



HOUSEHOLD WATER TREATMENT

Sharing experience conducted in Bombali District

Why House Hold Water Treatment (HHWT)?

Water treatment at the household level ensures that the family is in charge of the safety of their own drinking water. In communities where there is no access to an improved water point or hand pump facility, HHWT provides one solution for families to reduce diarrheal disease. HHWT is implemented at the community level, an affordable solution and easy to implement **if the training is done thoroughly**. The community has trained individuals that can treat the water for each household when needed.

The water is treated in a two step process:

1. sieving of the water through a clean white cloth or material;
2. then, treating the water with a determined dose of chlorine in a 5 gallon or 2.5 gallon rubber.

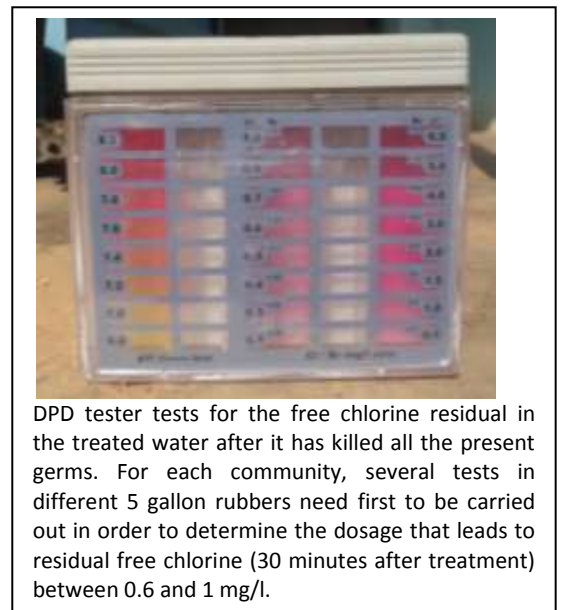
The chlorine (Cloral) is manufactured locally in Freetown and supplied through a chain of stores to remote areas.

Chlorine Dosage

An important aspect of the community acceptance of HHWT is **using the correct dosage**. If the dose is too strong, bad odors or taste will result in the family abandoning the treatment. The dose of chlorine is specific to the water the community fetches, as every water source has a different chlorine demand. **Therefore, the dosage should be tested with the community source water before sensitized to the community.**

In order to know the correct dose, the free chlorine of the treated water is measured thirty minutes after treatment. This corresponds to the *free chlorine residual*. Using a DPD tester, the water should have a free chlorine residual above 0.2 mg/L in order to fight further contamination but no more than 2.0 mg/L to avoid taste and odor issues. Because the water will be stored in the house for a few days, **it is recommended to have a free chlorine residual between 0.6 mg/L and 1.0 mg/L.**

Typically, a dose of 2.0 mL of Cloral for a 5 gallon rubber results in an appropriate free chlorine residual that will protect the water for the maximum two days of storage. It is important to sensitize the communities to not use Cloral past its expiration date, as the concentration of bleach in the solution decreases rapidly after the date.



Community Mobilization and Training

For the community to adapt HHWT, sensitization, training, and follow up are necessary. It is important that the community understands why they should be treating the water, and why the committee needs to be responsible for maintaining funds to buy more Cloral when needed. A summary of the process is found below:

Step	Description	Time Frame
Preliminary	Strategy explanation and health/sanitation sensitization	1 week
Community preparation	Money contribution follow up, formation and training of Water Committee, latrine improvements or construction	2 weeks
Training	Distribution of HHWT materials, training on water treatment procedure	1 week
Follow up	Following on treatment and use of water, and users reactions to the treatment	2 weeks (+ punctual visits over 1 year)

Usually, one person (named "chlorinator") is trained per each 50 people. The role of the committee is mainly to supervise HHWT at village level and to organize users' contribution for the renewal of the Cloral bottles. The follow up phase will extend well beyond two weeks, as it is important to observe the long term acceptance of HHWT over one year. The first two weeks of follow up, it is important to be present in the community to dispel fears and to correct any mistakes in the dosing of the water.

Each household receives one rubber (5 gallon or 2.5 gallon depending on the size of the family) and one drinking cup to be used specifically for drinking water purposes. For every 50 people in the community, one bleach kit is given that includes yard of white cloth, plastic 20L bucket, and two syringes. In order to promote and encourage the use of HHWT, Inter Aide subsidizes 60% of the total of all of these supplies. The 40% is the responsibility of the community, which has also then to fully cover the renewal of the Cloral bottles.

Store Supply Chain

An important criteria for HHWT to consistently work is for there to always be a supply of Cloral in local shops for the communities to purchase when needed. To set up the stores, Inter Aide supplies a capital to the store – a start up amount of bottles of Cloral. When the initial stock decreases, the store keeper uses the money from selling the capital to purchase more Cloral from the supplier in Makeni (main town of Bombali District). A network of five stores started to serve the demand of the communities in Northern Bombali District. A Memorandum of Understanding is signed between Inter Aide, the Store keeper, and in witness of the local authorities to ensure that the profit of selling the Cloral doesn't exceed 1,000 Le for the affordability to the community (~0.3 USD or between 15 and 20% of the selling price), and to stress the importance of having Cloral always in stock. The expiration date should always be noted by the storekeeper, so they don't lose any product that expires quickly. All store keepers are trained in how to use the Cloral product to safely treat drinking water. They also serve as good advertisements to people who may want to try HHWT on their own.



Water treatment includes sieving the water before adding the Cloral medicine



Bottlenecks of HHWT

Mistakes in Dosage – the syringes used for dosing the rubbers are not sustainable. The black markings rub off over time especially when exposed to the bleach. Cuttings have to be made carefully in the syringe with a knife so to mark the corresponding level for the dose to use when the markings rub off. Even with a proper mark, some people still get confused as to where to stop the syringe for the correct dose. This can get even more complicated if there are two doses, one for the rainy season and one for the dry season. *For all these reasons, we would like the manufacturer to make a special bottle where the lid is in a 2mL measurement for easy use to treat a 5 gallon rubber. Furthermore, a message about how to treat water could be printed on the Cloral label.* Support from the Ministry is needed.

Creating the Demand – With more communities and individuals using HHWT as an option to treat their water, the greater the demand for Cloral bleach will become. All organizations and private groups working in HHWT should use the same chlorine make so to create a bigger demand from the manufacturer.