

## Chapter 2

### **Is intervention necessary?**

The first questions that humanitarian agencies should ask themselves are ‘Under what conditions is emergency sanitation intervention necessary?’ and ‘Should we intervene in this particular situation?’.

#### **2.1 Criteria for intervention**

There are several factors which are likely to influence where and when an agency decides to intervene. These include the:

- capacity of the affected population;
- political situation;
- security situation;
- access to area;
- current health of the affected population; and
- potential health risks to the population.

The vast majority of emergencies worldwide receive no external assistance and are dealt with by the affected population themselves. In general, where there is existing capacity to do this, external agencies should not interfere. In some cases, however, there is limited capacity among the population and a great need for external assistance.

Assuming external assistance is required, the political context will have a major influence on where agencies are able work or decide to intervene. In general, it is impossible to operate in an area in which the government does not welcome, or at least tolerate, the presence of aid agencies.

Security and access are also important factors, as agencies are responsible for the safety and well-being of their own staff as well as those they are trying to assist. Insecure conflict-affected areas may be too dangerous to work in, or access to these areas may be extremely hazardous or even impossible.

Where these factors are not major constraints, the over-riding factor to be considered for an emergency sanitation programme is health. The purpose of any emergency sanitation pro-

## EMERGENCY SANITATION

gramme should be to sustain or improve the overall health status and well-being of the affected population. Many diseases that occur after disasters are linked to poor sanitation and hygiene practice, so it is essential that sanitation is given as much priority as ‘traditional’ humanitarian interventions such as healthcare, food provision and water supply.

## 2.2 Population and health

### 2.2.1 Links between disease and sanitation

Not all diseases that occur during emergencies are directly sanitation-related. Common causes of death in young refugee children are malaria, diarrhoea, pneumonia and malnutrition. Whilst diarrhoea and malaria can be sanitation-related, generally pneumonia and malnutrition are not. However, although malnutrition is not directly sanitation-related, it is often related to persistent and repeated diarrhoeal infection. It should also be noted that the affect of diarrhoea on severely malnourished children is normally more severe than on healthy children, and may be fatal. The importance of sanitation and hygiene is therefore far-reaching.

The diseases in Table 2.1 are considered to be directly sanitation-related. It should be noted that this is **not** an exhaustive list of sanitation-related diseases and does not include illnesses directly related to water supply.

<b>Table 2.1. Sanitation-related diseases, causes and transmission routes</b>	
<b>Disease</b>	<b>Causes and transmission routes</b>
<b>Faecal-oral diseases</b> Diarrhoea Roundworm Bacillary dysentery (shigellosis) Hepatitis	Contact with faeces Lack of handwashing after defecation and before food preparation Flies
<b>Skin and eye infections</b> Scabies and other skin diseases Eye infections	Mites Poor personal hygiene
<b>Soil-based diseases</b> Hookworm	Indiscriminate defecation Walking in bare feet
<b>Rodent-related diseases</b> Typhus Plague	Rodents attracted by solid waste Fleas, lice, mites
<b>Water-related diseases</b> Malaria Dengue fever	Mosquitoes Inadequate drainage / solid waste disposal Stagnant wastewater

IS INTERVENTION NECESSARY?

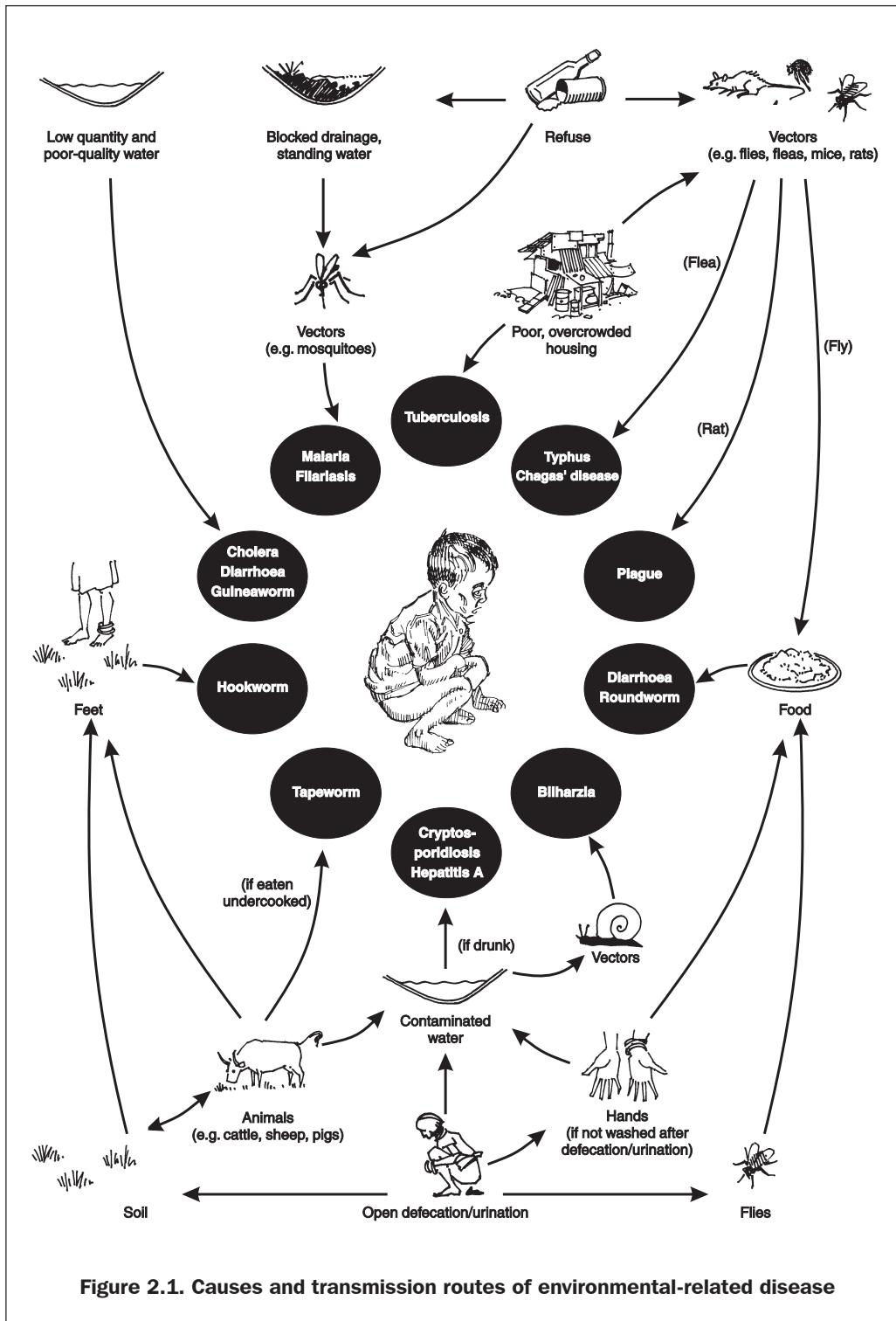


Figure 2.1. Causes and transmission routes of environmental-related disease

## EMERGENCY SANITATION

In addition, contaminated medical waste can transmit highly infectious diseases such as HIV and Hepatitis.

Figure 2.1 illustrates the causes and transmission routes of environmental-related disease. It is essential that a public health approach is adopted from the onset of any emergency sanitation programme. Intervention should be a priority wherever there is a considerable threat to the health of the affected population.

### 2.2.2 Collaboration with medical staff

It is important that sanitation programme staff consult with qualified medical staff in the area to gather health data and interpret these in relation to local conditions.

Morbidity and mortality rates are measured in cases per 10,000 people per day. Pre-emergency values may be very difficult to determine but may be estimated through interviewing and the collection of any existing health records. The following health data will be useful (if available):

#### *Health data*

Measured in *cases per 10,000 population per day*

1. What **are** the major sanitation-related diseases among the affected population?
2. What **were** the major diseases among the affected population before this emergency?
3. What **is** the **crude mortality rate (CMR)**?
4. What **was** the **CMR**?
5. What are the major diseases among the **local** population?

Any morbidity figures recorded must be interpreted in relation to local conditions and local medical advice should be sought where possible. Morbidity data are usually interpreted as a trend and then described as epidemic (a high incidence of an uncommon disease in the area) or endemic (a disease that regularly occurs in the area).

By assessing the incidence of various diseases (morbidity rate) during the initial stages, it can be determined if intervention is appropriate and any improvement or worsening in public health can then be assessed and monitored. Great care must be taken in the interpretation of health data, however, since it is very difficult to determine **which external variables** are responsible for any apparent change in health, and these may not be directly linked to sanitation. Information on morbidity and mortality — including seasonal and spatial trends — should be collated from local health centres or hospitals where possible.

The diseases prevalent among the local population must be considered in addition to those of the displaced populations. If there is a high incidence of cases of a particular disease, reasons

## IS INTERVENTION NECESSARY?

for this should be sought within the local environment. Morbidity and mortality rates can also be determined for different demographic groups within the total affected population in order to identify those most at risk.

### 2.2.3 Calculating morbidity and mortality rates

Both morbidity and mortality rates are expressed here in *cases per 10,000 population per day*. This can be calculated as follows:

$$\text{Morbidity/mortality rate} = \frac{\text{total number of cases among population} \times 10,000}{\text{total population} \times \text{number of days in record period}}$$

*Example:* There were 834 cases of malaria for a population of 56,000 in a one month period:

$$\text{Malaria morbidity rate} = \frac{834 \times 10,000}{56,000 \times 30} = 4.9 \text{ cases/10,000/day}$$

All such figures should be discussed with medical staff to determine their acceptability in the current situation.

## 2.3 Assessing the need for intervention

Intervention may be deemed to be necessary if:

- the incidence of disease is unacceptably high;
- the **risk** of disease is unacceptably high; or
- the crude mortality rate is unacceptably high.

The crude mortality rate can be viewed in relation to the threshold levels provided below.

**Table 2.2. Approximate threshold levels for mortality (adapted from Hakewill and Moren, 1991)**

<i>Situation</i>	<i>Crude mortality rate/10,000/day</i>	<i>Intervention level</i>
Stable and under control	<1	Short-term minimum objective
Serious situation	1-2	Immediate minimum objective
Emergency / Out of control	2-5	Unacceptable
Major catastrophe	>5	Very unacceptable

### 2.3.1 Threshold levels

Table 2.2 indicates the threshold levels for crude mortality rate at various stages of an emergency. These can be related to the recommended minimum objectives (immediate, short-term and long-term) for sanitation sectors described in Chapter 5. It is proposed that by the end of the short-term intervention period a stable and controlled situation will have been achieved. The crude mortality rate can be used as an indicator of the need for sanitary intervention, this is however only an **indicator**. If long-term objectives appear to be in place this should not permit complacency; on-going actions should be undertaken to anticipate and prevent any degeneration in public health.

Attempts have been made to set similar threshold levels for morbidity rates but this has proved very difficult since morbidity figures must be viewed in relation to what is normal in that situation or area.

Where health data are unavailable the decision as to whether to intervene or not must be based solely on the **risk** of disease. This requires a rapid assessment of the affected area (Chapter 16).

### References and further reading

- Hakewill, P.A. and Moren, A. (1991) Monitoring and Evaluation of Relief Programmes *Tropical Doctor*, Supplement 1, pp 24-28.
- Médecins Sans Frontières (1997) *Refugee Health: An approach to emergency situations*. Médecins Sans Frontières, Macmillan Education Ltd.; London and Basingstoke.