

Box 9.3 Assessment and treatment of dehydration

Assess the degree of dehydration of someone with diarrhoea using the following guide (WHO, 1991):

Table 9.3 Assessing degrees of dehydration

1. Look at:	Condition	Well, alert	*Restless, irritable	*Lethargic or unconscious
	Eyes	Normal	Sunken	Very sunken and dry
	Tears	Present	Absent	Absent
	Mouth and tongue	Moist	Dry	Very dry
	Thirst	Drinks normally, not thirsty	*Thirsty, drinks eagerly	*Drinks poorly or not able to drink
2.	Lift the skin between two fingers and release	Skin falls back quickly	*Skin falls back slowly	*Skin falls back very slowly
3.	Decide	No sign of dehydration	Two or more signs, including at least one marked*; there is some dehydration	Two or more signs, including at least one marked*; there is severe dehydration

The skin pinch may be less useful in people with marasmus (severe wasting) or kwashiorkor (malnutrition with swelling of the feet, hands and face), or obese people. Tears are a relevant sign only for infants and young children.

Prevention and treatment of dehydration using rehydration drink

To prevent and treat dehydration, give plenty of liquids or rehydration drink. Use small sachets of Oral Rehydration Salts (ORS), if available, for mixing with water. If not available, prepare a rehydration drink as follows:

- To one litre of water add:
 - two level tablespoons of sugar (or honey)
 - ¼ teaspoon of salt
 - ¼ teaspoon of sodium bicarbonate (baking soda).

If there is no baking soda use another ¼ teaspoon of salt. Add a small amount of fruit juice if available. The drink should be no more salty than tears. Sip regularly until urinating is normal. An adult needs at least three litres per day and a child at least one litre or a glass of liquid for each watery stool passed, whichever quantity is the greater.

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activities such as sanitation, water, food, nutrition and shelter. Five of the key indicators of effectiveness of interventions given in Sphere Health Services analysis standard 4 are:

- Decreasing death rate aiming towards less than 1/10 000/day.
- The under-5 mortality rate (U-5MR) is reduced to no more than 2/10 000/day.
- Epidemics/diseases are controlled.
- There is access to adequate water.
- Adequate sanitation facilities are available.

Refer also to Table 1.1 'Crude mortality rates in emergencies'.

9.1.4 Cholera control

Specific action may need to be taken to control particular diseases. Cholera is an important example of a disease which, if left unchecked, can kill many people rapidly.

Facts about cholera

(From Bartram and Howard, 1994)

- The main danger from cholera is rapid dehydration (see Box 9.3). Unless patients are rehydrated quickly they can die, sometimes in a few hours.
- Most cholera cases can be treated successfully with oral rehydration therapy. The few that become severely dehydrated need intravenous fluid initially, and antibiotic treatment.
- Neither vaccination, quarantine, nor travel restrictions prevent cholera from spreading.
- In the long term, improved water supply, sanitation, hygiene and better living conditions are crucial to preventing cholera.
- 90 per cent of cholera cases are mild and therefore may be difficult to distinguish from other cases of acute diarrhoea. Many infected people have no symptoms but **they can be carriers and infect others**.
- Even in a cholera outbreak, more children may die from other types of diarrhoea than from cholera itself.

Cholera in temporary settlements

A plan to cope with a potential cholera outbreak must be considered, and preparations made, in the aftermath of a disaster in a cholera endemic area. During an outbreak of cholera in a camp for displaced people, commonly 1-4 per cent of the population are attacked, of whom about 20 per cent may be expected to be severely attacked and require hospitalization. Use these guideline figures when taking preparatory measures prior to a potential outbreak. Estimate the size of isolation areas needed and the equipment, materials, water supply and sanitation facilities likely to be required. Prepare staff through adequate training. For further guidance see, for example, Hausman

Recognizing cholera

Cholera should be suspected when:

- An adult develops severe dehydration from acute watery diarrhoea, usually with vomiting (see Box 9.3).
- There is a sudden increase in patients with acute watery diarrhoea.

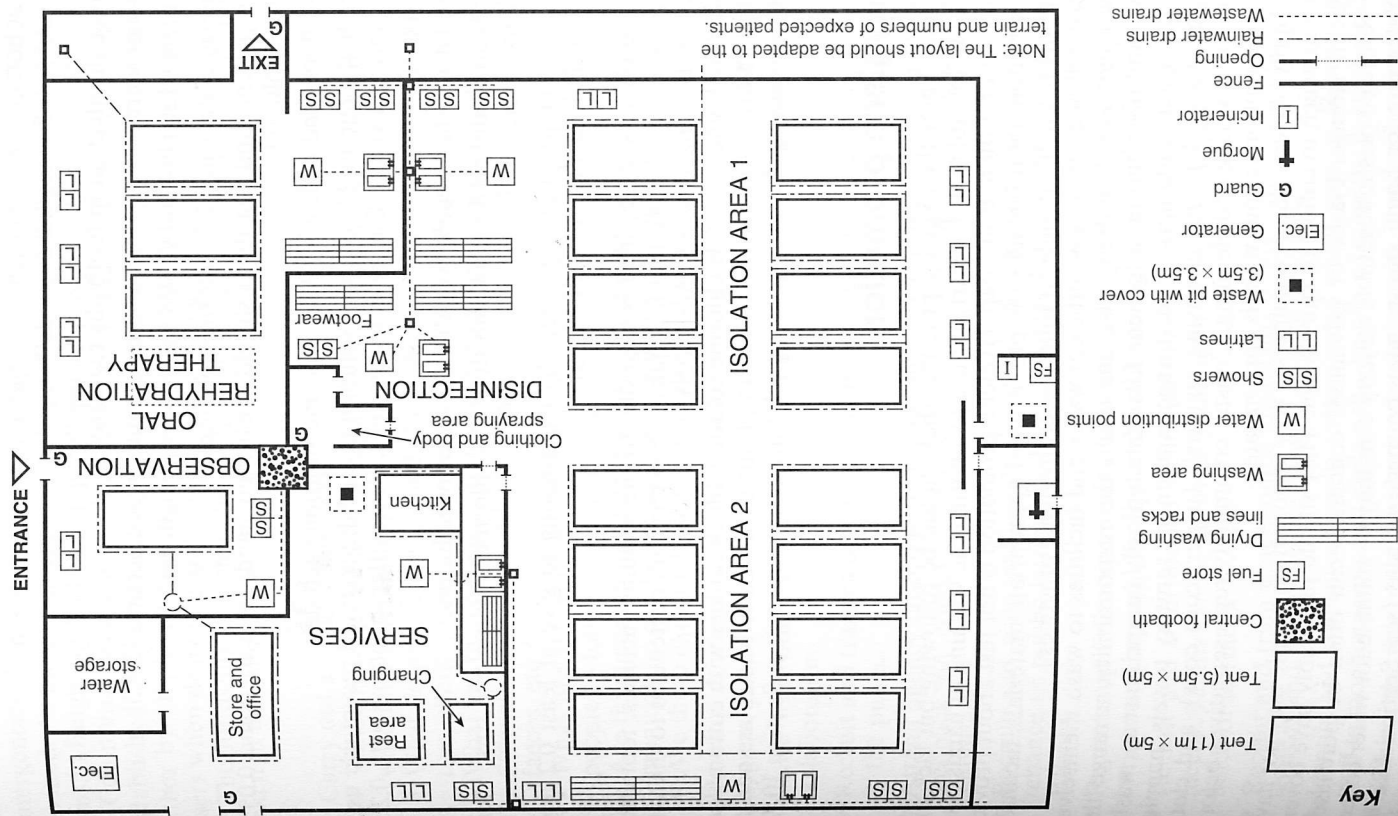
Practical ways to prevent the spread of cholera

Cholera is transmitted by the faecal-oral route. People can be infected but not show any signs of sickness. Their faeces will contain the *Cholera vibrio* bacterium. Without firm action up to 50 per cent of patients with cholera may die. Firm action can reduce this figure to 1–10 per cent of patients. Standard measures used in controlling cholera include:

- Monitor the supply of food, especially at markets, and its preparation.
- Provide safe excreta-disposal facilities, ensure they are used and prevent indiscriminate defecation (see Chapter 10).
- Control excessive numbers of flies, especially around latrines/defecation areas (see Section 10.8).
- Ensure a safe and adequate supply of drinking and washing water (see Chapters 11, 12 and 13).
- Prevent the use of contaminated water sources (see Chapter 11).
- Implement a public cholera information campaign, telling people the measures they can personally take to control transmission (see Section 9.2).
- Establish emergency isolation centres. Isolate and treat severe cases under conditions which treat all wastes before disposal (see below).
- Establish oral rehydration therapy (ORT) centres to rehydrate moderate cases (see Box 9.3).
- Train personnel to recognize cholera symptoms early and to give oral rehydration salt solution (ORS) (see Box 9.3).
- Use patient records to plot outbreaks on a map of the settlement.
- Follow up cases to determine where the patients came from and their living conditions. Contact people who had been in contact with patients and institute preventive measures as necessary.

Figure 9.5 shows the layout of a typical emergency cholera treatment centre. More details on construction are given in Chapter 19. Two points are of particular relevance here:

- Control: access to the centre should be restricted to patients and those giving care. Passage between sections should be through shallow footbaths containing disinfectant placed across doorways. Staff are advised to wear rubber boots or shoes.
- Site: not close to other buildings, but accessible by vehicle. There should be access to a water supply. Allow space for extension if attack rates or popu-



Disinfection

(Note: 0.05% = 500 mg/l; 0.2% = 2000 mg/l)

- Change disinfectant in footbaths regularly.
- Wash new arrivals in 0.05% chlorine solution (see Section 13.3.3).
- Disinfect stretchers and vehicles transporting patients.
- Immerse clothes in 0.2% chlorine solution.
- Staff, patients and guardians should wash their hands with soap and 0.05% chlorine solution.
- Wash floors and beds with 0.2% chlorine solution each day.
- Place half a cup of 2% chlorine solution in each bucket and receptacle used for stools and vomit. Empty in the latrines. Rinse after emptying with 0.2% chlorine solution.
- Wash latrine slabs regularly with 0.2% chlorine solution.
- Wash eating and cooking utensils in 0.05% chlorine solution and rinse them in clean water.
- Ensure water for drinking is safe by chlorinating to give at least 0.2 mg/l residual chlorine (see Section 13.3.3).

The wastewater (sullage) load is high due to the washing facilities, footbaths and general washing down that is required. Pay particular attention to the safe disposal of the sullage (see Section 10.5).

Wash dead bodies with 2% chlorine solution, block orifices with cotton wool soaked in chlorine solution, and wrap in plastic sacks. Bury bodies as soon as possible, explaining the reason for a quick burial to relatives (see Section 10.7).

9.2 Hygiene promotion

People may know the hygienic practices they should be following but lack the means to follow them. It is clearly no use promoting the washing of hands with soap and water if there is no soap. Hygiene promotion is not just about providing information but it includes the provision of appropriate materials, facilities and support to enable people to follow good hygienic practices.

People will need to access sufficient water and facilities to wash themselves and their clothing. If nobody else has taken the responsibility, arrange the purchase and distribution of hygiene kits. Kits typically comprise: soap, washing bowls, water containers, food storage containers, sanitary towels, nappies (or nappy materials), anal cleansing materials (paper, corn cobs), and cloth material for covering and cleaning. Consult community representatives before making assumptions about what is appropriate.

The supply of clean water containers is very important as people may not have anything in which to collect or store water. They should preferably have covers for hygienic storage. Plastic or galvanized containers can often be purchased locally. Recycled plastic vegetable oil jerry cans may be suitable for water collection. Water jars for home storage may be made on site (see Section 13.2.7).

emergencies. It has a snap-on lid, a cap for a hygienic seal and can be easily cleaned. As the container stacks easily it does not take up as much space as jerry cans in freighting. Unlike many 'collapsible' plastic containers it is durable.

Communal washing facilities, for men and women, may need to be established. All communal services will need to be supervised and maintained either by employed staff or community committees. Again, consult with the users when designing and siting community facilities.

The following is a checklist of hygiene promotion measures that might be taken in an emergency.

- Carry out a rapid assessment:
 - What are the commonly accepted beliefs and practices concerning hygiene within the community?
 - What do people understand about the relationship between water, sanitation, shelter, insect and rodent vectors, and disease?
 - What are the commonly followed hygiene practices – washing hands after defecation, storage and covering of water and food, disposal of children's faeces, etc.?
 - What are the gaps in facilities, tools and equipment that do not allow people to follow hygienic practices?
 - Are there community health workers or extension agents within the community who can be recruited into a hygiene promotion programme?
 - Are there existing hygiene promotion activities?
- Develop contacts with and enlist the support of community leaders for hygiene promotion activities.
- Liaise with other agencies to co-ordinate activities and identify areas for collaboration.
- Recruit and train campaign staff to provide key hygiene-related information to the public.
- Attend agency co-ordination meetings to learn from others and to provide feedback on concerns expressed as a result of the hygiene promotion activities.
- Recruit and train public-latrines attendants to ensure cleaning and maintenance of public latrines and to encourage hand-washing following use of latrines.
- Recruit and train community facilitators to promote the benefits of family latrines and to mobilize the community to dig family latrines.
- Recruit and train mobile sanitation teams to remove and bury scattered faeces. Teams can be informal promoters of sanitation facilities (defecation fields or latrines).
- Recruit and train water source attendants to prevent defecation near water sources and to explain the dangers of such practices.
- Identify and prevent access to contaminated water sources. Recruit and train staff to monitor access and explain the dangers of using the contaminated water.
- Monitor the risk of solid waste accumulation and, if necessary, employ mobile sanitation teams in the promotion of appropriate collection and disposal.