



LifeStraw® Community Training of Trainers Manual

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LifeStraw® 
Community | by VESTERGAARD

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Introduction to the Curriculum

This is a one-day curriculum, designed to train community health workers or other health educators to disseminate knowledge and awareness about the use of LifeStraw® Community and the importance of safe water, safe storage and complementary hygiene practices. This curriculum is a sample intended for adaptation to local contexts and languages.

Additional Program Specific Training

This curriculum does not include training for staff about their particular roles, duties and expectations related to the program. Therefore, it is recommended that additional sections or trainings be added to address operational details of the program, explain educator tasks, review monitoring and evaluation procedures, address administrative issues, and provide any other program specific details. In this subsequent session, educators should be walked through their entire training protocol that has been adapted to be specific to the program so they are clear on exactly the order of education they will provide, the messages they will relay, the level of demonstration they will perform, etc.

Data Collection

This manual does not provide training on data collection or evaluation methods. Each program should develop its own monitoring methodology and study protocols that are based on the goals and objectives of the program. For suggestions on how to collect LifeStraw® specific user information, please contact us at info@lifestraw.com



Preparing for the Training

Training Supplies and Equipment

If available, a laptop and a projector can be used to present PowerPoint presentations during the training sessions. When planning to use a projector, make sure a screen or large white wall is available to serve as a screen, and the room can be darkened.

If power outages are an issue or if electronic equipment is not available then flip charts should be prepared in advance and used for training sessions. Procure a flip chart stand or ensure that there's a method of hanging the flip chart paper on the wall (it may be necessary to bring tacks or tape). Make sure that an adequate supply of markers is available.

Supplies Needed:

- Computer and projector (in the case that ppt will be used)
- LifeStraw® Community filter, set-up, already filtering
- LifeStraw® Community un-assembled; still in packaging
- A 20 liter supply of dirty water (you may want to mix dirt into the water so it appears turbid, so that during the training, trainees will see the filter's ability to remove turbidity).

- A bucket or pitcher to fill the filter with water
- A basin to collect dirty water from backwash container
- Clear cups to drink from and to show the filtrated water
- A clean cloth to demonstrate cleaning of the pre-filter
- Written scenarios for role play
- Flip chart for group work
- Pens for each participant
- Printed handouts for participants. The handouts should include the following:
 - A comprehensive list of educator tasks including the training procedures and expectations
 - Role-play scenarios

Number of trainees

A training group should contain a maximum of 50 participants. If it's a large training group, the trainer should consider splitting the training forum into two groups. The trainer could either hold two identical training sessions on adjacent days, or hold two simultaneous training sessions in separate venues. The quality of the training and the ability for participants to participate will suffer if the group is too large.

Before the training begins:

- Ensure you have all the necessary supplies
- Ensure you have a method of keeping time
- Designate a note taker
- Circulate an attendance sheet



1 Opening and Introduction

| Content/Tasks | Duration |
|---------------------------------------|----------|
| 1.0 Introductions | 5 mins |
| 1.1 Purpose of the Training | 10 mins |
| 1.2 Review the Training | 5 mins |
| 1.3 Setting Training Rules/Guidelines | 10 mins |
| Total Duration | 30 mins |

1.0 Introductions

The trainer should start out by introducing him/herself and welcoming the training participants.

The participants should go around the room and introduce themselves to the group. Ask participants to give their name, where they are from, and what they expect to learn from this training. Write responses on a flipchart about what they expect to learn so that you can come back to it at the end.

1.1 Purpose of the training

The trainer should explain the purpose of the training session. The language can be modified according to program goals:

The purpose of this training session is to become familiarized with waterborne diseases, to learn how to operate the LifeStraw® Community filter and teach others how to operate the filter, to learn more about health practices related to water and hygiene, and to develop effective messaging for your own community to explain the importance of safe water and the importance of using the LifeStraw® Community Filter.

LifeStraw® Community program goal and objectives:

(Prior to beginning your training, fill in the appropriate Program goal and objectives as well as any other details to describe the program)

Program Goal: _____

Objectives: _____

Other program details: _____

1.2 Review the training agenda

| Session | Time Allotted |
|---|---------------|
| 1. Opening and Introductions | 30 mins |
| 2. Understanding waterborne diseases | 45 mins |
| 3. Understanding and Using the LifeStraw® Community | 1hr, 45 mins |
| Lunch Break | 1 hour |
| 4. Health Education Messaging | 1 hr, 15 mins |
| 5. Review Session | 45 mins |
| Total Duration | 6 hours |

1.3 Setting Training rules/guidelines



Ask participants to come up with rules – write them on chart paper

Examples:

- Start and end on time
- Be respectful of others opinions
- No question is a bad question
- Don't talk when others are speaking

END SESSION



2 Understanding waterborne disease

| Content/Tasks | Duration |
|---|----------|
| 2.0 Importance of safe water | 5 mins |
| 2.1 Water Contamination | 10 mins |
| 2.2 Prevalence of waterborne disease | 5 mins |
| 2.3 Vulnerable groups | 5 mins |
| 2.4 Disease causing microbes that can be found in water | 10 mins |
| 2.5 Personal Experiences with waterborne disease | 10mins |
| Total Duration: | 45 mins |

2.0 Importance of safe water

Water is necessary for health. It is important to ensure that you drink enough safe, clean water because water:

- Detoxifies the body preventing tiredness, migraines and constipation
- Protects and moisturizes the joints and skin
- Helps our organs to absorb nutrients better
- Regulates body temperature

2.1. Water Contamination

Water can also be very harmful if it is not safe. Water can become contaminated with many different microbes that can cause disease. Microbes that cause diarrhea are present in feces. These are ingested when a person drinks contaminated water.

Microbes are too small to see. Clear water can be very contaminated.



Group Brainstorm

Using chart paper, ask group to provide examples of how their water sources can become contaminated:

Examples:

- Animal and human feces on the ground get washed into water sources (surface water, shallow wells) by rain
- Sewage is dumped in surface water sources
- Crossed connections are accidentally made between sewer and water lines
- Cracks or holes in water pipes allow surface contaminants (animal and human feces) to get into water lines (particularly when there are power outages which shut off pumps and create negative pressure which sucks surface contaminants into the water lines)
- People with fecally-contaminated hands touch water stored in wide-mouth containers such as buckets

2.3 Prevalence of waterborne disease

Global Prevalence

Every year there are **2 million diarrheal deaths** related to unsafe water, sanitation, and poor hygiene. Most of these deaths occur among children under 5 years of age (WHO, 2012). These diarrheal diseases kill more children than AIDS, malaria, and measles combined. This makes diarrheal disease the second leading cause of death among children under five (CDC, 2012).

Program-Specific Data: The problem of waterborne disease in our community

(Fill in information about diarrheal, cholera, typhoid, cryptosporidium, high risk groups, etc. relevant to your program and program area)

2.3 Vulnerable Groups



Using chart paper, ask participants to list vulnerable groups and/or their characteristics.

Examples:

- People living with HIV/AIDS
- Babies
- Young children
- Pregnant women
- Elderly people
- Anyone who is already sick or has a suppressed immune system

2.4 Disease Causing Microbes that can be found in water

Review disease causing microbes in water – note those that have been highlighted tend to be more commonly known to the audience, but you can choose to emphasize certain diseases based on the context. Discuss that many forms of microbes cause diarrhea and other illness and these are only examples (there are more) of microbes that are found in water and cause illness.

LifeStraw® Community removes bacteria, viruses and protozoa, including all of the following pathogens:

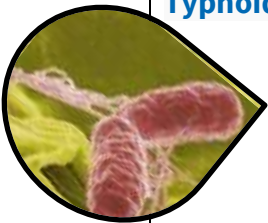
Protozoan Parasites




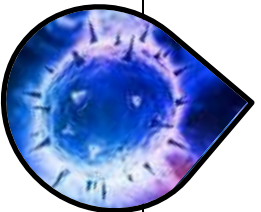
| Disease | How contamination occurs | Symptoms |
|--------------------------|--|--|
| Amoebiasis | Sewage, non-treated drinking water, flies in water supply | Abdominal discomfort, fatigue, weight loss, diarrhea, bloating, fever |
| Cryptosporidiosis | Animal manure, seasonal runoff of water. | Flu-like symptoms, watery diarrhea, loss of appetite, substantial loss of weight, bloating, increased gas, nausea |
| Cyclosporiasis | Sewage, non-treated drinking water | cramps, nausea, vomiting, muscle aches, fever, and fatigue |
| Giardiasis | Untreated water, poor disinfection, pipe breaks, leaks, groundwater contamination. | Diarrhea, abdominal discomfort, bloating, and flatulence |
| Microsporidiosis | <i>Encephalitozoon intestinalis</i> has been detected in groundwater | Diarrhea and wasting in immuno-compromised individuals.. |
| Schistosomiasis | Fresh water contaminated with certain types of snails that carry schistosomes | Blood in urine (depending on the type of infection), rash or itchy skin. Fever, chills, cough and muscle aches |
| Guinea Worm Disease | Stagnant water containing larvae, generally in parasitised Copepoda | Allergic reaction, urticaria rash, nausea, vomiting, diarrhea, asthmatic attack. |
| Worms | Drinking water contaminated with eggs | Abdominal pain, severe weight loss, itching around the anus, nervous manifestation |
| Ascariasis | Drinking water contaminated with feces (usually canid) containing eggs | Mostly, disease is asymptomatic or accompanied by inflammation, fever, and diarrhea.. |

Bacteria

| Disease | How contamination occurs | Symptoms |
|--------------------------|---|--|
| Botulism | Bacteria can enter an open wound from contaminated water sources. Can enter the gastrointestinal tract by consuming contaminated drinking water or (more commonly) food | Dry mouth, blurred and/or double vision, difficulty swallowing, muscle weakness, difficulty breathing, slurred speech, vomiting and sometimes diarrhea. Death is usually caused by respiratory failure. |
| Cholera | Drinking water contaminated with the bacterium | In severe forms it is known to be one of the most rapidly fatal illnesses. Symptoms include very watery diarrhea, nausea, cramps, nosebleed, rapid pulse, vomiting, and hypovolemic shock (in severe cases), at which point death can occur in 12–18 hours. |
| <i>E. coli</i> Infection | Water contaminated with the bacteria | Mostly diarrhea. Can cause death in immuno-compromised individuals, the very young, and the elderly due to dehydration from prolonged illness. |
| Dysentery | Water contaminated with the bacterium | Frequent passage of feces with blood and/or mucus and in some cases vomiting of blood. |
| Salmonellosis | Drinking water contaminated with the bacteria. More common as a food borne illness. | Symptoms include diarrhea, fever, vomiting, and abdominal cramps |
| Typhoid fever | Ingestion of water contaminated with feces of an infected person | Characterized by sustained fever up to 40°C (104°F), profuse sweating, diarrhea may occur. Symptoms progress to delirium and the spleen and liver enlarge if untreated. In this case it can last up to four weeks and cause death. Some people with typhoid fever develop a rash called "rose spots" which are small red spots on the abdomen and chest. |



Viruses

| Disease | How contamination occurs | Symptoms |
|---|--|--|
|  Hepatitis A | Can manifest itself in water (and food) | Symptoms are only acute (no chronic stage to the virus) and include Fatigue, fever, abdominal pain, nausea, diarrhea, weight loss, itching, jaundice and depression. |
| Poliomyelitis (Polio) | Enters water through the feces of infected individuals | 90-95% of patients show no symptoms, 4-8% have minor symptoms (comparatively) with delirium, headache, fever, and occasional seizures, and spastic paralysis, 1% have symptoms of non-paralytic aseptic meningitis. The rest have serious symptoms resulting in paralysis or death |
|  Rotavirus | Rotavirus is transmitted through feces which can leach into a water supply and then be ingested. | Symptoms include severe watery diarrhea, often with vomiting, fever and abdominal pain. Infants and young children are most likely to get Rotavirus disease. They can become severely dehydrated and need to be hospitalized and can even die. |

After this portion, ask for a few volunteers to repeat how water is contaminated and to list some common waterborne diseases.

2.5 Personal Experiences with Waterborne disease

Develop questions that are relevant to your community that help them connect with understanding the results of unsafe water and waterborne disease.

Examples:

- How many people in the room have ever experienced stomach issues from drinking contaminated water? (show of hands)
- How many people have ever had typhoid (or disease focus of program)?
- How many people have children who have had typhoid (or disease focus of program)?
- How many of you have had to spend money at the clinic for treatment of waterborne disease?

Write a few of your own questions for the trainees:

1. _____

2. _____



Conclude with brief discussion about how waterborne disease impacts your community – ask trainees to comment, and write comments on chart paper

END SESSION



3 Understanding and Using the LifeStraw® Community

| Content/Tasks | Duration |
|------------------------------------|--------------|
| 3.0 About the LifeStraw® Community | 15 mins |
| 3.1 Assembly | 15 mins |
| 3.2 Use and Maintenance | 60 mins |
| 3.3 Review | 15 mins |
| Total Duration | 1 hr, 45mins |

3.0 About the LifeStraw® Community

LifeStraw® Community filter provides safe drinking water that can significantly reduce waterborne and diarrheal illness, including all those listed in the previous session, for children and adults.

Performance

- Hollow fibre filtration technology converts contaminated water into safe drinking water
- Removes:
 - 99.9999% (Log 6) of bacteria
 - 99.999 % (Log 5) of viruses
 - 99.99% (Log 4) of protozoan parasites
- Removes dirt and cloudiness, making water clear

International Standards and Testing

- Meets "Highly Protective" category by World Health Organization
- Meets United States EPA drinking water standards
- Externally lab-tested

Evaluating household water treatment options: Health-based targets and microbiological performance options (WHO, 2011)

| Target | Log ₁₀ reduction required: bacteria | Log ₁₀ reduction required: viruses | Log ₁₀ reduction required: protozoa | Examples |
|-------------------|---|---|--|--|
| Highly protective | ≥4 | ≥5 | ≥4 | Ultrafiltration, boiling |
| Protective | ≥2 | ≥3 | ≥2 | Microfiltration, flocculent disinfection |
| Interim | Achieves "protective" target for two classes of pathogens and results in health gains | | | Chlorine, ceramic, bio sand |

*LifeStraw® Family 1.0, 2.0 and Community use ultrafiltration technology. Independent laboratory tests have confirmed they meet the category of "Highly Protective".

Lifetime

- Estimated lifetime filtration capacity of 70,000 -100,000 liters, enough to serve community settings for several years
- Once the filter reaches the end of its estimated lifetime, it will become clogged and no longer allow water to pass through. It will never release dirty water.
- Is sufficient to serve large groups of people for several years
- Designed for durability in difficult and hard-to-reach settings

Capacity

- 25 litre dirty water tank and 25 liter safe storage tank yield a total capacity of 50 liters
- Filtration rate: approx. 12L/hr

Easy to Use

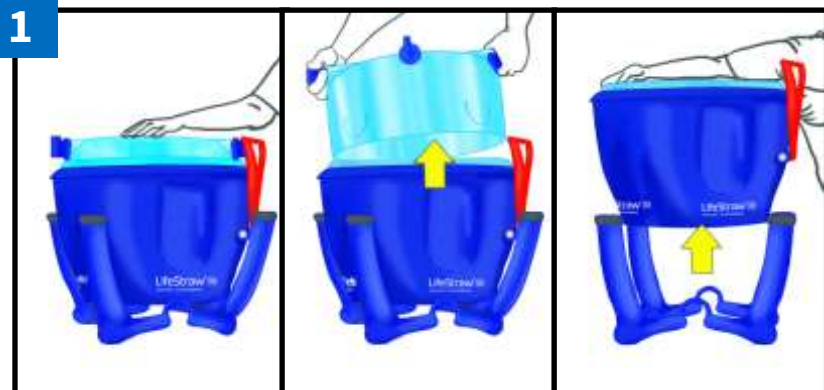
- Easy to operate
- No repeat intervention
- Does not require electrical power or batteries
- Does not require running water or piped water supply
- Easy-to-clean pre-filter and purification cartridge

No Chemicals

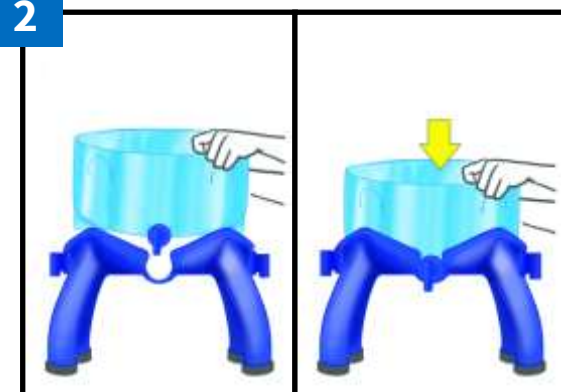
- Contains no chemical treatment
- No bad taste
- No strong odor
- Uses raw materials that meet US Food and Drug Administration regulations and standard

Ask if anyone has any questions about the features of the product

3.1 Assembly: Have at least one unit that has not been assembled and is in packaging in order to physically demonstrate assembly. Use the below instructions as a guide but this should be done physically in front of the trainees.



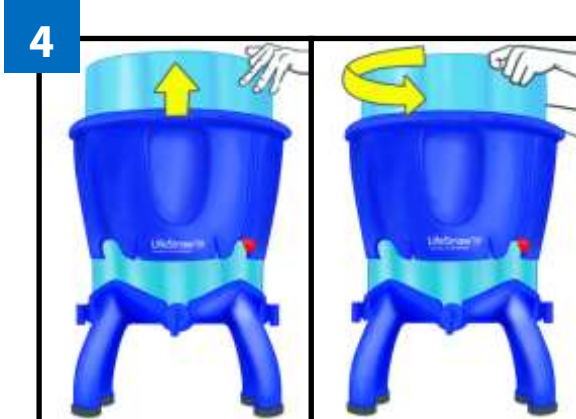
Separate top and bottom components



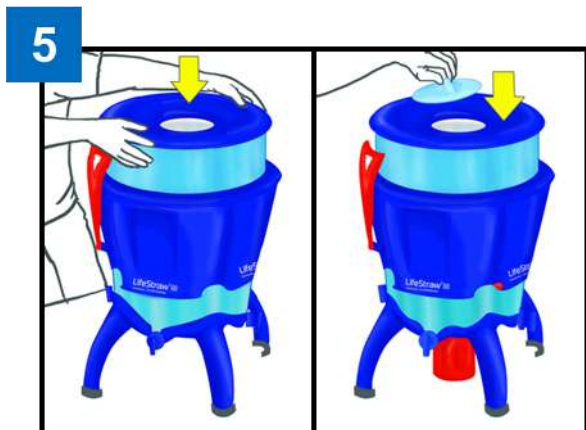
Attach the safe storage container to the feet



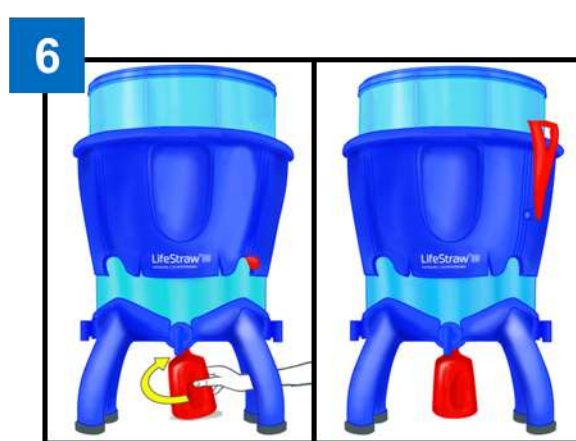
Place top parts on safe storage container



Pull up and turn top container



Secure the pre-filter by pushing it down; place the lid on the pre-filter



Place the backwash bottle; filter is ready to use

3.2 Use and Maintenance of the Filter

Prior to physically demonstrating the filtration process, watch the “How it works” video for an overview:

<http://youtu.be/A5AhVd-kU48>



If no video is available, review parts below and then move to explanations below.

First time use

The very first batch of filtered water should be discarded in order to rinse out any dirt or material that may have gotten into the filter during the shipping process.

Selecting a filter location

The filter should be placed on a level surface to allow for ease of fetching water from the taps. A table or desk is ideal. Do not keep the filter in direct sunlight. Select a location in the shade or inside the house or compound.

Demonstrate Filtering

You may want to have already poured dirty water in the filter so enough is filtered that people can access the clean water immediately. Use turbid water either from a community source, or mix some dirt into the source water you are using so that it appears dirty. This will help the trainees to see the actual performance of the filter. Make sure to show the participants the color of the source water you are using. Encourage them to look into the dirty water tank and see for themselves. It is also helpful to have two clear glasses or pitchers to show the two types of water (filtered and unfiltered) side by side during the training.



Daily Use

Instructor should physically perform each step of the process and explain what is happening

1



Pour unfiltered water through the pre-filter into the dirty water tank.

Wait until some water starts flowing into the safe storage container.

Notes: The pre-filter removes coarse particles larger than 0.8 microns. Water should always be poured through the pre-filter to ensure that the actual filter inside the unit does not get clogged. This is only the first step in the filtration process.

2



Backwash: Pull the backwash handle down to its end position, then release and let the handle return back on its own (dirty water will flow into the red backwash bottle).

Notes: It is important to wait until some water is dripping into the safe water tank to ensure that the backwash pump (inside the unit) is full of water when you perform the backwash. Backwashing should be done each time you filter because it helps to clean debris from inside the filter, improving the flow rate, and elongating the life of the filter.

How it works: When the handle is pulled down, a bulb full of water inside the tank is compressed, forcing clean water back through the membrane and flushing out any dirt or large particles that have remained inside. The dirty water then flows into the red container.

3



Throw away water from the backwash bottle. It contains dirty water, which should not be used for drinking or other purposes.

Notes: The backwashing liquid can be thrown outside into the dirt, or disposed of in a latrine. Do not dispose of it into or near a water source.

4



Put the backwash bottle back in its position. It should be in the center of the filter.

5



Water will now flow into the clean water tank. Open any of the four taps to collect and drink purified water.

Notes: Always make sure you use a clean drinking water or storage vessel to collect the water.

How it works: Water passes from the dirty water tank into the ultrafiltration membrane. Viruses, bacteria, parasites and dirt are too large to pass through the holes in the membrane. Only water passes through and can then flow into the safe water tank.

6



DAILY CLEANING:

At the end of every day, remember to clean the pre-filter and the dirty water container with water and a clean cloth or soft brush. Do not use soap to clean the pre-filter or dirty water container, as it can clog the filter.

Notes: Cleaning the pre-filter and dirty water tank is important for extending the lifetime of the filter and maintaining a high flow rate. If the pre-filter becomes clogged, you can also soak it in water over night and try cleaning it in the morning.

Weekly Cleaning

1



Drain all the water from your filter into another clean tank or vessel to use for the cleaning process.

Notes: It is useful to have clean water for the cleaning process since you will be cleaning inside the safe water tank and the taps and do not want to risk contamination

2



Clean the pre-filter and the dirty water container with water and a clean cloth or soft brush. Do not use soap to clean the pre-filter or dirty water container, as it can clog the filter.

Notes: If the pre-filter becomes clogged, you can also soak it in water over night and try cleaning it in the morning.

3



Pull the red lock and lift the upper part off of the safe water tank. Make sure to place it on a clean surface.

Notes: Do not let the bottom of the upper part come into contact with any dirty surfaces.

4



Wash both the inside and the outside of the safe storage container and the 4 taps with soap and purified water.

Notes: Make sure to wash your hands with soap before cleaning the safe storage container. You can also wash the bottom of the upper part. Instead of soap, you can also use a small amount of bleach or chlorine mixed with purified water to sterilize the container and taps.

5



Place the upper part back onto the safe storage container and make sure it clicks into place. Resume with normal every-day use.

Reminders about use

- Always pour water through the pre-filter. This will keep the main filter from clogging.
- Always use a clean cup or drinking vessel when consuming water from the filter
- Wash hands before drinking and before cleaning the filter
- Do not touch the bottom of the taps with dirty hands or vessels
- It is best to use the built-in safe storage container and not to store water in other vessels where it may be contaminated. If you need to use additional storage containers, make sure they are properly cleaned and sanitized.
- Remember to backwash and clean the pre-filter daily, this will help increase the life of the filter.
- Keep the filter somewhere out of direct sunlight, either inside the house or in the shade.

3.3 Review

Emphasize the change in the clarity of the water after filtration. Note to participants that it is not only removing the dirt and cloudiness, but also removing the pathogens that cannot be seen. The trainer should drink the filtrated water to show trust in the product. You should also encourage participants to try drinking the filtrated water and solicit their feedback.

LifeStraw® Technology training is now complete.

Ask for a volunteer to demonstrate each of the following steps:

- Filtration process
- Ask others to comment so as to engage the whole group
- You may want to encourage several people to walk through it quickly
- Cleaning
- Description of how the filter works

END SESSION



4 Health Education Messaging

| Content/Tasks | Duration |
|--|---------------|
| 4.0 Overview for LifeStraw® Community programs | 5 mins |
| 4.1 Drinking safe water | 5 mins |
| 4.2 The importance of hand washing | 10 mins |
| 4.3 Washing fresh fruits and vegetables | 5 mins |
| 4.4 Development of behavior change messages for your community | 20 mins |
| 4.5 Role Plays | 30 mins |
| Total Duration | 1 hr, 15 mins |

4.0 Overview for LifeStraw® Community programs

LifeStraw® Community is appropriate for a variety of settings including schools, health facilities, large families or households, emergency settings such as refugee and IDP camps, community dining halls and workplaces. For that reason, there may be many different context-specific health information messages that can be tailored to a specific program based on the setting and goals. Program implementers can supplement or replace the basic messages in the following section with more program-specific education and behavior change messaging.

We also include a section where trainees can develop and tailor culturally relevant safe water messages for reaching their communities during the time of the training.



LifeStraw® filtered water can be used for:

Trainees should list on chart paper the uses for safe water, based on the context of the program.

Examples include:

- Drinking
- Hand Washing
- Washing fresh fruits/vegetables
- Taking medicines
- Mixing ORS solution
- Brushing teeth
- Other uses involving consumption of water

4.1 Drinking Safe Water

Trainees should be encouraged to discuss with program participants ways of accessing safe water throughout the day including wherever the LifeStraw® Community is present.

- It is important that everyone drinks safe water throughout the day. People need to access safe water not only in their homes but also at work, at health facilities, at school etc.
- Drinking enough water is an important part of daily health for adults and children



4.2 The Importance of Hand washing

Trainer should demonstrate proper hand washing practices during this section.

Many waterborne illnesses are associated with poor hygiene. Hygiene refers to acts that lead to good health and cleanliness, such as frequent hand washing, face washing, and bathing with soap and water (CDC, 2011).

- Washing hands and making sure they are clean is one of the best ways to prevent sickness.
- Use LifeStraw® filtered water and soap to wash your hands. Wet your hands, and lather them with the soap. Make sure to use both hands, spending at least 20 seconds scrubbing your hands, then rinsing with filtered water. Dry hands by air or with a clean cloth. Do not use a cloth that has been used for other things.



Have trainees list on chart paper the appropriate indications for hand washing.

Examples:

- Before preparing food
- Before eating food
- After using the toilet
- After cleaning up a child
- Before and after caring for someone sick
- After touching an animal or animal waste
- Before and after treating a wound

4.3 Washing fresh fruits and vegetables

The surface of fresh fruits and vegetables can carry the same germs that are found in dirty water that can cause diseases like diarrhea, cholera and typhoid.

- There are many ways that fruits and vegetables can become contaminated. Contamination can occur while still on the plant in fields or orchards, during harvesting, transport, at the market, or in the home.
- It is important to wash fresh fruits and vegetables with safe, LifeStraw® filtered water before consuming them. This will prevent the community from becoming sick from the food.
- First scrub the fruits and vegetables with filtered water to get all the dirt and organisms off, then rinse again with clean, filtered water.



4.4 Development of behavior change messages for your community



Benefits of LifeStraw®

Now that the training has covered all the information on how water is contaminated, how the LifeStraw® works and health messages, the trainer should ask the group how can we reach out to community members about the importance of safe drinking water?

What are messages that will convince people to use the LifeStraw® and practice proper hand washing and other healthy behaviors?

Write suggestions on flip chart paper and post them on the wall.

Encourage people to think about some of the benefits of LifeStraw® listed below if they do not come up with them.

Examples:

- **Prevents diarrhea, typhoid, cholera and dysentery** (add specific diseases targeted by your program) – especially important for children
- LifeStraw® filters out all of the dirt, so water comes out clear and free of any dirt
- No chemicals are needed, so there's no bad taste or smell
- There's no risk of over or under-dosage because no chemicals are necessary
- LifeStraw® can provide cost-savings:
- Money saved from not buying fuel for boiling or water treatment supplies
- Money saved from avoiding illness:
- Transport cost to get to hospital
- Cost of clinic visit and medicine for waterborne diseases such as: diarrhea, cholera, typhoid, and respiratory diseases caused by smoke inhaled when boiling water.
- LifeStraw reduces waterborne disease resulting in fewer sick days, fewer wages lost, and more time to participate in productive work
- The money that is saved can be used for other purposes such as buying food, paying school fees, buying household goods, etc.
- Gender empowerment: women & girls don't need to waste time fetching firewood. Women can be more involved in more productive work and the girl child has more time for school work.
- Environmental impact: reduction of deforestation because there's no need for firewood, reduction of carbon emission from burning fuel

Vote on the top 4 most relevant messages to be used by the program.

Possible health messages to convince the community about the importance of using LifeStraw: *(Record the top 4 health messages decided by the group)*

1. _____

2. _____

3. _____

4. _____

4.5 Role-plays

This section is reserved for trainees to practice scenarios that will be encountered during the program to ensure that educators are prepared to demonstrate use of the LifeStraw®, relay important health and education messages, and answer questions. Participants can be split into groups of 2 to 4 people depending on size and may perform in front of the large group.

Ideally, role play scenarios would include training to the final recipient of the LifeStraw® Community filters, so one trainee assumes the role of the educator (e.g., CHW or HWTS staff) and another plays the interviewee (e.g., the LifeStraw® recipient). Role play scenarios are project and context specific and should be worked out ahead of time by the trainer. The groups can be given a couple of minutes to prepare their role play and then should perform in front of the entire group. Other trainees and the trainers should observe carefully what happens and give constructive feedback right after the role-play. If the training group is particularly large, then role play groups can contain 2-5 people (additional roles may include that of the father, mother, children, etc).

It is important to communicate that the role plays should be relatively short (no more than 3 minutes each) and should be specific to the proposed scenario.

END SESSION



5 Review Session

| Content/Tasks | Duration |
|------------------------|----------|
| 5.0 Recall | 30 mins |
| 5.1 Wrap Up Discussion | 15 mins |
| Total Duration | 45 mins |

5.0 Recall

Trainees will be split into teams and asked quiz questions to assess knowledge gained throughout the course of the training.

The trainer should have the quiz questions prepared ahead of time on flip chart or PowerPoint. You may want to assign different values to the questions based on the degree of difficulty. You can then ask each team the question and have them write the answer on a piece of paper and submit it. Use a piece of flip chart paper to tally the results.

Sample Quiz Questions

| Question | Answer | Value |
|---|---|-------|
| 1. What is the step after filling the pre-filter with water, and waiting for some water to start flowing into the safe storage container? | <ul style="list-style-type: none">• Pull backwash handle | 100 |
| 2. How often should you clean the pre-filter | <ul style="list-style-type: none">• Daily | 100 |
| 3. How many liters of water can fit into the dirty water bucket? | <ul style="list-style-type: none">• 25 | 100 |
| 4. How long should someone spend washing their hands? | <ul style="list-style-type: none">• 20 seconds | 100 |
| 5. Name three types of things that the LifeStraw® filter blocks or removes from dirty water | <ul style="list-style-type: none">• Bacteria• Viruses• Protozoan parasites• Dirt particles | 200 |
| 6. Name 3 common waterborne diseases | <ul style="list-style-type: none">• diarrhoea• guinea worm• cholera• typhoid• (other answers also ok) | 200 |

| | | |
|---|---|-----|
| 7. Name 3 uses for LifeStraw® filtered water | <ul style="list-style-type: none"> • Drinking • Washing hands • Washing fresh fruits and vegetables • Other answers possible | 200 |
| 8. Name 3 times that are appropriate for hand washing | <ul style="list-style-type: none"> • Before preparing food • Before eating food • After using the toilet • After cleaning up a child • Before and after caring for someone sick • After touching an animal or animal waste • Before and after treating a wound • | 200 |
| 9. Where should the filter be stored? | <ul style="list-style-type: none"> • On a flat surface away from direct sunlight | 200 |
| 10. Name 4 benefits of using LifeStraw® filtered water | <ul style="list-style-type: none"> • (Refer to benefits list and list developed during training) | 300 |
| 11. Bonus question: what are the size of the pores of the membrane inside the LifeStraw® responsible for blocking the diseases? | <ul style="list-style-type: none"> • 20 nanometers | 500 |

5.1 Wrap-up discussion

Opportunity to provide feedback on the training and ask additional questions before the session is concluded with the post-test.

The trainer should wrap-up the day by thanking everyone for their participation and explaining that this is an opportunity to ask additional questions and to provide feedback on the training session before the day is concluded. Some sample questions to pose to the group are below.

1. What important things did you learn?
2. Do you have any questions about the LifeStraw®?
3. Do you have any questions about other parts of the training?
4. Do you have any suggestions for the group about how you will conduct your own trainings in the household/community?

END TRAINING

Frequently Asked Questions (FAQs)

1. How is the product different from other water filters or treatment methods? How does it compare?

Below is a summary of levels of protection from WHO's: Evaluating household water treatment options: Health-based targets and microbiological performance options. LifeStraw® Family and Community products meet the highly protective category. Examples of other treatment options are listed below.

| Target | Log ₁₀ reduction required: Bacteria | Log ₁₀ reduction required: Viruses | Log ₁₀ reduction required: Protozoa | Examples |
|-------------------|---|---|--|--|
| Highly protective | ≥4 | ≥5 | ≥4 | Ultrafiltration*, boiling |
| Protective | ≥2 | ≥3 | ≥2 | Micro filtration, flocculant disinfection |
| Interim | Achieves "protective" target for two classes of pathogens and results in health gains | | | Chlorine, ceramic filters, biosand filters |

*LifeStraw® Family 1.0, 2.0 and Community use ultrafiltration technology. Independent laboratory tests have confirmed they meet the category of "Highly protective."

LifeStraw® Community is also a long-lasting technology: it should last in community settings for 3-5 years without need of repeat intervention, replacement parts or an outside energy source. The filter also is free from chemicals and instead uses size exclusion to purify water. In addition to removing pathogens, the filter also removes turbidity, making drinking water clear and more appealing to drink.

2. How does the filter work?

- 25 litres of untreated water is poured into the top of the unit, also called the dirty water container
- The pre-filter removes coarse particles larger than 0.08 mm
- The ultrafiltration hollow-fibre membrane cartridge then stops all turbidity particles and pathogens larger than 20 nanometres (including bacteria, viruses and protozoan cysts). Particles and microbes larger than 20 nanometres stay on the dirty side of the membrane and clean/purified water passes through the membrane
- Purified water can be collected from any of the four taps

- The backwashing handle allows semi-automatic backwashing; when it is pulled down and released, pathogens and dust particles on the dirty side of the membrane are lifted by backpressure and then flushed out into the red backwash container

3. Does the pre-filter remove waterborne disease? Where is the actual filter?

The pre-filter only removes particles that are large than 80 microns. The majority of waterborne disease will not be removed by the pre-filter alone, but will need to go through the ultrafiltration process in the larger purification cartridge inside. Some larger organisms such as guinea worm, will be blocked by the pre-filter. But in general, its purpose is to remove larger dirt and sand particles, thereby preventing them from flowing into the purification cartridge and clogging it.

4. Why can't you use soap in the pre-filter and in the dirty water bucket?

The pores in the ultrafiltration membrane inside are so small that the soap can actually clog them and slow down the flow rate or even block the filter and pre-filter. Using soap can also cause the filtered water to taste soapy.

5. How do you clean inside the membrane?

The inside membrane is cleaned by pulling down the red handle (backwashing). This is the best way to make sure it is functioning properly. When you backwash, you force clean water through the other direction of the membrane, which helps to remove dirt and pathogens that may be stuck on the membrane walls. That water is then flushed out into the red backwash container in the bottom.

6. What is inside the main body – why can't it be opened?

The ultrafiltration membrane cartridge as well as the backwash bulb and several connector hoses are located in the main body. This is where the main filtration process takes place. This process is closed so that it cannot be tampered with, which ensures quality. This part is not to be opened unless you are a trained LifeStraw® representative.

7. When the filter has finished its useful life (reached 100,000 liter or 3 year capacity) what happens?

When the filter has reached its maximum life, it simply becomes blocked and will no longer filter water even after backwashing. This occurs from buildup of small dirt particles and other microscopic organisms over time. The filter will never produce unsafe water; it simply stops working. Frequent backwashing helps to extend the life of the filter and keep the flow rate high.

8. What is the flow rate? How long does it take to fill up the safe storage container?

The flow rate of the filter is approximately 12 liters per hour but may depend on the turbidity of the water and its age. This means it takes about 2.5 to 3 hours to fill the safe storage container. The flow rate improves with frequent backwashing.

9. Why is the filter named “LifeStraw® Community”?

The very first LifeStraw® that was ever produced was for individuals. This LifeStraw® is smaller and only makes enough safe water for one person. The company then created a LifeStraw® Family so that it could filter enough water for a household. LifeStraw® Community is designed for multiple households or community settings like schools and health facilities. The LifeStraw® Community does not contain any other medicines or chemicals.