Diploma in Water Hygiene and Sanitation

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ASSIGNMENTS

1. **Why is hand washing an essential aspect in WASH interventions?**

Keeping hands clean is one of the most important steps we can take to avoid getting sick and spreading germs to others. Many diseases and conditions are spread by not washing hands with soap and clean, running water.

### How germs get onto hands and make people sick:

Feces (poop) from people or animals is an important source of germs like [Salmonella,](https://www.cdc.gov/salmonella/) E. coli O157, and [norovirus](https://www.cdc.gov/norovirus/) that cause diarrhea, and it can spread some respiratory infections like adenovirus and hand-foot-mouth disease. These kinds of germs can get onto hands after people use the toilet or change a diaper, but also in less obvious ways, like after handling raw meats that have invisible amounts of animal poop on them. A single gram of human feces—which is about the weight of a paper clip—can contain one trillion germs. Germs can also get onto hands if people touch any object that has germs on it because someone coughed or sneezed on it or was touched by some other contaminated object. When these germs get onto hands and are not washed off, they can be passed from person to person and make people sick.

### Washing hands prevents illnesses and spread of infections to others

Hand washing with soap removes germs from hands. This helps prevent infections because:

1. People frequently touch their eyes, nose, and mouth without even realizing it. Germs can get into the body through the eyes, nose and mouth and make us sick.
2. Germs from unwashed hands can get into foods and drinks while people prepare or consume them. Germs can multiply in some types of foods or drinks, under certain conditions, and make people sick.
3. Germs from unwashed hands can be transferred to other objects, like handrails, table tops, or toys, and then transferred to another person’s hands.
4. Removing germs through hand washing therefore helps prevent diarrhea and respiratory infections and may even help prevent skin and eye infections.

Teaching people about hand washing helps them and their communities stay healthy. Hand washing education in the community:

1. Reduces the number of people who get sick with diarrhea by 23-40%
2. Reduces diarrheal illness in people with weakened immune systems by 58%
3. Reduces respiratory illnesses, like colds, in the general population by 16-21%
4. Reduces absenteeism due to gastrointestinal illness in schoolchildren by 29-57%

### Not washing hands harms children around the world

About 1.8 million children under the age of 5 die each year from diarrheal diseases and pneumonia, the top two killers of young children around the world

1. Hand washing with soap could protect about 1 out of every 3 young children who get sick with diarrhea  and almost 1 out of 5 young children with respiratory infections like pneumonia
2. Although people around the world clean their hands with water, very few use soap to wash their hands. Washing hands with soap removes germs much more effectively
3. Hand washing education and access to soap in schools can help improve attendance
4. Good hand washing early in life may help improve child development in some settings
5. Estimated global rates of hand washing after using the toilet are only 19%

### Hand washing helps battle the rise in antibiotic resistance

# Preventing sickness reduces the amount of antibiotics people use and the likelihood that antibiotic resistance will develop. Hand washing can prevent about 30% of diarrhea-related sicknesses and about 20% of respiratory infections (e.g., colds) . Antibiotics often are prescribed unnecessarily for these health issues. Reducing the number of these infections by washing hands frequently helps prevent the overuse of antibiotics—the single most important factor leading to antibiotic resistance around the world. Hand washing can also prevent people from getting sick with germs that are already resistant to antibiotics and that can be difficult to treat.(CDC, Show Me the Science - Why Wash Your Hands. n.d.?)

1. **What are the main standards in WASH interventions in emergencies?**

Main standards in WASH interventions in emergencies are as follows:

a) Water Supply:

Water Supply Standard 1: *Access and Water Quantity*

All people have safe access to a sufficient quantity of water for drinking, cooking and personal and domestic hygiene. Public water points are sufficiently close to shelters to allow use of the minimum water requirement.

*Water Supply Standard 2: Water quality*

Water at the point of collection is palatable, and of sufficient quality to be drunk and used for personal and domestic hygiene without causing significant risk to health due to water-borne diseases, or to chemical or radiological contamination from short term use.

*Water Supply* Standard *3: Water use facilities and goods*

People have adequate facilities and supplies to collect, store and use sufficient quantities of water for drinking, cooking and personal hygiene and to ensure that drinking water remains sufficiently safe until it is consumed.

b) Excreta Disposal

*Excreta disposal standard 1: access to and numbers of toilets*

People have sufficient numbers of toilets, sufficiently close to their dwellings to allow them rapid, safe and acceptable access at all times of the day and night.

*Excreta disposal standard 2: design and construction*

People have access toilets which are designed, constructed and maintained in such a way as to be comfortable, hygienic and safe to use.

C) Vector Control

*Vector control standard 1: Individual and family protection*

People have the means to protect themselves from disease vectors and nuisance pests when they are estimated to be a significant risk to health and well-being.

*Vector Control Standard 2: Physical, environmental and chemical protection measures*

The number of disease-bearing vectors and nuisance animal that pose to risk people's health and well-being are kept to an acceptable level.

*Vector control standard 3: good practice in the use of chemical vector control methods*

Vector control measures that make use of pesticides are carried out in accordance with agreed international norms to ensure that staff, the people affected by the disaster and the local environment are adequately protected, and to avoid creating resistance to pesticides.

D) Solid Waste Management

*Solid Waste management Standard 1: Solid Waste collection and disposal*

People have an environment that is acceptably free of solid waste contamination, including medical wastes.

*Solid waste Management Standards 2: Solid Waste containers/Pits*

People have the means to dispose of their domestic waste conveniently and effectively*.*

*E) Drainage*

*Drainage Standard 1: Drainage works*

People have an environment that is acceptably free from risk of water erosion, and from standing water, including storm water, flood water, domestic wastewater and wastewater from medical facilities.

*Drainage Standard 2: Installations and tools*

People have the means (Installations and tools, etc.) to dispose of domestic wastewater and water point wastewater conveniently and effectively, and to protect their shelters and other family or communal facilities from flooding and erosion.

E) Hygiene promotion

*Hygiene Promotion standard 1: Hygiene behavior and use of facilities*

All sections of affected population are aware of priority hygiene practices that create the greatest to health and are able to change them. They have adequate information and resources for the use of water and sanitation facilities to protect their *health and dignity.*

*Hygiene Promotion standard 2: Programme implementation*

All facilities and resources provided reflect the vulnerabilies, needs and preferences of all sections of the defected population. Users are involved in the management and maintenance of the hygiene facilities where appropriate.

In addition, Analyses and Human resources capacity and training can be included the main standards for WASH interventions. (Davis & Lambert, 2002, pp.619-620)

**3. Waste Management is becoming one problem in the emergencies. Why?**

The safe disposal of solid waste is critical for public health, especially during an emergency. Not only will existing solid waste collection and disposal systems be disrupted but there will be extra waste caused by the emergency itself. Initially at temporary settlements for displaced people or refugees there will be no arrangements in place at all for solid waste management. If solid waste is not dealt with quickly, serious health risks will develop, which may further demoralize the displaced community already traumatized by the emergency.

If organic solid wastes (such as food waste) are not managed properly, there are major risks of fly and rodent infestation (particularly rats) and surface water pollution. Solid waste often blocks drainage channels and leads to environmental health problems associated with stagnant and polluted surface water that can lead to drinking water contamination. Uncollected and accumulating solid waste and the debris left after an emergency, natural disaster or conflict may also create a depressing and ugly environment, discouraging efforts to improve other aspects of environmental health.

The Sphere standard for solid waste management aims to ensure that ‘the affected population has an environment not littered by solid waste, including medical waste, and has the means to dispose of their domestic waste conveniently and effectively. The key indicators in the Sphere standards include specific requirements such as ‘all households have access to refuse containers which are emptied twice a week at minimum and are no more than 100 m from a communal refuse pit’.

At a temporary settlement site, routines for the storage, collection and the disposal of solid waste or refuse need to be implemented and resourced. This is particularly important at high density sites. Engaging the community can be a vital aspect and any initial clean-up operation should be community based.

A common way to produce storage containers is to use 200-litre drums that can be cut in half to give two 100-litre drums. Drainage holes should be drilled in the bottom. UNHCR suggest that these drums should be placed throughout the site so that no household is more than 15 m away from one.

Collection from site containers should be done regularly (daily if possible). Lorry or tractor and trailer-based collections can be expensive. It may be more appropriate to use hand carts, wheelbarrows or donkey-pulled carts if available.(Study session 14 Emergency sanitation and Waste Management, Open University 2016)

**4. Discuss how environmental health and sanitation affect the nutritional status of the vulnerable groups?**

Proper sanitation and hygiene and safe drinking water can reduce under nutrition and stunting in children by preventing diarrheal and parasitic diseases, and damage to intestinal development (environmental enteropathy). According to the [World Health Organization](http://apps.who.int/iris/bitstream/10665/43840/1/9789241596435_eng.pdf), roughly 50% of all malnutrition is associated with repeated diarrhea or intestinal worm infections as a direct result of inadequate water, sanitation and hygiene. This does not capture the subclinical infections from environmental enteropathy, which[current research is revealing as a significant factor for poor growth and under nutrition](http://onlinelibrary.wiley.com/doi/10.1111/mcn.12220/abstract).

When children are undernourished, their resistance to infection is lowered and they are more susceptible and more likely to die from diarrheal disease and other infections. In fact, diarrhea is the second-leading cause of death globally in children under five years. Where children regularly suffer from diarrhea, they are also very likely to be malnourished as a result. For infants, particularly those under six months of age, diarrhea can cause permanent damage to intestinal development, reducing a child's ability to absorb nutrients.

Studies show hand washing with soap can reduce incidences of diarrhea by 42 to 47%, and it is simple, effective and cost-efficient. Reductions in diarrheal disease through water, sanitation and hygiene interventions can prevent at least 860,000 child deaths a year caused by under nutrition. Improvements in sanitation, especially in eliminating open defecation, are associated with a 4 to 37 percent reduction in stunting in rural settings and with a 20 to 46 percent reduction in urban settings. Parasitic infections caused by poor sanitation and hygiene can lead to anaemia and impact normal growth and cognitive development(WOLRD VISION INTERNTAIONAL, n.d.)

**5. Assuming you have been appointed to head an organization dealing with health development in your area, describe the critical factors that you will consider in planning for health service in that area.**

Health Development Planning is the process of defining community health problems, identifying needs and resources, establishing priority goals, and setting out the administrative action (Challi Jira, Amsalu Feleke, Getnet Mitike, 2004) . So, as I am the head of the health department of the organization I consider and I will:

1. Identify ways to reduce health risks, including the use of vaccinations and medications;
2. Investigate communicable diseases and work to stop their spread;
3. Provide local health care providers with urgent health information, treatment guidelines and access to vaccinations and medications;
4. Communicate health information and advice to the public;
5. Assist agencies in hazardous material spills; and
6. Help state and federal agencies monitor air, food, and water supplies to ensure they are safe.

**Management**

**References**

CDC, show me the science, why wash your hands? n.d

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