

**The degree to which many illnesses spread is related to people's living environment. Real,**

## **Factors that can increase disease:**

### **Poor sanitation**

- lack of appropriate and well-maintained excreta-disposal facilities
- lack of refuse collection
- inadequate control of vectors

### **Poor water**

- limited quantity of water for hygiene purposes
- poor-quality water

### **Poor knowledge and practice**

- low level of hygiene understanding
- poor hygiene practice (e.g. food contamination from soiled hands)

### **Poor housing and drainage**

- poor, overcrowded housing
- inadequate drainage systems

Figure 1 shows the causes and transmission routes of environmental-related illnesses. Appropriate water supplies, sanitation and good hygiene practice not only improve health, but may also bring other, secondary, benefits:

- improved agricultural practices and nutrition
- greater chances to enhance socio-economic development
- increased standard of living and convenience

Technical solutions on their own are not enough. *They must be correctly operated and maintained, and there must be the will, financial capability and understanding within the community to manage such solutions.* Education, therefore, is a key activity in any attempt to improve health, and must be based on a 'people-centred' approach for maximum benefit. Before undertaking a new water or sanitation project, present activities, people's everyday behaviour and their knowledge need to be understood and considered.

## **Water**

A sufficient quantity of water — of an acceptable standard — is a prerequisite to life itself. Bringing supplies nearer to the home can save time for those, mainly women, who trek long distances to collect water.

But water needs to be *properly managed* in order to provide the greatest benefit.

Examples of water management tasks include:

- protection of sources and supplies
- operation and maintenance of water and sanitation facilities
- drainage
- wastewater disposal

Increasing water quantity for people who have a good understanding of hygiene and put their knowledge into practice, will have a greater impact on general health than an improvement in water quality on its own.

Technical Brief No. 52 will discuss the issue of water quality and quantity in more detail.

## **Sanitation**

Sanitation is a measure that is undertaken to protect health. The three main categories of sanitation are:

- excreta disposal
- refuse disposal
- vector control

### **Excreta disposal**

The appropriate disposal of excreta is one of the most effective barriers to disease transmission. Faeces contain many pathogens (disease-causing organisms) and can also contain parasites (organisms that live in a host such as a human being). Both can cause illness, but this can be prevented if faeces are disposed of correctly. Methods of appropriate disposal of excreta include:

- pit latrines
- septic tanks with soakaway fields
- sewerage and wastewater-treatment facilities

In many developing-country situations, the pit latrine is the most appropriate method of excreta disposal as it is simple, easy to build and operate and maintain. There are many different pit latrine arrangements, each of which is suited to different situations. Variations include:

- dry or wet pit (pour flush)
- simple or ventilated improved
- single pit or double pit
- individual or communal
- pit or borehole, etc.



## Refuse disposal

Refuse that is not disposed of in a sanitary manner can become a breeding or feeding place for vectors, and can cause an increase in the spread of disease. Appropriate disposal includes:

- recycling of valuable materials
- re-use of organic materials as fertilisers
- burying in pits in the ground
- incineration

## Vector control

Vectors such as rats, fleas, flies and mosquitoes can all transmit disease. Methods to reduce vector numbers include:

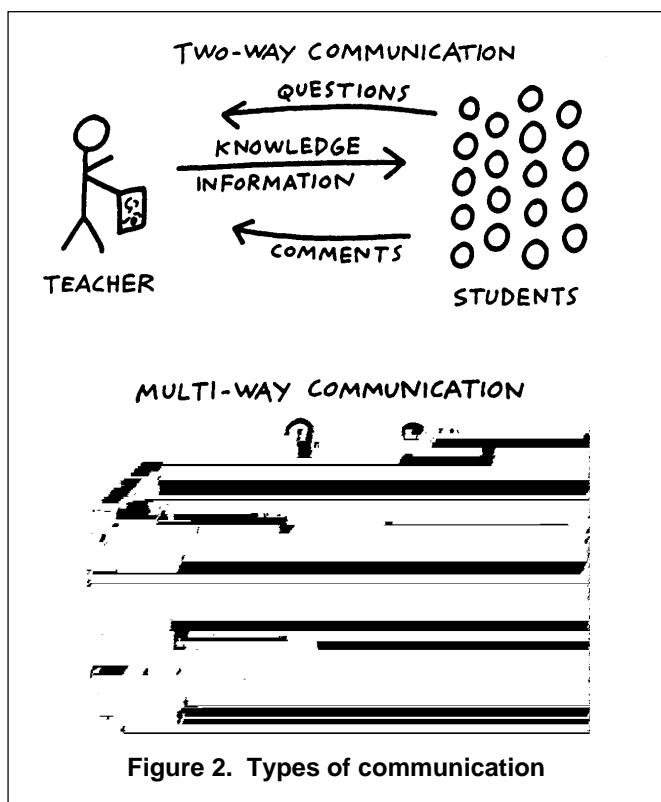
- improving excreta-disposal methods
- improving refuse-disposal facilities
- improving drainage to remove standing water
- chemical and biological methods of control

## Understanding hygiene

If communities are to benefit from the technology designed to improve their health, people have to understand the basics of hygiene and its role in disease prevention.

### How should hygiene education be undertaken?

Hygiene education should not be authoritarian, with one-way communication. It should be people-centred with, at least, two-way, or at best, multi-way communication as shown in Figure 2 (Linney, 1995).



Examples of good hygiene practice must be clearly understood if they are to be effective. They have to relate to the person's life situation and be perceived to bring measurable benefits to that person's life so that the person will want to practise what he or she has learned. It is better to develop people's existing understanding of hygiene and the causes of illness than to have an authoritarian approach imposing totally new ideas and ridiculing existing ideas.

## Tools for hygiene education

One of the challenges of hygiene education is how to reach everybody in the community. Using a variety of tools can help to solve this problem.

Suitable tools include visual aids such as:

- pictures (preferably drawn by somebody from the community concerned)
- drama / theatre groups
- television and radio

Using drama or theatre groups can attract wide-ranging audiences; having such events in market-places or open spaces attracts a lot of attention.

### Where should hygiene education take place?

Places where people gather are ideal settings for hygiene education programmes, as large numbers from both sexes and a range of ages, class and social status can be reached. Typical examples are:

- schools
- health centres and clinics
- places of worship
- market-places or open spaces
- community meetings

### Examples of good practice

- using clean vessels to collect and store water;
- covering storage containers;
- separating drinking-water containers from other water containers (e.g. bowls used for hand-washing, cooking pots, containers used for watering crops);
- keeping areas for collecting and storing clean water free from waste and standing water;
- cleaning latrines regularly;
- disposing of all excreta properly, preferably in a latrine;
- washing hands after excreting, and before preparing food, using soap where possible;
- covering food;
- using clean cooking utensils; and
- disposing of wastewater and refuse in a pit (or as appropriate to the community concerned).

