

Disaster Risk Management for Health

WATER, SANITATION AND HYGIENE

Key Points

- Water, sanitation and hygiene (WASH) saves lives in both routine and emergency situations. ¹
- Multi-sectoral action reduces vulnerability, maintains water sources and waste systems, and ensures WASH is a priority action in the response to emergencies. ^{2,3}
- Numerous diseases are spread by water, waste and inadequate hygiene including via vectors. ^{1,4}
- The main objective of water, sanitation and hygiene programmes in disasters is to reduce faeco-oral transmission of disease and exposure to disease-bearing vectors.
- WASH involves the promotion of good hygiene practices, the provision of safe drinking water and the reduction of environmental health risks which allow people to live with good health, dignity, comfort and security. ^{1,2,4}
- While both water quantity and quality are important for health, it is quantity which should be given priority.
- Women and children who must find their own water risk their health and take time away from school and other productive activities.
- Providing WASH services helps people return to their normal daily activities after a disaster. ¹
- Medical waste often contains sharps, pharmaceuticals, chemicals and heavy metals. ⁵



Young girl collecting water in Malawi (Marko Kerac 2011)

Why is this important?

WASH refers to the provision of safe water for drinking, washing and domestic activities, the safe removal of waste (toilets and waste disposal) and health promotion activities to encourage protective healthy behavioral practices amongst the affected population.

WASH is essential to meet the Millennium Development Goals related to environmental sustainability and health. ²

Inadequate WASH can restrict medical treatment in health facilities; degrade environmental conditions and increase community vulnerability. ^{2,3,4}

Hazards, natural or manmade, can compromise vital water and waste management infrastructure. ²

What are the health risks?

Infection can be transmitted through:

- **Consumption** of water or food that has been contaminated through environment, washing or cooking.
- **Hand to mouth transmission** when availability of water for personal hygiene is reduced.
- **Vectors** (e.g. flies and mosquitoes) which breed near waste sites and stagnant water.

Inadequate provision of WASH can lead to an increased risk of several diseases including: diarrhoea, Hepatitis A, Cholera, Typhoid and Shigella Dysentery, Intestinal helminths, Malaria and Trachoma. ¹

Inadequate management of human excreta poses a serious health risk due to potential contamination and loss of local water sources. ^{1,6}

Children's excreta can be particularly high risk: it is more infectious than adults, yet often perceived by communities to be less so.

Lack of adequate supplies of clean water restricts the functioning and safe practices of health facilities and health workers. ¹

Pathogenic risks from exposure to medical waste include Hepatitis B & C, HIV, haemorrhagic fever, skin respiratory and gastroenteric infections; it is estimated that 20% of health care waste is infectious. ⁵

Risk management considerations

Governments and communities can manage disaster risk in WASH by:

- Designing, building and maintaining water and sanitation systems which include simple modifications to withstand the risks of disasters.^{2,3,4}
- Carrying out vulnerability assessments of community supplies of water and sanitation systems to assess ability to provide essential services in the event of a disaster.^{2,3,4}
- Engaging and consulting the community in planning WASH services to identify culturally and socially acceptable interventions which will be effective, long lasting and sustainable.^{1,4}
- Ensuring a multi-sectoral approach in all aspects of disaster risk management for WASH, including disaster response planning.^{3,4,6}
- Providing an adequate quantity of safe water and accessible sanitation services during a disaster helps to manage cases of contamination.
- Preventing infection spread through education, facilities and soap for handwashing to promote hygienic practices.⁷
- Referring to SPHERE (2011) on the minimum standards during disaster response for individuals, camps and health facilities.⁷
- Ensuring shelters and temporary camps have access to safe water and sanitation.
- Ensuring health facilities and health care providers have adequate water supplies to support delivery of life-saving health care services in emergency situations.
- Disinfection and treatment of water as per SPHERE or WHO recommendations.⁷
- Preventing defecation, especially by children, in areas which could contaminate water supplies.^{3,4}

Providing safe disposal of clinical waste and vaccination to waste handlers against prevalent infections such as Hepatitis B.^{4,5}

Examples

Pakistan (2005): The 7.9 magnitude earthquake destroyed water and sanitation infrastructure resulting in the necessary provision of emergency supplies to 1.7 million people.³

Haiti (2010): Badly damaged or destroyed infrastructure resulting from the earthquake and hurricane season left little access to clean water and sanitation. These structural problems further impacted on the response to the cholera outbreak.⁸

References and further reading

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4. Wisner, B Adams J (2002) Environmental health in emergencies and disasters: A practical guide. water and sanitation chapters pp 92-147
5. WHO (2011) Four steps for the sound management of health-care waste in emergencies
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6. WHO (2005) Essential hygiene messages in post-disaster emergencies
http://www.emro.who.int/Sudan/pdf/hygiene_emergencies.pdf
7. Sphere (2011) Humanitarian Charter and Minimum Standards in Disaster Response
<http://www.sphereproject.org/>
8. WHO (2010) Editorial. Health action in crisis
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Cyclone, Luzon, Philippines, DOH/WHO

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