

Sanitation in public places

Long-distance bus and train services

Toilets should be provided on trains and buses, particularly if they are travelling over long distances. Normally, one toilet for every carriage or bus is enough.

- The toilets must have clean water and soap provided for hand washing, and be cleaned at least once every day with soap or disinfectant.
- Water for use on the journey must be stored in tanks. Chlorination of the water tanks may be practised if water does not meet local quality standards.
- Refuse must be stored on the train or bus until it can be disposed of safely. Bins with well-fitting lids or sacks are the most appropriate containers to stop flies and vermin being attracted to the refuse.

In many countries, toilets on trains allow the excreta to fall directly onto the ground below the train. This is a major hazard to public health, particularly in stations or in areas where people regularly cross or live close to the railway track. The disposal of sullage by this method is less of a risk. Wherever possible on trains and always on buses, excreta should be stored in a tank underneath the carriage, which must be emptied daily into a sewer or septic tank. The tank should be made of plastic or fibreglass or be lined with a waterproof material to stop corrosion in the case of metal tanks.

For workers emptying the tanks, extra safety precautions must be used :

- Pipes should be used to connect the tank to the sewer, to prevent splashing.
- A control valve should be used at the bottom of the tank to drain the tank into the sewer.
- Workers must wear gloves, eye protection and protective clothing when emptying tanks into the sewer.

Long-distance bus and railway stations

There are usually large, continually changing groups of people in bus and railway stations. People in stations often have children with them and, because they have travelled for a long distance or are about to do so, they will have need of toilet facilities and running water.

- The station must provide enough toilets to cope with the *maximum* number of people in the station at any one time.
- With the large number of people using toilets in bus and rail stations, there should be at least one permanent member of staff present to clean the toilets and to ensure that there is enough soap, paper (if used) and clean water. Toilet facilities must be cleaned several times every day. A permanent attendant also reduces the chances of vandalism, and prevents the toilet facilities becoming fouled and a health hazard. Toilet facilities can often be made self financing by charging a small sum for their use.
- Water supply is very important and where water supplies are not reliable, water tanks should be built to store water when there is a lower demand, for instance at night. Chlorination of water tanks may be practised if water supplies do not meet local quality standards.
- Refuse collection must be organized, as a build-up of refuse will attract flies and vermin (see Fact Sheet 3.12).

Ships and ports

On ships, there should be at least one toilet for every 25 passengers and the following basic rules should be adhered to :

- The toilets must have clean water and soap for handwashing, and be cleaned at least once every day with soap or disinfectant.
- Chlorination of water storage tanks may be practised if water does not meet local quality standards.
- Refuse must be stored on ships until it can be disposed of safely. Bins with well-fitting lids or sacks are the most appropriate containers to stop flies and vermin being attracted to the refuse.

On many ships, the excreta from toilets are allowed to flow straight into the sea, river or lake. Discharge into the open sea may not represent a significant risk to public health, but discharge into a lake, river, port or harbour could cause serious contamination to areas used for water collection, washing, fishing and recreation. Diarrhoeal diseases, such as cholera, could be brought from other areas by passengers on ships and then passed on to local people who swallow water whilst swimming near the ship.

The most practical solution is a storage tank for use when the ship is in port, which can be discharged once the ship is well out at sea. The tank should be made of plastic or fibreglass or be lined with water-resistant material to stop corrosion in the case of metal tanks.

Some large ships have a sewage treatment plant which purifies the sewage and allows the treated liquid to flow into the water. The solids are then pumped out of the ship into the sewerage system in port.

Cordon sanitaires

In some countries and ports, a so-called *cordon sanitaire* has been operated or still operates. In these areas, people who are deemed to carry or are likely to carry the cholera virus are refused entry to the area. There is no evidence that this is effective in preventing the spread of cholera. People who carry the cholera virus often show no sign of illness ; such people are called healthy carriers or asymptomatic carriers. There is no practicable way of identifying all healthy carriers and it is not feasible to prevent their movement by restrictive measures. Even if formal traffic across borders is controlled, informal and illegal traffic invariably continues and cholera continues to spread.

Travel restrictions are expensive to maintain and often have adverse economic consequences, as they prevent normal trade and tourism. Travel restrictions, moreover, may encourage the suppression of official information about an outbreak and hamper collaboration on disease control between international agencies and countries.

Infectious diarrhoeal diseases such as cholera can only be reliably prevented by ensuring that all the population have access to safe drinking water and adequate sanitation facilities. This particularly applies to places where there are large numbers of people, where infection can spread rapidly through contaminated food and water.

Markets

As food is handled and eaten by large numbers of people at markets, markets can be the centre for the spread of infectious diarrhoeal diseases such as cholera, typhoid and hepatitis A, if sanitation and hygiene is not properly planned.

There are a number of key points which should be adhered to when planning sanitation in markets.

- Toilet facilities in markets should be away from the food storage or display areas. It is normal to provide separate toilet facilities for staff in the market and for customers. Staff toilets must have an extremely high standard of cleanliness, as staff handle large quantities of foods during the working day.
- Handwashing basins with soap and running water should be provided, both in the toilets and near the market stalls. Chlorination of the water supply may be practised if water does not meet quality standards.

- Clean water facilities should be available for the freshening of produce brought for sale. Where these facilities do not exist, river water is commonly used to soak produce to make it look more attractive. This represents a major public health risk, as river water often contains faecal contamination.
- Refuse must be disposed of safely. Bins with well-fitting lids or sacks are the most appropriate containers to stop flies and vermin being attracted. Refuse must be removed regularly, preferably daily, from the market area to avoid build up of the refuse.
- All street-food handlers should be licensed, but prior medical examination (clinical and laboratory) should not be a condition for licensing or for subsequent renewal of license. The handler should provide personal particulars, intended type of business, and location or area of operation.
- Food handlers should be educated, encouraged or supervised to make sure that they stop their business promptly if at any time they suffer from diarrhoea or vomiting or have boils, sores or ulcers on exposed parts of the skin. Resumption of business after recovery may be subject to authorization by the appropriate food control authority.
- Food handlers should wear clean and proper clothing, according to prevailing local standards. Where feasible, food handlers should be encouraged to wear clean overall aprons, preferably white or light in colour.
- Food handlers should wash their hands with soap and water after handling raw foods, before handling cooked foods, after using the toilet, after handling unsanitary objects such as garbage containers, and after contact with toxic substances such as pesticides and disinfectants.
- In the preparation and sale of food, food handlers should refrain from unhygienic and unsightly practices, such as :
 - chewing or smoking tobacco, chewing betel nut or gum ;
 - touching mouth, tongue, nose, eyes, and so on ;
 - spitting, sneezing and coughing on or near food.

Schools

Sanitation in schools needs to be sufficient for the number of students and staff members. One toilet cubicle for every 25 students is normally enough. Separate blocks for male and female students should be provided. Separate facilities are also commonly built for male and female staff.

There are a number of key points to be addressed when planning sanitation in schools.

- Handwashing basins with clean water and soap must be provided in each toilet block.
- Chlorination of the water supply may be practised if water does not meet local quality standards.
- Toilet facilities should be cleaned with soap or disinfectant at the end of every day. Cleaning duties can be the responsibility of the students, operating on a rota basis. If this is done, then a member of staff should supervise the students to ensure that the toilets are cleaned properly and the students wash their hands properly when they are finished. Alternatively, a cleaner can be employed if there are sufficient funds.
- Refuse must be disposed of safely. Bins with well-fitting lids or sacks are the most appropriate containers to stop flies and vermin being attracted to refuse. Refuse must be removed regularly and disposed of safely.

Schools can be instrumental in promoting different types of sanitation. Students can be involved in the design and implementation of sanitation construction projects. They can also take part in health education by designing posters and notices to reinforce hygiene education messages. Where it is possible, health education classes should be held regularly for all students to make them aware of the risks of poor sanitation and hygiene, and to teach good hygiene practices.