies and equipment and oversee their distribution and use.
- Monitor and follow through with implementing partners. On emergency water, sanitation and hygiene projects, UNICEF typically works with the

Although some basic emergency response actions can be taken by non-specialists, every effort should be made to find and recruit experienced water and sanitation professionals as early as possible.

What to do

☐ Involve UNICEF’s water, environment and sanitation programme officer in the country immediately; this person should take the lead in implementing at once the steps required to support the emergency response.

If no officer is available

☐ If there is no Water and Environmental Sanitation Section in the country office, the representative and senior programme officer should contact the regional office to identify suitable candidates from a neighbouring country, the regional office, or elsewhere.

☐ Look for experienced staff to take on key responsibilities in medium- and large-scale emergencies.

5. Ensuring women’s and girls’ safety, dignity and privacy

In most emergencies the responsibility for collecting water falls to women and children. Women and adolescent girls can be vulnerable to sexual violence or exploitation when using communal water and sanitation facilities. Several steps can be taken to reduce this risk.

What to do

☐ Encourage women’s participation in water supply and sanitation programmes wherever possible. The equitable participation of women and men in planning, decision-making and local management will help ensure that the entire group has safe and easy access to water supply and sanitation services, and that services are equitable and appropriate.

☐ Put latrines in places that reduce the vulnerability of women and girls to attack, especially at night. Where possible, communal latrines should be provided with lighting or families provided with torches.
Seek the input of the community to enhance the safety of users.  
(See topic 18 for more on siting of latrines.)

Find ways to ensure that women feel, and are, safe using the toilets provided.

Allow for sufficient bathing cubicles when communal bathing facilities are necessary, with separate cubicles for males and females.

6. Safe drinking water: An overview

In emergencies, clean, safe water for drinking, cooking and for personal hygiene is critical to ensuring health and well-being, especially of children and women. The following steps give a general picture of what needs to be done.

What to do

In all cases

- Provide sufficient supplies of safe water for feeding centres, communal kitchens, health clinics, etc., and train staff to prevent contamination.
- Facilitate the provision of minimum quantities of safe water for drinking, cooking and personal hygiene to those affected, displaced or not, as long as supply mechanisms are disrupted.
- Provide suitable containers for collecting and storing water.
- Immediately facilitate bacteriological water testing wherever contamination is suspected or diarrhoea is present.
- Promote conservation of available supplies and recycling.
- Promote community monitoring of the condition and use of water and sanitation facilities.
- Keep all pumps and delivery systems working.

If wells are reduced or insufficient

- Promote expert surveys.
- Collect rainwater where possible – this is the first option if it rains.
- Deepen existing wells and sink new wells where appropriate.

If surface water is reduced or dried up

- Protect and conserve available surface water by controlling access and constructing small dams, retention pits, etc.

If wells are blocked, damaged or contaminated

- Clean or re-sink when possible, then pump out and disinfect.
- Build replacements if needed.
If piped distribution systems have been damaged
square
- Set up standpipes and/or distribution tanks as immediate, temporary measures.
- Repair and disinfect system based on expert surveys.

If available water is unsafe
square
- Collect rainwater where possible.
- Search for alternative sources (especially groundwater).
- Treat unsafe water until better-quality water is available.

As a last resort
square
- Deliver supplies by truck to ensure survival until other sources can be found, water piped or the population moved.
- Set up storage tanks at distribution centres.

What to remember
square
- The minimum water requirement for drinking, cooking and personal hygiene in any household is 15 litres per person per day.
- Springs may be considered as an alternative supply. In most cases only disinfection is required.
- It is the presence of faecal coliforms (bacteria that reside in the colon) in a water supply that shows it has been contaminated by human or animal faeces. Concentrations are usually expressed per 100 ml of water. As a rough guide:
  0–10 faecal coliforms/100 ml = reasonable quality
  10–100 faecal coliforms/100 ml = polluted
  100–1,000 faecal coliforms/100 ml = dangerous
  1,000 faecal coliforms/100 ml = very dangerous

7. Family water kit

The rapid distribution of family water kits can help families have water that is safe for drinking, cooking and personal hygiene in the first days and weeks after an emergency hits. The family water kit is good for 10 families for one month. It is one of the key emergency supplies.
Table 21: Family water kit*

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
<th>Supply Catalogue number</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>10 litre collapsible container PV/PE</td>
<td>5007310</td>
</tr>
<tr>
<td>10</td>
<td>14 litre bucket with lid, HDPE</td>
<td>5007315</td>
</tr>
<tr>
<td>50</td>
<td>Wrapped 110 g bar of soap</td>
<td>0552000</td>
</tr>
<tr>
<td>10</td>
<td>33 mg water purification tablets, pack of 50</td>
<td>1588355</td>
</tr>
</tbody>
</table>

*The Supply Catalogue number for the entire kit is 9901100.

Note: flocculation and disinfectant powder for treating turbid water can be ordered separately from the catalogue (item number 5007321).

What to do
- Calculate the number of family water kits needed, based on an estimate of the number of affected families.
- Find out how many family water kits have been stocked by the office or are otherwise available in the country, the UNICEF regional office or regional supply hubs.
- Procure elements of the kit locally or the kit in its entirety from Supply Division, Copenhagen, or elsewhere. See the 'Supply and logistics' chapter for more on local procurement and procurement through Copenhagen.
- If they are not yet available in the local language, have instructions for using the kit translated into the local language and printed at low cost.

What to remember
- The development of locally appropriate family water kits is a critical step in preparedness. Instructions for using the kit, in the local language or using pictographs, can be developed and printed ahead of time, along with key hygiene messages.
- With gross dimensions of 80 cm x 40 cm x 50 cm, the family water kit is very bulky; shipment by sea freight is recommended when possible. Cost: approximately US$92.00, volume: 0.160 m³, weight: 27 kg. See the 'Supply and logistics' chapter for more on how to order supplies.
- Provide bleach, chlorine or water purification tablets, including detailed user and safety instructions in the local language.

8. Trucking water

Trucking water (also called water tankering) to meet a community’s water needs during an emergency should be considered a short-term solution, to
be used only as long as it takes to pipe water in, develop other sources or move the population. However, it is sometimes the only way to ensure that people have safe drinking water, and is often unavoidable in the early stages of an emergency or when a population is mobile. Water tankers may be available from the military, fire services, dairies or bottled drink factories, including breweries; petrol and oil tankers are difficult to clean adequately before using.

What to do
- Calculate the amount of water the target population needs. Given normal minimum requirements of 15 litres per person per day, for example, a population of 1,000 would need 15,000 litres per day.
- Identify available water, milk or other tankers, or flatbed trucks that can be made into tankers by fitting them with bladder or rigid tanks.
- Choose the most reliable tankers and drivers available.
- Ensure that enough drivers are available to cover absence for sickness and breaks. Avoid overworking drivers.
- Keep a logbook for each tanker.
- Provide a tank at the destination so that tankers can discharge rapidly.
- Provide hard and well-drained surfaces at tanker filling and discharge points, as well as enough space for tankers to wait in line and turn around.
- Provide pumps for filling and emptying tankers rapidly.
- Chlorinate water in tankers during filling and monitor free chlorine residual during discharge.

What to remember
- Trucking water can be expensive and impractical and should be avoided if there is another option. A single load of a water tanker with a capacity of 8,000 litres can meet the normal minimum requirements (15 litres) of 530 people for a single day.
- Water trucking is an option only if there are good or serviceable roads.
- Water trucking can be easily disrupted by insecurity, strikes and bad road conditions.

Priority in trucking water should be delivery to community services (hospitals, health posts and schools), after which water should be delivered to public distribution points.

9. Treating water: Household level
The purpose of purifying water is twofold: to remove, as much as possible, contaminating solids (by the process of precipitation, coagulation and filtration), and to remove or destroy (through disinfecting) disease-causing organisms in
the water. UNICEF has committed to providing bleach, chlorine and water purification tablets as well as instructions for their use at the onset of an emergency to help families quickly obtain water that is safe for drinking, cooking and hygiene.

In the early days of an emergency, tablets or powders can be used for treatment at the household level while longer-term solutions are being put in place.

Surface water is particularly dirty and almost always needs to be treated. If the water source is clean (clear, not dirty), only disinfection is necessary.

What to do

☐ Estimate the number of families who may need household purification supplies.

☐ Order and distribute UNICEF’s family water kit (or its locally designed equivalent) if it can be made available quickly. The family water kit contains the necessary water purification supplies, including containers and tablets. *(See topic 7)* One family water kit is good for 10 families for one month.

☐ If family water kits are not available, estimate the number of water purification tablets or Chlor-Floc sachets that are needed.

☐ Confirm specific quantities of water that can be purified per dose based on instructions for the actual product used.

☐ Procure the products locally or through Supply Division, Copenhagen.

What to remember

☐ Surface water is particularly unsafe and must be purified.

☐ Even where a protected water source is in use, it is always best to disinfect the water and store it in the household.

☐ If people are not accustomed to using water disinfection products, it is very important to provide written or pictogram instructions along with oral instructions and information.

☐ Bleaching powder and chlorine tablets will only disinfect the water; they will not remove solids.

☐ Chlor-Floc sachets purify water, disinfecting and removing solids.

☐ All chemicals and solutions should be stored in tightly closed containers made of dark glass, ceramic or plastic (not metal) and kept in a cool, dark place.

☐ Other household treatment options include boiling water, ceramic filters and solar disinfection.
### 10. Key water supplies for camps and communities

Table 22: Commonly ordered items from Supply Division, Copenhagen.

<table>
<thead>
<tr>
<th>Items</th>
<th>Source</th>
<th>Specifications</th>
<th>Catalogue number</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water storage supplies</strong></td>
<td>Copenhagen</td>
<td>Water tank, collapsible, 1.5 m³ bladder</td>
<td>0005832</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Water tank, collapsible, 5,000 l (5 m³) with distribution kit</td>
<td>5675000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Water tank, collapsible, 10,000 l (10 m³)</td>
<td>0005834</td>
</tr>
<tr>
<td><strong>Water trucking supplies</strong></td>
<td>Copenhagen</td>
<td>Water tank, modular rigid, PVC/PE set of 10 x 1 m³ (1,000 l) each (pump separate, see below)</td>
<td>0005847</td>
</tr>
<tr>
<td><strong>Water distribution supplies</strong></td>
<td>Copenhagen</td>
<td>Hose, lay-flat, 50 m long, 50 mm diameter</td>
<td>0008028</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hose, lay-flat, 25 m long, 75 mm diameter</td>
<td>0008029</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Water distribution kit, 6 taps</td>
<td>0005831</td>
</tr>
<tr>
<td><strong>Water filtration supplies</strong></td>
<td>Copenhagen</td>
<td>Water purification unit, skid, 5 m³ (5,000 l/hr @ 20 m, TMH)</td>
<td>0005846</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Water purification unit, skid, 15 m³ (15,000 l/hr @ 30 m, TMH)</td>
<td>0005856</td>
</tr>
<tr>
<td>Local, regional, Copenhagen</td>
<td></td>
<td>Filter, drinking, candle, 10–80 l/day, stainless steel</td>
<td>5619902</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spare set of 4 candles</td>
<td>5619903</td>
</tr>
<tr>
<td><strong>Water purification supplies</strong></td>
<td>Local, regional, Copenhagen</td>
<td>Aluminium sulfate in granules 17–18%</td>
<td>0000571</td>
</tr>
<tr>
<td></td>
<td>Copenhagen</td>
<td>Calcium hypochlorite (stable bleaching powder) 65–70%</td>
<td>0000570</td>
</tr>
<tr>
<td><strong>Water quality testing supplies</strong></td>
<td>Regional, Copenhagen</td>
<td>Colorimeter, digital, pocket, 0–2 mg/l chlorine (chlorination testing kit)</td>
<td>0000538</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If required order separately: DPD 1 for free chlorine</td>
<td>0000550</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DPD 4 for total chlorine</td>
<td>0000552</td>
</tr>
<tr>
<td><strong>Water pumping supplies</strong></td>
<td>Copenhagen</td>
<td>Pump centrifugal, diesel, 5 m³/hr @ 20 m TMH</td>
<td>0009100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pump centrifugal, diesel, 10 m³/hr @ 20 m TMH</td>
<td>0009101</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pump, dewatering, submersible, electrical</td>
<td>0008090</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Generator set, diesel, mobile, 8 kVA*</td>
<td>1800342</td>
</tr>
<tr>
<td><strong>Well construction supplies</strong></td>
<td>Regional, Copenhagen</td>
<td>Electrical distribution box, portable, with assorted cables</td>
<td>5035010</td>
</tr>
<tr>
<td></td>
<td>Local, regional, Copenhagen</td>
<td>Water quality test kit, OXFAM DELAGUA, portable</td>
<td>0008229</td>
</tr>
<tr>
<td></td>
<td>Copenhagen</td>
<td>Generator set, soil, manual, ergonomic</td>
<td>0005430</td>
</tr>
</tbody>
</table>

*Hazardous material. Transport certificate required.
See the online Supply Division Catalogue for the complete list of water and sanitation items available (www.supply.unicef.dk/Catalogue/).

11. Collecting and storing water at the household level

In emergencies, UNICEF is committed to providing jerrycans (or suitable alternatives such as plastic buckets or barrels) to affected families who need a way to collect and store water for washing, cooking and bathing. Each household should have at least two clean water collection containers of 10–20 litres, plus enough clean water storage containers to ensure there is always water in the household. The amount of storage capacity required depends on the size of the household and the consistency of water availability. For example, a storage capacity of approximately four litres per person would be appropriate for situations where there is a constant daily supply.

Collapsible containers and buckets are included in the family water kit and can be provided in this way. (See topic 7 for more on the family water kit.)

What to do

☐ Based on demographic data or rough population estimates, calculate the number of families who are in need of water collection and storage containers. In a camp setting, whichever agency is in charge of setting up or running the camp should have a working estimate of the number of families and total population of the camp. If people are still living at home, the local authorities should know how many families are being targeted.

☐ Ensure that each family has at least two water collection containers of 10–20 litres.

What to remember

☐ Rigid high-density polyethylene tanks (capacity of 500–2,000 litres) are useful for water storage at community, school and health posts.

☐ Water containers should be covered.

☐ Cups or other utensils should not be dipped into disinfected water.
12. Soap, bathing and laundry
Provision of soap is extremely important in emergencies because effective hand-washing using soap (or an alternative) is a key way to prevent water-borne diseases and infections. Each person needs 250 g of soap per month for personal hygiene.

**What to do**
- Provide the family water kit, which contains 50 bars of soap for 10 families, or five bars of soap per family.
- If provision of the family water kit is not feasible, provide soap separately, preferably through local procurement.
- Where communal bathing facilities are necessary, make sure there are sufficient bathing cubicles available, with separate cubicles for males and females.
- Where communal laundry facilities are necessary, make sure there is at least one washing basin per 100 people and private laundering areas available for women to wash and dry undergarments and sanitary cloths.

13. Key hygiene-related messages
As part of the Core Commitments for Children in Emergencies, UNICEF has committed to making sure the following basic messages (or appropriate local variations) are conveyed to the affected population.

**Diarrhoea prevention and treatment**

**What to remember**

**To prevent diarrhoea**
- All faeces should be disposed of in a latrine or toilet.
- Good hygiene practices protect against diarrhoea. Hands should be thoroughly washed with soap and water, or ash and water, after contact with faeces and before touching food or feeding children.

**To treat diarrhoea**
- Diarrhoea kills children by draining liquid from the body, thus dehydrating the child. As soon as diarrhoea starts, it is essential that the child be given extra fluids along with regular foods and fluids.
- A child’s life is in danger if there are several watery stools within an hour or if there is blood in the faeces. Immediate help from a trained health worker is needed.
Breastfeeding can reduce the severity and frequency of diarrhoea.
A child with diarrhoea needs to continue eating regularly. While recovering from diarrhoea, a child needs at least an extra meal a day for three weeks.
If the child is dehydrated with severe or persistent diarrhoea, only oral rehydration solution or medicines recommended by a trained health worker should be used. Other diarrhoea medicines are generally ineffective and could be harmful to the child.

Hygiene promotion

What to remember
- All faeces should be disposed of safely. Using a toilet or latrine is the best way.
- All family members, including children, need to wash their hands thoroughly with soap and water, or ash and water, after contact with faeces, before touching food and before feeding children.
- Washing the face with soap or water every day helps to prevent eye infections. In some parts of the world, eye infections can lead to trachoma, which can cause blindness.
- Only water that is from a safe source or is purified should be used. Water containers need to be kept covered to keep the water clean.
- Raw or leftover food can be dangerous. Raw food should be washed or cooked. Cooked food should be eaten without delay or thoroughly reheated.
- Food, utensils and food preparation surfaces should be kept clean. Food should be stored in covered containers.
- Safe disposal of household refuse helps prevent illness.

Cholera and shigella prevention
There are two types of acute diarrhoea emergencies: cholera (acute watery diarrhoea) and shigella dysentery (acute bloody diarrhoea). Both are transmitted by contaminated water, unsafe food, dirty hands and vomit or stools of sick people. Other causes of diarrhoea may produce severe illness for the patient but will not produce outbreaks that threaten the community.
What to remember

How the general population can avoid cholera and shigella
- Wash hands with soap before and after using toilets, before preparing food and before eating.
- Boil or disinfect water with chlorine solution.
- Eat only freshly cooked food.
- Do not defecate near water sources.
- Use latrines and keep them clean.

How health workers, community members, parents and caregivers can detect cholera and shigella

Table 23: Symptoms of cholera and shigella

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Cholera</th>
<th>Shigella</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>Acute watery diarrhoea</td>
<td>Acute bloody diarrhoea</td>
</tr>
<tr>
<td>Stool</td>
<td>&gt;3 stools per day, watery, like rice water</td>
<td>&gt;3 stools per day with blood or pus</td>
</tr>
<tr>
<td>Fever</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Abdominal cramps</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Vomiting</td>
<td>Yes, a lot</td>
<td>No</td>
</tr>
<tr>
<td>Rectal pain</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

For health workers, if cholera or shigella is suspected
- Take stool samples and send them for immediate analysis.
- Do not wait for laboratory results to start treatment and to protect the community. Not all the cases need to be confirmed by a laboratory.
- Cholera outbreaks require immediate attention according to standard protocols.

See the ‘Health and nutrition’ chapter for more information on responding to cholera outbreaks.

Human or animal corpse disposal
Corpses – both human and animal – left undisposed of or in water pose health hazards mandating immediate action.

What to remember
- Cremation and burial are hygienic ways of disposing of human and animal corpses.
14. How to communicate key messages

Messages on the importance of hygiene will have no effect if they do not reach or are not accepted by the affected community. It is extremely important that messages be discussed with vulnerable groups, especially women and children.

What to do

- Establish and train a team that is familiar with local practices and social structures.
- Use the local language or pictograms if possible.
- Keep messages clear and simple.
- Work through existing social structures.
- Consider existing culture, practices and gender roles.
- Reach people during times of emergency at clinics, feeding centres, distribution centres, water collection points, etc.
- Use various ways of reaching people that can include megaphones, radio broadcasts, announcements, meetings, posters, home visits, large and small group discussions, local newspapers and community newsletters, as well as street theatre, slides, films, video presentations, games, drama, songs, role-play and simulation, if possible and appropriate.

What to remember

- It is important not to blame the community for previous poor hygiene practices.


15. Sanitation: An overview

Sanitation includes excreta disposal, vector control, solid waste disposal and drainage. Infectious diseases and pathogens in excreta are a risk to others who may come in contact with waste. In addition, excreta can provide a breeding ground for vectors that can then transmit disease. During emergencies, and especially in camps for displaced persons, shelters or any type of temporary refugee location, sanitation and excreta disposal usually become a major problem. Large concentrations of people in one area,
especially a confined area such as a camp, create an immediate sanitation problem that tends to aggravate exponentially if urgent measures are not taken.

The aim of a safe excreta disposal programme is to keep the environment free from contamination by human faeces. UNICEF has committed to providing basic assistance in the early stages of an emergency to help people dispose of excreta safely, at both the household and community or camp levels.

A minimum package of household-level sanitation assistance should always be considered for people living in temporary shelters or tents. UNICEF has undertaken to supply shovels for households to bury excreta, garbage and other solid waste away from homes and public places, and to provide instructions in the local language on safe disposal of excreta and human and animal corpses.

**What to do**

**At the household level**
- Estimate the number of households in need of shovels for burying excreta away from homes and public places.
- Provide shovels either through the basic family sanitation kit, which is available from Copenhagen through offshore procurement, or by local procurement.
- Provide instructions on safe excreta disposal.
- Provide family sanitation supplies.

**At the community level**
- Pay local service companies to dispose of solid waste.
- Provide instructions for and support construction of trench and pit latrines. *(See topic 19 for more details on trench and pit latrines.)*
- Provide messages on the importance of burying faeces away from homes and public areas as well as information on safe disposal of human and animal corpses.

**What to remember**
- Safe disposal of human excreta is more important than disposal of animal waste, because human excreta transmits more diseases affecting humans. Human faeces are much more dangerous than urine, which poses little risk.
- Children’s faeces are more dangerous than adults’ due to the higher concentration of pathogens.
16. Family sanitation supplies

Basic family sanitation supplies are stocked by UNICEF Supply Division as separate items: squatting plate, folding shovel and plastic sheeting. These items must be supplemented with provision of community or camp water supplies, latrine construction, solid waste disposal and hygiene promotion.

Table 24: Family sanitation supplies

<table>
<thead>
<tr>
<th>Item</th>
<th>Supply Catalogue number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic sheeting (4 x 5 m sheets)</td>
<td>5086011</td>
</tr>
<tr>
<td>Polyethylene rolls (4 x 50 m)</td>
<td>5086010</td>
</tr>
<tr>
<td>Round point shovel, folding</td>
<td>5007330</td>
</tr>
<tr>
<td>Baby hygiene kit</td>
<td>0000233</td>
</tr>
<tr>
<td>Adult hygiene kit</td>
<td>0000235</td>
</tr>
<tr>
<td>Tarpaulin, reinforced, polyethylene roll, 4 x 50 m (plastic sheeting) for latrine superstructure</td>
<td>5086010</td>
</tr>
<tr>
<td>Squatting plate, plastic, 60 x 80 cm</td>
<td>5007325</td>
</tr>
<tr>
<td>Mould, plastic, for concrete latrine slab fabrication</td>
<td>0005850</td>
</tr>
</tbody>
</table>

What to remember

- These supplies are not stocked as a kit per se, but can be ordered as separate items and shipped together.
- Family sanitation supplies can be extended with baby or adult hygiene kits, which are produced to order and contain items such as soap, shampoo, toothbrushes, laundry detergent, cloth diapers, etc.

17. How to dispose of excreta

A rapid and effective response to the disposal of human waste can help prevent the spread of diseases and infections in emergency situations.

What to do

- Ensure full-time supervision of defecation areas by attendants.
- Supply receptacles for anal cleansing materials.
- Ensure that anal cleansing materials are buried or burned in a safe location to avoid creating a health hazard.
- Provide clear instructions in the local language on the use of sanitary facilities.
What to remember

- Establish defecation areas and sanitation systems as quickly as possible.
- Consult the affected community when siting sanitation facilities and involve them in each step.
- Support the government in the coordination of the agencies responsible for camp layout to ensure proper siting of water and sanitation facilities.
- The establishment of defecation areas should consider:
  - Cultural, age, gender and special physical needs.
  - Privacy and safety, especially for girls and women.
  - Ease of use and maintenance.
  - Soil and flooding conditions.
  - Location (distance from users, food storage and preparation areas, settlements and water sources).
  - Odour and insects.
  - Length of use.
  - Cost-effectiveness.
- Supply anal cleansing materials that the local population is accustomed to using.
- Children’s faeces are more dangerous than adult faeces.
- All sanitation programmes must provide hand-washing facilities as close as possible to latrines and should involve hygiene and environmental sanitation education.
- Support should be provided to the training of community- and camp-based organizations in participatory hygiene methods.
- Sanitation efforts will suffer if no local authority and/or community organization is made responsible for the provision and continuance of facilities.

18. Community-level sanitation assistance

In the first 6–8 weeks of an emergency, UNICEF has committed to helping affected communities meet the basic sanitation need to safely dispose of excreta. This is done at both the household and community level, which includes camps for displaced persons or shelters and any type of temporary refugee location. In the early days of an emergency, community-level actions involve finding or building suitable latrines.

What to do

- Ask about local and customary practices.
- Involve community members, especially women, in planning for emergency latrines.
Estimate how many latrines will be necessary to meet minimum standards.

Use disaggregated population data to plan the ratio of women's cubicles to men's (approximately 3:1). Where possible, urinals should be provided for men.

Consult with community members and sanitation experts to decide which types of latrines are suitable in the immediate period.

Procure basic supplies to help communities build latrines. (See Table 24 for some of the basic items available from Copenhagen. For more items, see the online Supply Catalogue.)

Provide easy access to latrines for people living with HIV/AIDS because they frequently suffer from chronic diarrhoea and reduced mobility.

Design facilities and solutions with children in mind, because children's faeces are generally more dangerous than adults'.

What to remember

**Common standards for emergency latrines are as follows**

There should be one latrine for every 20 people, arranged by household. For a displaced population where there are no existing toilets, it is not always possible to provide this immediately. In such cases, a figure of 50 people per latrine can be used, decreasing to 20 people per latrine as soon as possible. Latrines should:

- Be at least 30 m from any groundwater source.
- Be no more than 50 m or a one-minute walk from shelter and sited to minimize threats to users, especially women and girls, day and night.
- Be 1.5 m above the water table.
- Be designed in such a way that they can be used by all people, including children, older people, pregnant women and people with disabilities.
- Allow for disposal of women's sanitary protection, or provide the necessary privacy for women to wash and dry sanitary protection cloths.
- Be easy to keep clean and minimize fly and mosquito breeding.
- Have adequate drainage.

Latrines must have an adequate and regular supply of water, if they use water for flushing, and/or a hygienic seal.

There should be separate facilities for men and women available in camps or for displaced populations.
19. Types of emergency latrines

In the earliest days of an emergency, it is important to isolate excreta. This can be done in different ways, initially through a defecation trench (as an emergency stopgap solution until other latrines are constructed), then with trench and pit latrines.

Before toilets can be constructed, it may be necessary to mark off an area for the creation of shallow trench latrines. This is an emergency measure that is appropriate for only a couple of days. It is inexpensive and easy to dig in most locations using hand tools such as picks and shovels.

Deep trench latrines last longer than shallow trenches and can also be dug by hand. However, digging takes more time unless mechanical excavators can be used. Each trench can last for several weeks. The deep trench latrine might be an appropriate solution for temporary or emergency health centres, crowded centres for displaced persons or refugees or where there is not enough space for sufficient pit latrines, such as a school yard.

What to remember

☐ An emergency sanitation strategy can include construction of two or three types of latrines at the same time. For example, while a defecation field might be used and maintained in the first days, community pit latrines may also be under construction while community members collect information on appropriate family latrines.

20. Pit latrines

The most common excreta disposal system around the world is the family pit latrine. It is also the number one solution in emergencies. The pit latrine consists of a squatting plate (or seal) above a hole in the ground with a superstructure for privacy. Individual families can dig the pit and build the superstructure. These latrines are usually well maintained if used by only one family. Pit latrines can also be used in clusters as communal facilities.

What to do

☐ Find an appropriate area.
☐ Provide families or groups with instructions for digging pit latrines.
☐ Identify a team to assist in digging the trenches if a mechanical excavator will not be used.
Procure necessary tools, such as shovels, boards, rope (to mark off trenches), some type of material to create urinals, and some kind of sheltering material (plastic sheeting or other) to create private places for women and girls.

Use a water-seal latrine where culturally appropriate.

What to remember

- Pit latrines are about 1 m across and 2 m deep.
- The rim of the pit should be raised about 15 cm and cut-off ditches dug to divert any rainwater surface run-off.
- The sides of the pit should be reinforced, perhaps to a depth of 1 m below ground level to prevent collapse.
- When a pit is three-quarters full, it should be filled with soil and the superstructure and squatting plate moved to a new pit.

21. How to manage solid waste

Accumulations of garbage create conditions for the spread of rodent- and insect-borne diseases. Arrangements for storage and regular collection and disposal must be made, with instructions translated into the local language.

What to do

Storage and collection

- For the initial clean-up, mobilize labour and arrange transport to move the waste to selected disposal sites.
- Place metal or plastic containers (e.g., 200-litre oil drums cut in half) in appropriate locations, providing lids if possible and punching drainage holes in the bottom.
- In market areas and large institutions, construct large rectangular bins with sloping floors to allow the garbage to be shovelled out.
- Spray disposal sites with insecticide daily.
- Arrange for the regular – perhaps daily – collection of garbage from all containers.

Large-scale disposal

- Wherever possible, garbage should be buried at designated locations or burned, preferably using incinerators.
Small-scale disposal

- Small-scale disposal, such as in rural areas, can utilize hand-dug pits or trenches.
  - Trenches should typically be 1.5 m wide and 2 m deep.
  - Refuse should be covered with earth at the end of each day to discourage rodents and insects.

Incineration

- Where there is no alternative to dumping garbage in open areas:
  - Fence off an area.
  - Crush tins to prohibit their use by mosquitos for breeding.
  - Burn the waste as quickly as possible.
  - Cover the burned refuse with earth.

What to remember

Storage and collection

- Dogs spread garbage, while free-range goats, pigs and chickens help control it.
- Keep containers covered if possible.
- Give special attention to garbage collection from hospitals, feeding centres and other community service sites.

Large-scale disposal

- Disposal sites should be well away from any dwellings, and preferably fenced off, at least 1 km downwind of major habitations and not close to water sources.
- Dumping should be conducted under supervision, in trenches made in flat areas or other suitable land.
- After being compacted, waste should be covered with at least 50 cm of soil.
- Where space and bulldozers are available, sanitary landfill disposal may be possible.

Small-scale disposal

- When trenches are full to within 40 cm of ground level, fill them with compacted earth and mark the site.

Medical waste

- Medical waste, needles and scalpels should be treated separately, incinerated as quickly as possible and then buried.
22. Planning for long-term sustainability

The primary goal of emergency response is to meet immediate and unforeseen needs. However, emergency programmes can sometimes have a demonstration effect by providing examples of new and low-cost approaches to governments and partners.

What to do

☐ Ensure that all UNICEF-supported emergency interventions conform to national standards where possible and appropriate (e.g., minimum coverage standards, technology standards, contracting norms).

☐ Encourage other support agencies to work with governments and through sectoral coordination mechanisms and to respect national standards.

☐ Use new partnerships and coordination mechanisms established for emergency response to improve sector coordination over the long term.

What to remember

☐ For technologies to be appropriate, they should generally evolve out of the local context and build on local innovations.

☐ Long-term intervention design should adopt a participative approach involving all affected groups in the decision-making process.

☐ Forming water and sanitation committees representative of the group being served, with half of them women, to manage communal facilities such as water points, public toilets and washing areas will ensure representation and promote sustainability.

23. Defining UNICEF’s continuing involvement

Beyond the initial emergency response, UNICEF’s continued work to improve water and sanitation for emergency-affected populations will probably involve longer-term solutions and programme planning; this work will certainly need special expertise and is beyond the scope of the Emergency Field Handbook, which is designed to help non-specialists get early response off to a rapid start. In the Core Commitments for Children in Emergencies, UNICEF has undertaken to improve water and sanitation after the initial emergency period by taking the actions below. References to related material in the Emergency Field Handbook are given where appropriate.
What to do

- Establish, improve and expand safe water systems for source development, distribution, purification, storage and drainage.
- Provide a safe water supply, sanitation and hand-washing facilities at schools and health centres.
- Supply and upgrade sanitation facilities to include semi-permanent structures.
- Supply and upgrade household sanitation solutions; provide family sanitation supplies.
- Establish regular hygiene promotion activities.
- Plan for long-term solid waste disposal.

For additional information on implementation of the above activities, as well as all the areas mentioned in this chapter, see the relevant chapters of UNICEF’s Technical Notes as well as guidelines and sources cited in this chapter.