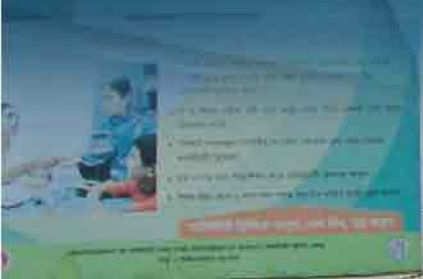




Water Safety Plan

## Guidelines for implementation of Water Safety Plan For Hospital and Clinic



## **GUIDELINES FOR IMPLEMENTATION OF WATER SAFETY PLAN FOR HOSPITAL AND CLINIC**

ISBN 978-984-34-0832-7

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Any queries regarding this guide should be addressed to: [sebanregistry@who.int](mailto:sebanregistry@who.int)

Design and Layout: Environmental Health Unit, WHO Country Office, Bangladesh



## What is safe water?

Water free from microorganism and contains chemical and minerals in allowable limit is safe water. Safe water is potable and free from color and odor.



## How water is contaminated?

- If groundwater contains high level of chemical contaminants like arsenic, chloride, manganese etc. or it is exposed to microorganisms.
- If wastes are dumped in the surface water
- If the water supply system is not operated properly, the distribution line is faulty or leaking and no regular O&M.
- If unclean container is used during collection, transportation, preservation and use of water.



## How can contaminated water cause us harm?

- Drinking of water contaminated with microorganisms causes diseases like Diarrhea, Cholera, Typhoid, Hepatitis and Jaundice.
- Drinking of arsenic contaminated water causes Arsenicosis.
- People generally drink less amount of water than required if it is saline or have high amount of iron causing dehydration.

People become weak suffering from diseases caused by drinking of contaminated water, cannot go to work and endure loss of income. Severity of diseases may even lead to death.

## What is WSP?

## Why WSP is needed at hospital and clinic?

### What is WSP?

Water safety plan (WSP) is a comprehensive risk assessment and risk management approach that encompasses all steps in the water supply from catchment to consumer to ensure the safety of a drinking-water supply consistently.

### Why WSP is needed at hospital and clinic?

Patients go to hospital or clinic for treatment. Here patient recovers gradually in a good environment receiving proper treatment and services.

Patients have to wait at the doctor chamber, clinic or hospital for long time for treatment in most cases and often need to be admitted. Alongside food, here they require safe drinking water. In most cases, patients drink water from the water supply system of the hospital or clinic and some use commercially available bottled water.

The supply water at hospital or clinic is often not monitored for contamination. As a result, instead of recovery people become infected with new diseases.



## How water is supplied at hospital and clinic?

Some hospitals and clinics get water from Pourashava (municipality) piped water supply systems. Some hospitals and clinics install as well as operate and maintain different water supply technologies by themselves. Hence, the authority needs to check the water for contamination regularly. In addition to knowing the risks of contamination, they also should know how to control the risk to keep water safe. Proper knowledge and action of authority in this regard will ensure quality service for the patient and safe water for all.



Some hospitals and clinics have connections from Pourashava piped water supply system



Some hospitals or clinics abstract groundwater and supply through pipeline



Some hospitals or clinics provide water by installing tubewell

## How water is supplied at hospital and clinic?



Some patient use commercially available bottled water



Some hospitals and clinics buy water from private entrepreneur and supply through dispensing system for the patients or others.

# How water is contaminated in piped water supply system? What are the measures to prevent contamination?

In piped water supply systems, water is generally collected in underground reservoir then lifted to overhead tank (OHT). From OHT water is supplied to different points through faucets. Water may be contaminated at different stages like collection, preservation and transportation as described below:

## Source and risk of water contamination



- Dirty water around the tank may spill into it if the lid is missing or it is placed at the ground/floor level



- Water can be contaminated if reservoirs are unclean or lichen grows in the surfaces

## Measures to control risk



- The manhole of the reservoir is covered with clean lid; the lid is placed at 4-6 inches higher than the floor level.



- Reservoirs are cleaned regularly (at least 3 months interval) and no waste/dirt are found inside and outside of the reservoir.

## Source and risk of water contamination



- Water may be contaminated if dirty water accumulate around lifting pump



- If connection is made by unskilled technician or using low quality materials then distribution line is easily damaged causing ingress of dirty water through leaking pipe.
- Number of leakage and hence chances of water contamination may increase if the pipeline is very old or the protecting soil cover is eroded.



- If bamboo/wood piece is used instead of proper tap and surroundings of tap stand is not clean.
- If drainage system is not good and dirty water is stagnant around the water point.

## Measures to control risk



- The surrounding of water abstraction and distribution area is kept neat and clean



- Connection should be made properly by skilled technician and using quality materials
- Old pipe should be replaced with new one and protection should be ensured by putting earth cover.



- Faulty taps are replaced by new ones and surroundings of the tap stand are kept clean.
- Proper drainage system is in place and water cannot accumulate around the water point.



## How does tubewell water get contaminated?

Tubewell water is contaminated in various ways. Few measures can prevent such contamination easily. Risks of contamination of tubewell water are described below:

If the aquifer from which the tubewell abstract water is arsenic contaminated.



Water can be contaminated if cloth/bottle is fastened to the spout of the tubewell or the sanitary seal of the tubewell is missing.



If there is no platform, platform is broken and/or dirty, stagnant water in the surroundings.



If there is latrine within 30 feet of the tubewell.

## What are the control measures to prevent contamination of Tubewell water?



- Place cover on top of the tubewell head.
- The distance between tubewell and latrine should be more than 30 feet.
- There is sanitary seal in the tubewell with clean and cemented platform
- Tubewell surroundings and the drain are kept clean and no stagnant water around the tubewell.

# How do we get safe water during emergency?



Crisis of safe water emerges after flood or other natural disasters. Floodwater can even turn tubewells unsafe. Some simple measures can ensure safe water for people during such period. Some of the methods are described below:

- 1 **Boiling water:** Water becomes safe if it is heated for 1-2 minutes more after started boiling.
- 2 **Using alum:** Half teaspoon of alum need to be properly mixed with 20 liters of water in a pitcher and after one hour around 90 percent of the top layer water should be poured into another vessel. The rest of the water with residues in the pitcher should be disposed of.
- 3 **Using water purification tablet:** Water can be made safe by adding chlorine tablets to it. During collection of tablets, it is important to know how many tablets are required to purify a certain amount of water.
- 4 **Using bleaching powder:** Turbid water can be made clear by mixing it thoroughly with alum and then filtering the stagnant water through strainer. Water becomes fully safe if water purification tablet or bleaching powder is applied to this clear water. Generally one-fourth (1/4) teaspoon of dry and white bleaching powder is required to disinfect 20 liters of clean water. During collection and use, bleaching powder can be checked for chlorine odor to verify the strength.

# What are the stages of WSP?

**WSP ensures necessary control measures at five stages**



**1. Source/ media**



**2. Collection**



**3. Transportation**



**4. Preservation**



**5. Use**

Water may be contaminated at five stages from source to point of use. Appropriate control measures at these stages can ensure safe water by preventing contamination.

## What needs to be monitored to get safe water from piped water supply?

To ensure safety of water certain features of piped water supply should be regularly observed. These are listed below. If the answer to any question is 'No' then action is required

S.N.	Observation issue	Yes	No
1	Are the connections properly made in the pipe network?		
2	Are the pipes protected and adequately supported at canal or drain crossing?		
3	Is there no leakage at the pipeline or water not seeping at the pipe joints?		
4	Are the pump house and its surroundings kept tidy?		
5	Is the reservoir manhole slightly elevated from floor level and covered with clean lid/cover?		
6	Are ground or overhead reservoir and surroundings of the reservoirs clean?		
7	Are there functional and well-maintained taps in the water points/ tap stands?		
8	Is there undamaged platform with good drainage system and neat and clean surroundings in each tap stand?		
9	Is water tested for microbial and chemical contamination at a regular interval and are actions taken based on test results?		
10	Are both hands and the container washed thoroughly with clean water and soap before collecting water and is the container kept covered after collecting water?		

## What needs to be monitored to get safe water from tubewell?

To ensure safety of water from tubewell the following features should be regularly observed.  
If the answer to any question is 'No' then action is required

S.N.	Observation issue	Yes	No
1	Is there no latrine or excreta within 30 feet of the tubewell?		
2	Is the platform undamaged, neat and clean with sanitary seal and good drainage system?		
3	Is the body of the tube well clean with no growth of lichen?		
4	Is there a sanitary seal in the tubewell?		
5	Are unclean materials like plastic bottle, cloths not attached with the spout of tubewell?		

**Key Contributors:**

- Umme Farwa Daisy, Consultant
- Zahid Hossain, Consultant
- Shamsul Gafur Mahmud, World Health Organization
- Alauddin Ahmed, World Health Organization
- AKM Ibrahim, Department of Public Health Engineering
- Ibrahim Md Taimur, Department of Public Health Engineering



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**World Health  
Organization**  
Country Office for Bangladesh

ISBN 9789843408327



9 789843 408327