

Chapter 6

Human issues

6.1 Health

If the environment is cold and fuel is scarce, people tend to congregate in small, easily heated, but poorly ventilated spaces. In that way heat is conserved and maximum use is made of warm clothes, blankets and food. This behaviour and the coldness of the air encourage specific health problems, which are discussed in this section.

Air-borne diseases

Diseases: measles, pneumonia, meningitis, whooping cough, influenza, and respiratory problems

Transmission of disease through the air is the most frequent source of health problems in cold regions.⁶⁰ Efforts should be made to reduce overcrowding, provide heating, and implement measles vaccination procedures.

Water-washed diseases

Diseases transmitted by poor washing practices include faecal-oral diseases and those passed by direct human contact. Provision of washing facilities with warm water and privacy is likely to encourage good personal hygiene. Hygiene education programmes will also help to reduce the incidence of water-washed diseases.

Faecal-oral transmission

Diseases: cholera, hepatitis, typhoid, dysentery

Faecal-orally transmitted diseases are as likely to be present in cold regions as in warm ones. Pathogenic organisms do not develop as quickly in cold weather but are likely to survive much longer. In Greenland the US army detected coliform organisms in water samples taken from sites that had been abandoned four years previously.⁶¹

In refugee camps in very cold areas, if open defecation has been practiced previously, the winter freeze can offer an opportunity to clean up excreta from around the camp. Solid frozen

⁶⁰ Buttle (1998)

⁶¹ DiGiovanni et al. (1962)

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excreta can be easily removed to a burial site. This, in turn, reduces the likelihood of outbreaks of faecal-oral disease in the spring when the excreta would have thawed.

If no hot water is available or there is no method of drying hands, people may be reluctant to wash their hands after defecating, due to the discomfort involved. Methods of providing hot water are discussed in section 3.4, and a possible hand-washing facility is shown in Figure 4.2.

Water as a method of anal cleansing may also be impractical, again for reasons of comfort. Alternative methods, for example using paper, can be proposed but may not be culturally acceptable. In that case sensitive discussion of the subject with the people and with community leaders is vital to maintain effective camp sanitation.

Transmission by direct contact

Diseases: Skin and eye diseases, scabies, conjunctivitis, trachoma, mycosis

Efforts to alleviate crowding and to keep people warm enough that they do not have to huddle together will reduce the levels of transmission of skin and eye diseases. If possible the provision of hot water will greatly encourage people, especially children, to wash themselves.

Diseases transmitted by vectors

Mosquitoes

Although mosquitoes are not able to survive in consistently cold areas, there are some countries, such as Azerbaijan, where they exist in sufficient number in the summertime for malaria to be endemic, despite having severe winters. Mosquitoes are also known to transmit diseases other than malaria.

Flies

Flies develop more slowly in cold weather and, while they could be transmitters of faecal-oral disease in warm regions, this is unlikely anywhere where the ambient temperature is less than 0°C. Measures to manage sanitation and solid waste will also minimise fly breeding.

Lice

Diseases: typhus, recurrent fever

Lice are transmitted from person to person very easily in cold regions. First, because people may huddle together and secondly because lice eggs in clothes will not be killed by cold water.

Lice are difficult to treat effectively. Possible measures include:

- powdering people and clothes;
- washing clothes in hot water, although the temperature of the water must be quite high. A temperature of 70°C for one hour is necessary, according to MSF (1994), or 54°C according to Davis and Lambert (1995);
- hot ironing of clothes, after washing them, will also help to kill lice eggs present in the seams of clothing; and
- reduction of overcrowding.

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Other health problems

Other likely health problems in cold climates include:

- burns from stoves;
- carbon monoxide poisoning if people use heaters in confined spaces without adequate ventilation;
- exposure caused by low temperatures, inadequate food, shelter, blankets or clothes. See also the section below on the effects of wind-chill;
- physical injury from slipping and falling on ice or frozen ground;
- falling into water, through thin ice; and
- people getting stuck in the snow in their cars without adequate equipment.

Wind-chill

Increasing wind speeds have the effect of making the human body feel colder than the temperature recorded by thermometers. This effect is known as the wind-chill effect. It is caused by the wind increasing the rate of evaporation of water from the surface of the body, which removes heat. Figure 6.1 shows how, for different air temperatures, the apparent temperature decreases as the wind speed increases. Note that the effect would be even more pronounced if people were wet, after rain for example, which would cause the body to lose heat even more quickly.

6.2 Socio-political issues

The cold can affect attitudes and morale, especially in winter. On the other hand, people involved in emergencies in cold climatic regions may have a wealth of knowledge to draw on because they have always lived in cold countries.

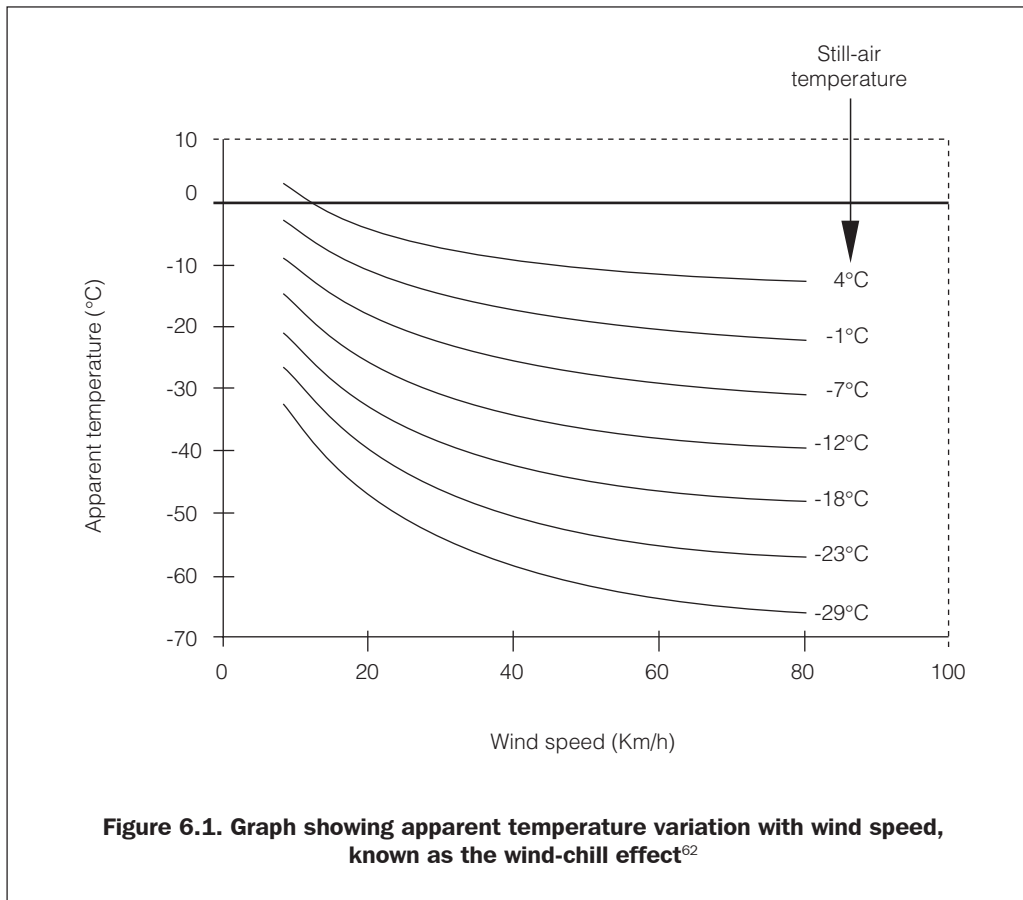
Some possible negative effects of the winter on water and sanitation provision are:

- Motivation of workers (including aid workers) may be generally lower in winter than in summer.
- As winter approaches the priorities of local people will probably become food, fuel, shelter and obtaining income. Water and sanitation may not be a high priority for them at that time of year. They may be used to constructing water and sanitation facilities in the warmer months only.

More developed countries (many cold region countries are more developed) have more to lose when disaster strikes. When disaster strikes a country with highly developed infrastructure and communications systems, the resulting damage is greater, in monetary terms, than that which a less developed country would experience. People in developed countries are reliant on shops for basic commodities and may also have fewer practical survival skills than people from less developed countries.

Local political systems will greatly affect material supply. Politics, corruption and bureaucracy, the latter possibly imposed by the local people so that they are properly consulted on aid issues, can all make it difficult to procure necessary items.

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6.3 Personal effectiveness

Warm people work more effectively, including aid workers. The value of dressing sensibly, eating properly, and consuming regular hot drinks should not be underestimated.

Some more factors that could improve the comfort and effectiveness of aid workers are:

- Personal kit should include warm, waterproof clothes, hat and gloves and sturdy boots. Note that the wind-chill factor could make conditions seem much colder than the reading on a thermometer.
- Personal medical kits should contain adequate medication for respiratory tract infections (coughs and colds).
- Ensure that vehicles have shovels, snow chains and tools as well as spare tyres. Taking food, water, and four-season sleeping bags (one per person) is also advisable.

⁶² Figures from cdc.gov (1998)

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- Beware of additional health risks such as hypothermia, frost-bite and snow-blindness. Beware also of carbon monoxide poisoning, which can be fatal and can occur when small stoves are used in badly ventilated, confined areas.
- Ensure that new staff are fully briefed about personal risks and issues relevant to working in cold regions.

6.4 Health and safety

Working in cold climates is potentially dangerous for personnel, who should adopt safe work procedures. Personnel should wear warm and protective clothing suitable for the climate and the tasks to be undertaken. Outside work should never be undertaken alone, so that assistance can be sought if one person becomes injured or gets into difficulty. Cold has a numbing effect, and people may not be immediately aware of injuries sustained.