

GUIDE FOR TRAINING OUTREACH WORKERS

MODULE 2: MAKING WATER SAFE TO DRINK

Session 1

PRETREATMENT

Session Objectives

By the end of this module, the participants will be able to:

1. Describe the different types of “dirty” (unclear/muddy) water and local names.
2. Describe the four methods for pretreating water by making “dirty” water clear (but not drinkable/potable).
3. List advantages and disadvantages of the different methods for making dirty water clear but not potable.
4. Identify community barriers to implementing the four methods.



Water Clarity/Turbidity:

Water that is cloudy or has tiny visible particles (water that *looks* dirty) is called turbid. If turbid water is not an issue in your location, you can skip this session. If there is a problem with turbidity during all or part of the year (for example, in the rainy season), and you do include this session, be sure to explain clearly that pretreatment or clarifying water is a preliminary step that improves water clarity but does not yet make it safe to drink. Only include the pretreatment methods that are used or are available in your area. After clarifying turbid water, people still need to treat it using one of these four methods: boiling, filtering, chlorinating, or using solar disinfection.

SESSION AT A GLANCE: Pretreatment

Activity	Time	Materials
A. Introduction to the Session	5 minutes	- Flipchart, tape, markers
B. Climate Setter Participants look at some samples of “dirty” water and talk about their own water, local words, etc.	10 minutes	- Samples of water in clear bottles: clear, some particles, quite “dirty” and chocolate-y, etc. (at the discretion of the trainer)
C. Large Group Discussion Participants talk about local methods for dealing with dirty water and trainer outlines 4 methods.	20 minutes	- Flipchart, tape, markers - Posters you prepare with 4 methods, 1 method per poster
D. Small Group Work Participants look at poster and discuss advantages and disadvantages of the various methods and which ones might work with their communities. Discuss barriers to pretreatment.	20 minutes	- Prepared flipchart page with methods and pros and cons columns for each method - Markers and tape - Posters with methods - Flocculants if available
E. Table Work (Optional) Participants experiment with different methods.	30 minutes	- Materials depend on which methods the tables will explore
F Reading, Conclusions, and Review The participants answer questions about what they’ve learned.	20 minutes	- <i>Outreach Worker’s Handbook</i> for conclusions - <i>Outreach Worker’s Handbook</i> for more information - Prepared summary page

 **105 minutes with optional activity, 75 without**

PREPARING TO TEACH THIS MODULE:

Pretreatment

Before you present Module 2, Session 1:

1. Decide whether or not this demonstration is relevant for your area. It may be that “dirty-looking water” is not a problem. The session can also be done with one or two types of dirty water since the major objective is to learn about the different methods of making dirty water clear, which is the first step in making it safe to drink.
2. Carefully gather and store all needed materials before the session.
3. Collect samples of local water (or make them by mixing water and dirt) in clear, small containers: clear water; water with floating debris; cloudy water (with some dirt/particles floating in it, but you can still sort of see through it); and muddy water (so dirty/muddy that it looks like hot chocolate, coffee, dark tea, or cocoa). Keep containers hidden until you are ready to show them to the participants in the climate setter. The selection of water samples will depend on local conditions, so the trainer should choose appropriate samples to use.

Investigate if flocculants (“settling-out agents” such as alum, moringa, racket, or any commercial product for pretreating water) are available. If yes, collect samples of each.

4. Prepare a flipchart page with a chart*:

Method/ Pros and Cons	Positive Factors	Negative Factors
Cloth filtration		
Sand filtration		
Settling and decanting		
Flocculants		

*Sample completed chart is available on p. 11 of the *Outreach Worker’s Handbook*.

5. Prepare posters illustrating the four methods (cloth, sand, settling, and flocculants) large enough so the participants can see them. Sample images can be found in the *Outreach Worker’s Handbook* pp. 42–43.
 6. Mark the page(s) in the *Outreach Worker’s Handbook* for drawing conclusions and extra reading.
 7. Prepare a flipchart with key points for summary at the end of the session.
1. If optional activity (E) is chosen (where the participants experiment with the different ways to pretreat water), assemble the necessary equipment for locally used methods: different

types of cloth, a sand filter, containers for settling and decanting, and some examples of locally available flocculants (if available). Make sure no one samples the water.

9. The four recommended treatment methods described in the following sessions make water safer (potable but not completely safe) from the germs that cause diarrhea and other illness, but they do NOT completely remove/kill the diarrhea-causing germs or address chemical contamination such as arsenic.

TRAINING ACTIVITIES:

Pretreatment

A. Introduction to the Session (5 minutes)

1. Say that during this session the participants will explore the various ways in which water can be pretreated (or clarified) to remove particles, mud, or other debris that makes the water appear “dirty.” Stress the fact that this session is about pretreating water to get it ready for further treatment to make it potable. Remind the participants about the salty water and the water with the feces and hair (or long grass or thread). The water looked clear, but was, in fact, contaminated, so even if you pretreat it to make it look clear, it still needs to be treated to make it safe for drinking. Share the objectives for the session.

B. Climate Setter (10 minutes)

1. Uncover the four samples of water. Ask the participants how they would describe the different samples. Get them to call out some terms in their local language that describe the different degrees of “dirty” water. Ask them how they perceive (see) the different samples. Record some of the words and expressions on a flipchart. If appropriate, share with the participants where you got the water samples.



Trainer Note:

Do not belabor this activity. Its purpose is to get the participants to think about “dirty” water that will need to be clarified.

C. Large Group Discussion (20 minutes)

1. Ask the participants to talk about some of the ways that they’ve noticed people in the community deal with “dirty” water.
2. Write these on a flipchart.
3. Using the posters, briefly talk about the ways that can be used to pretreat dirty water in your communities to remove some contaminants. Relate what you present about the methods to what they’ve discussed earlier about local ways that people pretreat their water. Touch briefly on the mechanics of how the methods work. Introduce the notion of flocculants (settling

agents) and ask the participants to name local products (either commercial or indigenous) if available.

If Guinea worm is endemic to the area, mention the need to filter water with a tightly woven cloth, as the cloth will remove the tiny insects carrying the Guinea worm larvae.

D. Small Group Work (20 minutes)

1. Count off by fours. Move into groups. Using the flipchart prepared in the “session-at-a-glance” section with methods and pros and cons, invite participants to record what might be some of the advantages/disadvantages of the locally available methods (cloth, sand, settling, and flocculants). Have them fill out their charts. A sample prefilled chart is on p. 11 of the *Outreach Worker’s Handbook* and in the *Collection of Resource Materials*. Display the group work.

Trainer Note:

Point out that most pretreatment methods work fine as a preliminary step for any of the four treatment methods. However, if the final treatment method being considered is chlorination:



- People should use a double dose of chlorination following cloth filtration.
- Chlorination should not be used following pretreatment using flocculation with moringa seed or racket. Another treatment method should be used following these pretreatments.

2. Given their knowledge about the community and the ways people already pretreat their water, ask the participants which methods they think the people in the community might now adopt if they are not pretreating their water. Discuss some of the barriers to pretreating water. Record these, if appropriate, for use at the end of the module on water for purposes of summarizing barriers.
3. Lead a discussion about how the need to pretreat water to clarify it may vary. For instance, local rivers may have clear water during the dry season but very muddy water during the rainy season. Water from a well or borehole may also change depending on whether or not it is protected. So families may need to clarify their water sometimes and not need to clarify it at other times.

E. OPTIONAL Table Work: Experimenting with Pretreatments (30 minutes)

Trainer Note:

If time permits, have the participants practice some of the methods. If equipment is not available, implement the simplest method, e.g., cloth filtration using a tightly woven cloth. If settling-out agents are available locally, using flocculants can be interesting as particles in the water can be seen settling to the bottom of the container (especially if you can get a clear/see-through container).



- F. Reading, Drawing Conclusions, and Review (20 minutes)
1. Supplemental materials on water clarity are located in the *Collection of Resource Materials* in the materials for Module 2, Session 1.
 2. Ask the participants to turn to p. 67 in their *Outreach Worker's Handbook* and then answer the following questions:
 - What have you learned about pretreating water?
 - What are you going to remember about the different methods of pretreating (clarifying) water if you conduct these activities for an audience in the community?



Trainer Note:

These questions may be answered orally while the trainer records the thoughts and observations on a flipchart.

Review the key points of the session using the prepared flipchart.

Summary Points:

- Dirty-looking water should be pretreated or clarified before it is treated to make it safe to drink. It is also important to filter water through tightly woven cloth to remove Guinea worm eggs prior to treating the water with any method in Guinea worm-infested areas.
- Dirty water can be pretreated by several methods (fill in list of locally available methods).
- Pretreating water does not make it safe for drinking (potable).
- Some advantages of the methods are _____ (fill in based on discussion).
- Some barriers to using the methods are _____ (fill in based on discussion).

Say that the next sessions will cover four different ways to treat water to make it safe to drink. First, they are going to learn about chlorinating water, which is one way to make it safe for drinking.



Trainer Note:

Skip any treatment methods that are not feasible in the outreach workers' communities. For example, if no chlorine products or filters are available for sale, do not teach those methods, unless your program intends to make those products available. If there is a shortage of wood or other fuel for boiling water, you should skip that module (as long as there are feasible alternatives).

HOW TO CHLORINATE WATER TO MAKE IT SAFE TO DRINK

Session Objective

By the end of this module, the participants will be able to:

1. Chlorinate water following the chlorination procedure described in this manual or the MOH's strategy using a locally available commercial product.

SESSION AT A GLANCE: Chlorination

Activity	Time	Materials
<p>A. Introduction to the Session</p> <p>Trainer introduces the topic of chlorination to treat water and session objective.</p>	5 minutes	- Flipchart, tape, markers
<p>B. Climate Setter</p> <p>Participants are asked if they've ever heard about adding (local product name here) to water to make it potable/safe to drink.</p>	5 minutes	<ul style="list-style-type: none"> - Possible samples of local products on a table. - Descriptions and drawings of products if no samples available.
<p>C. Large Group Activity</p> <p>Trainer demonstrates chlorinating water. Advantages and disadvantages, cost, access to product, and barriers, etc. are discussed.</p>	15 minutes	<ul style="list-style-type: none"> - Poster with steps for locally available commercial product - Bottles for the tables - Water - Disposable cups - Depending on the product instructions, provide the correct-sized container - Flipchart page with pros, cons, comments
<p>D. Practice (Optional)</p> <p>Participants practice chlorinating water.</p>	15 minutes	<ul style="list-style-type: none"> - Containers for each table - Poster with steps for demonstration
<p>E. Reading and Conclusions</p> <p>Participants read the question and answer section and record conclusions in their handbooks. Summary of key points.</p>	10 minutes	<ul style="list-style-type: none"> - <i>Outreach Worker's Handbook</i> for drawing conclusions and more information - Prepared flipchart page with summary of key points



50 minutes (35 if no table work)

PREPARING TO TEACH THIS MODULE:

Chlorination

Before you present Module 2, Session 2

1. Gather some packets of the locally available commercial chlorination product (see the list below for some possibilities). Check on any Ministry of Health protocols for use of products/bleach/chlorine for disinfecting water (making it potable).
2. Gather all the containers. (See “session at a glance.”) The volume (size) of the containers will depend on the instructions for using the local product to chlorinate water. For example, a 2.5 liter bottle may be indicated or a 20 liter container may be indicated.
3. Develop appropriate messages on the dangers of using local bleach (see trainer note below).
4. Review the supplemental information on chlorination found at the end of this session. Procedures relating to chlorination differ from country to country.
5. Prepare a flipchart page with headings “pros,” “cons,” and “comments,” and another with key points for the summary.
6. Prepare a poster with steps for using available chlorine-based commercial products, such as those listed below.* Sample posters for PUR, WaterGuard, and Aquatabs are located in the *Collection of Resource Materials*. If instructions for the locally available product(s) are not in the collection, try to find them locally.



Should You Cover this Session?

Many experts would recommend that this session be used only if there are reliable commercially available chlorine-based products on the market for the express purpose of disinfecting water. This is because local bleach products can have inconsistent chlorine content and therefore any generic instructions on using locally available bleach cannot be guaranteed to disinfect water. However, in some countries, the Ministry of Health has established protocols regarding chlorination using locally available bleach. Consult with your local hygiene expert or Ministry of Health officials regarding chlorination recommendations.

***Some examples of locally available products:**

-Francophone Africa:	Sur'Eau
-Anglophone Africa:	WaterGuard is most common
-Lusophone Africa:	Certeza
-Asia:	WaterGuard, Clorin
-Latin America:	Claro
- Everywhere:	Aquatabs, PUR
-Indonesia:	Air Rah/Mat
-India:	SafeWat
-Myanmar:	WaterGuard
-Nepal:	WaterGuard
-Vietnam:	SafeWat
-Angola:	Certeza
-Ethiopia:	WuhaAgar (WaterGuard)
-Kenya:	WaterGuard
-Malawi:	WaterGuard
-Mozambique:	Certeza
-Tanzania:	WaterGuard
-Uganda:	WaterGuard, Aquasafe, PUR
-Madagascar:	Sur'Eau
-Zambia:	Clorin
-Cameroon:	Sur'Eau
-Guinea:	Sur'Eau
-Haiti:	Dlo Lavi
-Nigeria:	WaterGuard
-Rwanda:	Sur'Eau

Trainer Note:



If there is no commercial water treatment product available and the Ministry of Health promotes using household bleach, then follow the recommendations of the MOH. However, be aware that the dosing protocols for using household bleach for water treatment are typically taken from protocols that have been created for emergency situations and can produce water that has a very high level of chlorine so it may have a very strong chlorine smell and taste (which can cause people to reject the method). Also, most protocols for using household bleach are based on adding a specific number of drops of bleach per liter of water. Obtaining droppers that produce uniform drop sizes can be challenging in many countries.

**Trainer Note:**

In addition to the products listed above, PUR may be available. PUR is a complete water treatment product—it chlorinates as well as acts as a flocculent to clarify turbid water and remove heavy metals. It requires some investment of time on the part of the user, and the waste collected from the process must be properly disposed of (in a latrine or other dedicated area), but it is a very effective method to use, especially in places where turbidity is a significant problem.

**Trainer Note:**

Some of the above products come in both tablet and liquid form. The dosing recommendations and instructions for use of each are distinct. The trainer should make note of what is commonly available and used and be prepared to discuss/demonstrate both types if necessary.

DETAILED TRAINER NOTES:

Chlorination

A. Introduction to the Session (5 minutes)

1. State that the objective of the session is for the participants to learn how to chlorinate their water with locally available commercial products. Remind participants that when they discussed key practices, one key practice was to have safe, clean (potable) water. Chlorination is one way to achieve that. Chlorination can be viewed as one of several alternative ways to achieve the key practice. (The others are solar disinfection—SODIS], filtration, and boiling.)

B. Climate Setter (5 minutes)

1. Ask the participants if they've ever heard about making water potable by adding bleach. Ask what they have seen in the community, for example, if they've done this themselves or know people who have; ask how the water tastes. Then ask if they know about any commercially available products for making water safe. Ask what some of the product names are. Have samples available, if appropriate, where the participants can see them. If no samples are available, have drawings of the packages for participants to see.

**Trainer Note:**

The purpose is to get them thinking about this method. Do not prolong the climate setter.

C. Large Group Activity (15 minutes)



Trainer Note:

If more than one chlorination product is available in your country, you need to go through steps 1 and 2 below for each product.

1. Provide the participants with a copy of the instructions on how to use the locally available chlorine water treatment product(s). It is best if the instructions have clear illustrations showing each step.



Trainer Note:

Examples of instructions for some products (WaterGuard Liquid, WaterGuard Tablets, AquaSafe, and PUR) are in the *Collection of Resource Materials*, but these are meant to be illustrative. You need to get the instructions that are specific to the brand/products that are locally available. It is best if you can either display the instructions in a large poster format that is big enough that everyone can see clearly or distribute smaller size copies to each of the participants so that they can follow along.

2. Demonstrate to the entire group how to use the product to make water safe to drink by following the instructions.
3. Ask them to smell it. Discuss some of the advantages and disadvantages. What are some of the barriers to using the product? For example, cost, accessibility? What are some reasons that people might not want to chlorinate? Record these on the flipchart. Save this chart for the last session in the module on water so the participants can recall barriers, enablers, etc. for each of the treatment alternatives (a sample chart is available on p. 9 of the *Outreach Worker's Handbook* and in the *Collection of Resource Materials* section for Module 2, Session 8). After the time indicated on the packaging instructions for the product (usually 30 minutes), let the participants taste the water that has been treated by the commercial product and get their reactions. (This might be done at a break.)

Explain that if the water has a chlorine taste, this can be reduced/eliminated by shaking the container (to make air bubbles in the water), then taking the lid off and letting it sit for a few minutes before putting the lid back on. The process may need to be done several times to reduce the taste/smell of chlorine.



Trainer Note:

The air bubbles that form in the water "grab" some of the chlorine and take it out of the water when the bubbles pop, thus reducing the taste and smell of chlorine.

4. Explain that even though the chlorine residual protects against recontamination, care must be taken not to re-infect the water once the product has been added. Also say that chlorinated water, if not recontaminated, will stay safe to drink for at least one week (if it is stored in a container that has a narrow-neck and tight-fitting cap). After one week, it may no longer be safe to drink. If the chlorinated water is stored in a wide mouth container (that would allow the water to be touched by a cup, scoop, or hand) or without a tightly fitting cap, then the water should only be used for drinking for one day. Ask the participants how a family might prevent recontamination.



Trainer Note:

All water in the storage container needs to be used or dumped before adding newly treated water. This is important so that the “new” batch of treated water is not mixed with the “old” batch.

- D. OPTIONAL: Practice Chlorinating Water (15 minutes)
 1. With the supplies (proper sized containers, water, and chlorine products) on the table, have the groups practice. Walk from table to table to make sure they are doing this correctly. Put the chlorinated water aside for 30 minutes and then have the participants taste it and talk about the taste.

E. Review, Reading, and Drawing Conclusions (10 minutes)

1. Have the participants read in the question and answer section about chlorination as they have done in the past sessions (p. 15 in the *Outreach Worker's Handbook*).

A. *If water has a strong chlorine taste after treating it, how can I eliminate the chlorine taste?*

You should shake the container and then open it. Repeat this process several times if the water still has a chlorine flavor.

B. *How long does chlorinated water last?*

Chlorinated water stored in a narrow-neck container with a tightly fitting lid can be stored and used for seven days and should then be used for non-drinking purposes. Chlorinated water that is stored in a container with a wide opening or with no lid (or a lid that does not fit tightly) should be used for non-drinking purposes after 24 hours.



Trainer Note:

Remember to ask for volunteers and restate that the purpose is not to memorize the information, but to know where to find it.

An alternative to reading might be a “treasure hunt” whereby participants need to look through the supplemental information on chlorination in the *Outreach Worker's Handbook* and find the answer(s) to question(s) about chlorination.

Supplemental information on chlorination can also be found in the *Collection of Resource Materials*. If you so choose, participants may refer to these sheets for additional information.

2. Have them record, in their *Outreach Worker's Handbook* on pp. 67–68, the answers to the following questions:
 - What did you learn about chlorinating water?
 - What are you going to say when people say it tastes bad?
 - Can you plan how you will conduct this session with a community group?
 - What do you want to remember?



Trainer Note:

The above questions may be answered orally and the answers written on flipchart paper.

3. Review the key points.

Summary Points:

- The local products for treating water with chlorine are _____ (*fill in the blank*).
 - Precautions about the product _____ (*fill in the blank*).
 - Water disinfected with _____ (*fill in name of product*) will remain safe for one week, if stored in a narrow-neck container with tight-fitting cover, or for 24 hours if stored in wide-neck container or loose fitting or no cover container.
 - Some of the barriers to using (*name of product*) are _____ (*fill in the blank*).
4. Transition to the next session on boiling water: State that chlorination is one way to disinfect (treat) water and that next they are going to look at how to boil water to make it safe for consumption. Boiling is another alternative for treatment.

HOW TO BOIL WATER TO MAKE IT SAFE TO DRINK

Session Objectives

By the end of this module, the participants will be able to:

1. Boil water following the boiling procedure described.
2. Explain the importance of safe storage and serving after boiling.

SESSION AT A GLANCE: Boiling Water

Activity	Time	Materials
A. Introduction to the Session Trainer links this to the previous sessions and presents the session's objectives.	5 minutes	- Flipchart, tape, markers
B. Climate Setter Trainer asks about the group's and community's experiences with boiling water, the pros and cons, etc.	10 minutes	- Flipchart, tape, markers
C. Large Group Activity Trainer and participants review the procedure for boiling water. Debate the pros and cons in detail. Discuss cost, availability of fuel, etc.	15 minutes	<ul style="list-style-type: none"> - Poster or mini-posters with steps for boiling - Flipchart paper with two columns: pros and cons of boiling water - Leave room on pro/con paper for other information related to boiling
D. Reading, Drawing Conclusions, and Review	10 minutes	<ul style="list-style-type: none"> - <i>Outreach Worker's Handbook</i> for more information - <i>Outreach Worker's Handbook</i> for recording conclusions - Prepared flipchart summary



40 minutes

PREPARING TO TEACH THIS MODULE: Boiling Water

Before you present Module 2, Session 3:

1. Review the following procedure for boiling.

How should I boil my water?

In a teapot or a pot, heat the water until large bubbles appear. Then, cover it, let it cool and it will be ready to drink.

2. Make sure you know about locally appropriate materials for providing heat: charcoal, propane, wood, their cost and availability, etc.
3. Prepare the poster on steps for boiling water or have mini-posters for each table.
4. Prepare a flipchart page that summarizes key points from the session.
5. The overall purpose of this session is to teach about boiling water. Storage and retrieval (serving) are important as a follow-up to boiling and are introduced here. There will be a more detailed session on storage and retrieval.

TRAINING ACTIVITIES: Boiling Water

A. Introduction to the Session (5 minutes)

1. Present the theme of the session: boiling water to make it potable. State that participants should be able to follow the procedure for boiling water. They should also be able to replicate this activity with their community groups. Remind participants that one of the three key practices is having clean and safe (potable) water and that one way to achieve this is to boil it. Boiling may be considered as an alternative to chlorination, SODIS, and filtering.

B. Climate Setter (10 minutes)

1. Ask the participants if they've had any experiences with boiling (boiled) water.
2. Ask for specifics: What fuel do you use? What do you boil the water in? How long do you boil it? Where do you store it? How is the boiled water served? Write these on a flipchart.



Trainer Note:

The first part of the climate setter is to gain participants' reactions to boiling/boiled water. The second question is to highlight some of the specifics.

C. Large Group Activity (15 minutes)

1. Using the poster (or mini-posters at the tables), point to each step and have the participants read aloud, if appropriate. For the step on clarifying turbid water, adapt it to reflect how water is clarified locally.
2. Inform them that it is possible to treat clean and “dirty” (muddy/opaque) water using boiling. If the water is “dirty” (muddy/opaque), it should be pretreated to make it clear (see Module 2, Session 1). When large bubbles appear the water is safe to drink (once it cools).



Trainer Note:

WHO recommendations say to boil water until large bubbles start to pop across the surface of the water. The CDC recommends boiling 1 minute to ensure that large bubbles have appeared and the water has been adequately heated.

3. Stage a quick debate about the advantages (pros) and disadvantages (cons) of using boiling as a way to make water safe to drink. Divide the group into two. Have them meet and have one group draw up a list of pros and the other group the cons. When ready, take one response from each group and record the responses on the flipchart paper. Talk about cost, barriers to the method, issues related to the fuel used, storage and serving issues, etc. Probe with the participants to see if there might be some things people can do or things in the environment that can “encourage” one to boil water. There may also be environmental issues that discourage the use of boiling, such a scarcity of wood. Record these.

Mention briefly how important it is to let the water cool and then be placed in a secure storage container, preferably with a narrow-neck, tight-fitting lid, and a spigot to avoid recontamination. Emphasize that boiled water should only be kept for a week (if it is stored in a narrow-necked container with a tight-fitting lid) or for 24 hours (if it is NOT stored in a narrow-necked container with a tight-fitting lid). Say that they will look at storage and retrieval later in more detail.

Save this flipchart page for the final activity in the water modules.

D. Reading, Review, and Drawing Conclusions (10 minutes)

1. Read from the question and answer section on boiling water, pp. 15–16 in the *Outreach Worker's Handbook*. (An alternative to reading is to have the participants hunt for answers to questions that the trainer has posted.)

A. How should I boil my water?

In a teapot or a pot, heat the water until large bubbles appear. Then cover it, let it cool and it will be ready to drink.

B. Can I use the boiling method to treat VERY TURBID (as dark as chocolate) water?

Yes, you can directly boil even highly turbid water without pretreatment. However, if the appearance of the water bothers people, you can eliminate the turbidity of the water **by filtering through a tightly woven cloth, using alum (or another locally recommended flocculent method), or letting it sit undisturbed for 12 hours**, so that the dirt settles to the bottom and the water looks clear. Then, transfer the clear water to another container (leaving the dirt behind). See also the session on water clarity for other ways to make turbid water ready for boiling. Afterwards, pour the clear water into another container and discard the residue remaining in the first container. Once the water is clear, boil it until **large bubbles** appear.

C. How long does boiled water last?

Boiled water only lasts 24 hours. It should be used for purposes other than drinking after that.

2. Have the participants look in their *Outreach Worker's Handbook* p. 68 for the answers to the following questions:
 - What did you learn about boiling water that you didn't know before?
 - What will you remember to do when you're conducting this session as an outreach worker?



Trainer Note:

The above questions may be answered orally and the answers recorded on a flipchart by the trainer.

3. Review the main points of the session.

Summary Points:

- Boiling is a way to make water safe.
- Boiled water needs to be stored and served properly.
- Care needs to be taken not to recontaminate boiled water.
- Whether boiling is the best treatment in a particular community depends on many factors.

- Make sure large bubbles appear in the water, not just the small bubbles on the side of the container.
 - Use or dump “old” water before adding “newly treated” water.
4. Make the link to the next session on the SODIS (solar disinfection) method of purifying water. Say that they’ve looked at two ways of treating water to make it safe to drink and that using the power of the sun is another method.

HOW TO USE SUNLIGHT (THE SODIS METHOD) TO MAKE WATER SAFE TO DRINK

Session Objectives

By the end of this session, the participants will be able to:

1. Treat water using the SODIS method.
2. Outline some of the advantages and disadvantages of SODIS.
3. List some of the guidelines for using the SODIS method.

SESSION AT A GLANCE: SODIS Method

Activity	Time	Materials
A. Introduction to the Session Introduce the session on SODIS by reviewing other treatment methods.	5 minutes	- Flipchart, tape, markers
B. Climate Setter Trainer uses a magnifying glass to demonstrate the power of the sun.	10 minutes	- Magnifying glass - Small pieces of paper
C. Large Group Activities Trainer demonstrates the SODIS method and discusses pros and cons (in pairs) and guidelines.	10 minutes	- Bottles and pitcher of water - Metal sheet or roof (optional) - SODIS poster - Pros and cons flipchart sheet
D. Reading Participants read more about the SODIS method.	10 minutes	- <i>Outreach Worker's Handbook</i> for more information on SODIS
E. Drawing Conclusions Participants record what they've learned and thoughts about facilitating the session. Summary of the session.	10 minutes	- <i>Outreach Worker's Handbook</i> for recording new information - Prepared flipchart of key points



45 minutes

PREPARING TO TEACH THIS SESSION:

SODIS Method

Before you present Module 2, Session 4 on SODIS:

1. Gather the plastic bottles and make sure they are clean and clear with no labels (bottles should not be more than 10 cm in diameter). Glass bottles can be used for SODIS, as long as they have a reusable lid.
2. Have pitchers of clear water ready so you can fill the plastic (or glass) bottles.
3. If possible, bring a magnifying glass and small bits of paper for the demonstration. If not, prepare a demonstration that shows the power of the sun. For example, put pieces of black and white cloth into the direct sunlight and feel how “hot” the black cloth gets as compared to the white cloth. If the session is done on a cloudy day, substitute a discussion about how the participants feel when working under the sun, the feeling of the sun on the skin, etc. as opposed to sitting in the shade.
4. Prepare a pros and cons flipchart sheet for SODIS.
5. Determine the local word or concept of “germ” (viruses/bacteria).
6. Prepare a flipchart page that summarizes key session points.



Trainer Note:

SODIS should be offered as an alternative only if PET plastic bottles are widely available. You can identify PET bottles because, unlike PVC-type plastic bottles, they burn easily (with a sweet smell). If PVC bottles are also available, the participants need to understand that they should not be used for SODIS. Glass bottles can be used for SODIS, as long as they have a reusable lid.

TRAINING ACTIVITIES: SODIS Method

A. Introduction to the Session (5 minutes)

1. Say that during the previous session participants learned how to boil their water as a method for making it safe. Continue by saying that now they are going to learn about another (alternative) way for making water safe (potable) to drink. It is called SODIS and that stands for solar (sun) disinfection. It is another way to make water safe for drinking and cooking (besides chlorination, boiling, and filtering). It requires clear and clean plastic (PET, not PVC) or glass bottles, clear water (without visible particles or colors) and sunlight. Remember that a key practice is having safe water to drink and that one way to do this is using SODIS.

B. Climate Setter (10 minutes)

1. If it's sunny, take the participants outside. Ask the participants to watch as you use a magnifying glass to concentrate the sun's rays on the small bits of paper. Tell the participants that the sun is very strong and can kill germs* in water and that we can use the power of the sun to make water potable.

*Germs



Once again, whether or not you choose to use the word "germs" will depend on the audience's acceptance of the concept. Some audiences with which the outreach worker will be working will not understand "germs," so vocabulary will need to be adjusted. Some cultures use the term "small bugs," for example.

2. Ask the participants if they've ever heard about this method or know anyone who uses it to make the drinking water safe. Gather some experiences, if appropriate.

Trainer Note:



If there isn't any sunlight on the day you do this demonstration, ask the participants to tell you what it feels like when they're out in the bright sun; what happens when they touch metal that has been in the sun, etc. The idea is to reinforce that the sun's heat and rays are strong enough to make water potable if the treatment is done correctly.

C. Large Group Activity (10 minutes)

1. Use two clear plastic bottles no more than 10 cm in diameter and the SODIS method chart. Explain each step as you do it. Demonstrate how to fill the bottles from the pitcher and how

the bottles should be laid on their sides, preferably on a metallic sheet in a safe place, like a tin roof. Emphasize that on a sunny day, the water will be ready to drink in six hours. Say that if it is cloudy, it will take two days. If there is continuous rain, do not use SODIS.

2. Say that you can't use SODIS with highly turbid (unclear) water because the little bits floating in the water make it difficult for the sun to penetrate and kill the germs. Filtration as pretreatment needs to be done for chlorination and SODIS at high turbidity levels. A simple test is available to check if water needs to be filtered before SODIS is applied: hold fingers behind the bottle—no filtration is necessary if you still can see the fingers through the bottle. Another method is to put the filled bottle on the headline of a newspaper—no pretreatment is necessary if you can see the letters while looking from the opening to the bottom of the bottle. Refer back to the feces/hair (or grass or thread) and salt session to remind participants that water may look clear but not be potable.



Trainer Note:

Water should first be filtered through a tightly woven cloth before SODIS is applied in areas with Guinea worm.

3. Remind them that water treated by SODIS should be stored in the same bottle in which it was treated and that after opening the bottle you should drink the water in 24 hours. Make sure to emphasize that they should not drink directly from the bottle, but pour the water into a clean glass.
4. Divide the participants into pairs. Tell one member of the team to think about all of the advantages of SODIS and the other team member to think of all the disadvantages. Their job is to convince each other of the advantages and disadvantages of this method.
5. After the discussions in pairs, ask for volunteers to offer pros and cons in the large group. Put the ideas on a flipchart and save it for the final session in the water module. Add anything they've left out.

D. Reading (10 minutes)

1. Have the participants turn to p. 16 in their *Outreach Worker's Handbook* for questions and answers about SODIS. Emphasize again that they do not have to memorize this information but should know where to find it. Have them read aloud the question and then have someone read the answer.

A. What is the SODIS method?

It is a water disinfection method that uses sunlight. With this method, the sun's ultraviolet light and high water temperature (due to heat from the sun) destroy germs in the water.

B. What materials do I need in order to use the SODIS method?

1. Clean, transparent plastic (or glass) PET bottles (with lids) that hold up to 2.5 liters (10 cm diameter maximum)

2. Clear water
3. Corrugated metal (optional)

C. How do I treat water using SODIS?

Fill a clean plastic (or glass) bottle with clear water, then screw on the lid. Lay the bottle in direct sunlight for six hours. It is a good idea, but not absolutely necessary, to lay the bottle on a piece of corrugated metal. If it is cloudy or raining off and on (but not all day), leave the bottle exposed to the sky for two days. Afterward, allow the bottle to cool and the water will be ready to drink.

D. Can I use SODIS if it is raining all day?

No, because the SODIS method only works when enough of the sun's rays reach the water.

E. Must I use only transparent plastic bottles for the SODIS method?

Yes, you should only use colorless, transparent plastic soft drink or mineral water bottles that are no more than 10 cm in diameter. YOU SHOULD NOT USE bottles that are green, brown, blue, etc. (because colored plastic does not allow the sun's rays to disinfect the water). Glass bottles can also be used for SODIS, as long as they have a reusable lid.

F. What size bottles should I use for SODIS?

Bottles that are no more than 10 cm in diameter (typically bottles that hold up to 2.5 liters).

G. What do I do if my bottles are scratched?

If your bottles are very scratched or opaque, discard them and use other bottles.

H. Should I take the labels off of the bottles?

Yes, because the labels prevent the sun's rays from disinfecting the water.

I. Can I use SODIS with turbid water?

Turbid water can be used, but it has to be pretreated to reduce turbidity: hold fingers behind the bottle—no filtration is necessary if you still can see the fingers through the bottle. You can reduce turbidity with all the methods mentioned (cloth, filtration, sand filtration, settling/decanting, moringa flocculation, racket flocculation, or alum flocculation). Boil if a sufficient reduction in turbidity cannot be achieved.

Another method of determining if pretreatment is needed is to put the filled bottle on the headline of a newspaper—no pretreatment is necessary if you can see the letters by looking from the opening to the bottom of the bottle.

Sample instructions: place the open bottle upright onto the SODIS logo or the headline of a newspaper. Look through the mouth of the bottle down toward the logo or the newspaper. The water is clear enough for the SODIS application if you still can read the headline of the newspaper.

J. Where should I store water treated with SODIS?

Water treated with SODIS should be stored in the same bottles in which it was treated.

K. How long does water treated with SODIS last?

Once a bottle of water treated with SODIS has been opened, it should only be kept 24 hours and then it should be used for purposes other than drinking because there is a strong possibility that it could be recontaminated.

L. Should I drink water treated with SODIS straight from the bottle (putting my mouth on the bottle)?

No, because you could contaminate the water if the bottle comes into contact with your mouth. To drink the water, pour it into a clean glass.

An alternative activity is to give the participants some questions to answer about SODIS and let them find the answers in the supplemental information. Additional information can also be found in the *Collection of Resource Materials*.

E. Drawing Conclusions (10 minutes)

1. Have the participants turn to p. 69 in their *Outreach Worker's Handbook* and answer the following questions:
 - What did you learn about the SODIS method?
 - What do you want to remember about this demonstration when you do it as an outreach worker?

**Trainer Note:**

The questions may be answered orally and the answers recorded by the trainer on flipcharts.

2. Using the prepared flipchart page, review the key points of the session.

Summary Points:

- SODIS is another (alternative) way to make water potable, but can only be used with clear water.
 - Leave the bottles for six hours in sunlight; two days if it's cloudy.
 - Keep the water in the same bottle; don't drink from the bottle.
 - The water will stay clean for 24 hours; after 24 hours, discard it or use it for cleaning or watering the crops.
3. Say that in the next session, they will learn about filtration. Filtration— along with boiling, SODIS, and chlorination—is a way to achieve the key practice of having safe, clean water.

HOW TO USE FILTERS TO MAKE WATER SAFE TO DRINK

Session Objectives

By the end of this session, the participants will be able to:

1. Describe how _____ (*insert name of locally available filter*) works.
2. Relate some of the advantages and disadvantages of filtration.

SESSION AT A GLANCE: Filtration

Activity	Time	Materials
<p>A. Introduction to the Session</p> <p>Trainer will make the link to the previous sessions and introduce the topic and objectives.</p>	5 minutes	- Flipchart, tape, markers
<p>B. Climate Setter</p> <p>Participants discuss their experiences with filtration and review locally available filters.</p>	10 minutes	<ul style="list-style-type: none"> - Flipchart, markers, tape - If appropriate, locally available filter(s) for display
<p>C. Large Group Activity</p> <p>Participants discuss advantages, disadvantages, maintenance, and barriers to use. Demonstration (optional depending on availability of product).</p>	20 minutes	<ul style="list-style-type: none"> - Filters on display - Water for demonstrating how the filter works - If filter is not available, have pictures - Pros and cons flipchart
<p>D. Drawing Conclusions</p> <p>Participants record learning and thoughts about facilitating the session.</p>	10 minutes	<ul style="list-style-type: none"> - <i>Collection of Resource Materials</i> for CDC sheets and <i>Outreach Worker's Handbook</i> - Prepared flipchart of key points



45 minutes

PREPARING TO TEACH THIS SESSION: Filtration

Before you present Module 2, Session 5:



Trainer Note:

The program manager will need to make a decision about whether or not to include this session. If a filtration product (sand or ceramic) is not available on the local market, or if the product is expensive and therefore not practical, this session should probably not be done. If the trainer wishes to make sure all four alternatives for making water potable are touched upon, but filters are not appropriate for the program, use some of the supplemental materials and simply show the participants how filters work.

1. If appropriate, have a model of the different filtration product(s) available (ceramic or Biosand filters). If not, have large poster pictures/photos for showing what the product looks like. Sample pictures are available in the *Collection of Resource Materials* section for Module 2, Session 5.
2. Set up a demonstration table.
3. Have glasses so participants can taste water.
4. For additional information, a description of some ceramic and Biosand filters can be found in the *Collection of Resource Materials*.
5. Prepare a summary flipchart of key session points.

TRAINING ACTIVITIES: Filtration

- A. Introduction to the Session (5 minutes)
 1. Say that during the previous sessions they have learned ways to treat water (chlorination, boiling, SODIS). Remind participants that filtration is another (alternative) way of making water potable.
 2. During this session they will learn about a final way to make water safe for drinking and explore some of the pros and cons of filtration.

3. Remind participants that they looked at filtration to make water clear using materials like cloth. *Emphasize that filtration for pretreatment does not make water safe (potable) for drinking. It simply removes matter from the water.*
 4. State that during this session, the filter they will be discussing is the (local name).
 5. Present the objectives for the session.
- B. Climate Setter (10 minutes)
1. Ask the participants if someone they know has had experience(s) with using sand or ceramic filters for making water potable. Quickly take some answers.
 2. Revisit the session on water clarity and remind participants again that there were several ways to make water clearer, but they didn't make it potable (pouring it through a cloth, letting it settle, or using a flocculent [settling agent], etc.).
 3. Introduce the model, if available. If a model is not available, have a picture of the locally available filter.
- C. Large Group Activity (20 minutes)
1. Invite the participants to stand around the demonstration table where you have installed the filter. Demonstrate how to use the (local name). When water has come through, have the participants taste it.
 2. Ask the participants to return to their seats. Ask about the advantages, disadvantages, costs, availability of products, barriers to use, etc. Record the information on the pros and cons flipchart page. Remind the participants that they are collecting lots of information about how to treat water related to the local situation. You can post the pros and cons flipchart with the other flipcharts from the previous sessions on how to treat water so that it's potable (sample p. 9 of the *Outreach Worker's Handbook* and in the *Collection of Resource Materials* Module 2, Session 8).
- D. More on Filtration and Drawing Conclusions (10 minutes)
1. Have the participants turn to p. 69 in their *Outreach Worker's Handbook* to answer the following questions:
 - What did you learn about filtration?
 - What do you want to remember about this lesson when you do it as an outreach worker?



Trainer Note:

The questions may be answered orally and the answers recorded by the trainer on flipcharts.

Summarize the key points using the prepared flipchart page:

- Biosand and ceramic filtration makes water safe to drink.
 - Filters must be maintained at all times.
 - Advantages and disadvantages are _____ (fill in from discussion).
2. Remind the participants that there are four ways to obtain clean drinking water: boiling, chlorination, SODIS, and filters.
 3. Next they are going to take a look at some of the ways in which water is transported, stored, and served (retrieved) so that it remains potable. Achieving the key practice of safe, clean water requires both effective treatment of the water and safe storage and retrieval.

TRANSPORTING, STORING, AND RETRIEVING WATER

Session Objective

By the end of this session, the participants will be able to:

1. Describe three acceptable alternative ways for handling water during transport, storage, and retrieval (serving).

SESSION AT A GLANCE: Transporting, Storing, and Retrieving Water

Activity	Time	Materials
<p>A. Introduction to the Session</p> <p>Trainer links to the previous sessions and introduces the topic and objective.</p>	5 minutes	- Flipchart, tape, markers
<p>B. Climate Setter</p> <p>Participants discuss how the families in their communities transport, store, and serve water.</p>	10 minutes	- Flipchart, tape, markers
<p>C. Large Group Activity</p> <p>Participants review the poster about transporting, storing, and serving water (handbook, p. 44). Optional: Show equipment: tight-lidded containers and long-handled ladles. Discuss safety of the procedures.</p>	10 minutes	- Containers with tight-fitting lids - Long-handled ladles, a glass (optional), container with spigot - Poster in <i>Collection of Resource Materials</i>
<p>D. Reading</p>	15 minutes	- <i>Outreach Worker's Handbook</i>
<p>E. Drawing Conclusions</p> <p>Participants record what they've learned and thoughts about facilitating the session in the community. Summary.</p>	10 minutes	- <i>Outreach Worker's Handbook</i> - Prepared flipchart of key points



50 minutes

PREPARING TO TEACH THIS SESSION: Transporting, Storing, and Retrieving Water

Before you present Module 2, Session 6:

1. Familiarize yourself with the local conditions for transporting/carrying, storing, and serving (or retrieving) water.
2. If possible, find a container with a lid that seals tightly, a long-handled dipper, a glass, and a container that has a tight-fitting cover and a spigot.
3. Prepare a summary flipchart of key session points.

DETAILED TRAINER NOTES: Transporting, Storing, and Retrieving Water

A. Introduction to the Session (5 minutes)

1. Say that during the previous sessions they have learned about how to treat water to make it safe for drinking (potable). There are four alternatives. Ask the participants to name them (boiling, chlorination, filtration, SODIS).
2. During this session they will learn about ways to safely carry (transport), store, and retrieve/serve water. By ensuring safe transporting, storing, and retrieving of water, contamination is reduced and the goal of achieving our key practice of having safe, clean (potable) water available to drink is more likely to be achieved.

B. Climate Setter (10 minutes)

1. In the large group, ask two participants how water gets to their houses. Ask two different participants how they store water in their homes. Finally, ask two different participants how they serve their water. Draw or record these on a flipchart and post.



Trainer Note:

If you feel that the participants are reluctant to talk about themselves, ask them about “other” families in their communities or in the communities where they are going to work.

**Trainer Note:**

Do not overdo this activity. The idea is to get the participants thinking about carrying, storing, retrieving, and serving water.

C. Large Group Activity (10 minutes)

1. Place the “How Do We Take Care of Our Drinking and Cooking Water” poster so that everyone can see it or use the illustration in the *Outreach Worker’s Handbook* p. 44 so the participants can follow along (also available in the *Collection of Resource Materials*).
2. Let the participants know that there are three situations they must consider in taking care of their water: transporting/carrying, storing, retrieving/serving.
3. Talk about the ways that water is transported. Use examples given in the climate setter as a starting point. Explain the first illustration, stating that the best way to transport water is in a clean container with a tightly sealed lid. Optional: Show the container with the tight-fitting lid and pass it around (for example, a clean jerry can with a cap).
4. Ask the participants how they store their water. Talk about the ways that water is stored. Show the illustration and say that for storing water, it is best to use a narrow-neck, covered container with a spigot. That way nothing can touch the water (dipper, cup, or hand). Water should be retrieved/served by pouring it from the container or from a spigot. If a narrow-neck container is not available, then the water should be served by dipping a long-handled ladle (scoop) into the water, being careful that the person’s hand does not touch the water. The ladle should be stored (preferably) by hanging it inside the water storage vessel. If it cannot be hung inside, it needs to be hung on a nail on the wall and washed and protected from dust and dirt. The ladle should not be stored by laying it on the water container because it can get contaminated. Water should be served in clean containers (glasses, etc.). Line E of the Mikikir (counseling) card on p. 40 of the *Outreach Worker’s Handbook* and the bottom of the row of the “How Do We Take Care of Our Drinking and Cooking Water” card in the handbook, p. 44, illustrate the different methods of storing water.
5. Review some of the transporting/carrying, storing, and retrieving methods so they can begin to relate what they’ve been studying to actual conditions in the community. Talk about ways that water is stored that are less than “ideal,” e.g., in uncovered wide-mouth pots, in clay pots with a piece of cloth covering the opening, etc.

D. Reading (15 minutes)

Have the participants turn to p. 17 in their *Outreach Worker’s Handbook* and read more about carrying, storing, and retrieving water. Emphasize again that they do not have to memorize this information but should know where it’s found. Have them read aloud the question and then have someone read the answer. An alternative to reading is to have the participants search for the answers to some questions as they peruse the supplemental information.

A. *When I gather water, how should I transport it?*

You should transport it in a container with a lid.

B. How do I take water out of the container to consume it?

For storing water, it is best to use a narrow-neck, covered container with a spigot. That way nothing can touch the water (dipper, cup, or hand). Water should be retrieved/served by pouring it from the container or from a spigot.

If a narrow-neck container is not available, then the water should be served by dipping a long-handled ladle (scoop) into the water being careful that the person's hand does not touch the water. Never dip a bowl, cup, or your hands into the container with your treated water because you can recontaminate it. The ladle should be stored (preferably) by hanging it inside the water storage vessel. If it cannot be hung inside, it needs to be hung on a nail on the wall and washed and protected from dust and dirt. The ladle should not be stored by laying it on the water container because it can get contaminated. Water should be served in clean containers (glasses, etc.). If you treated your water using SODIS, serve it directly from the bottle in which it was treated.

C. Where should I store my treated water?

You should keep chlorinated, boiled, and filtered water in a narrow-neck container with a lid that seals it well, preferably with a spigot (tap). Water treated with SODIS should be kept in the same bottles in which it was treated.

E. Drawing Conclusions (10 minutes)

1. Have the participants turn to p. 70 in their *Outreach Worker's Handbook* to answer the following questions:
 - What did you learn about carrying, storing, and retrieving water?
 - What do you want to remember about this lesson when you do it as an outreach worker?

**Trainer Note:**

The questions may be answered orally and the answers recorded by the trainer on flipcharts.

2. Summarize the key points using the prepared flipchart page:
 - Water can become contaminated while carrying, storing, or retrieving it.
 - The best way to carry water is in a covered container.
 - The best way to store water is in a covered container with a spigot (tap).
 - The best way to retrieve water is to take it from the spigot or pour it out.
 - Never dip a bowl, cup, or your hands into the container with your treated water because you can recontaminate it.
 - Always serve water in something clean.

3. If appropriate, make the link to the next session: which water treatment method shall families use? Say that in this session, they will talk about ways of helping families decide which alternatives are right for them.

HELPING FAMILIES CHOOSE

Session Objectives

At the end of this session, the participants will have:

1. Reviewed systematically the advantages and disadvantages of the different methods for treating, carrying, storing, and retrieving water in their community.
2. Developed some strategies for helping families to select the best methods of treating water.

SESSION AT A GLANCE: Helping Families Choose

Activity	Time	Materials
<p>A. Introduction to the Session</p> <p>Trainer makes a link back to the previous sessions and introduces the topic and objectives.</p>	5 minutes	<ul style="list-style-type: none"> - Flipchart, tape, markers - Summary points on flipcharts from previous sessions for a quick review (treatment, carrying, storing, retrieving, and serving)
<p>B. Climate Setter</p> <p>Ask the participants to make some choices about pictures.</p>	10 minutes	<ul style="list-style-type: none"> - Pictures (or drawings) of some different ways to treat, carry, store, and serve water
<p>C. Small Group Work</p> <p>Participants work on listing the different advantages of the various water treatment methods.</p>	20 minutes	<ul style="list-style-type: none"> - Any posters from previous sessions - Flipcharts from previous sessions on water - Four flipchart pages for each treatment alternative
<p>D. Large Group Discussion</p> <p>Participants discuss advantages, disadvantages, and circumstantial barriers for determining treatment options based on table work.</p>	20 minutes	<ul style="list-style-type: none"> - Flipchart sheets from small group work in the previous activity
<p>E. Drawing Conclusions and Review</p> <p>Participants record what they've learned and thoughts about facilitating the session. Summary of session. Final water planning.</p>	45 minutes	<ul style="list-style-type: none"> - <i>Outreach Worker's Handbook</i> - Prepared summary flipchart page and questions on flipchart paper



100 minutes

PREPARING TO TEACH THIS SESSION:

Helping Families Choose



Trainer Note:

This session is written as though all methods were covered in the workshop. However, if you skipped one treatment method (for example, filtration, because there are no locally available or affordable filters) then you should not work with that method during this session.

Before teaching Module 2, Session 7, you should:

1. Gather some of the different pictures (that were used in the previous sessions) for treating, carrying, storing, and retrieving water. Pair them up. You will present two pictures to the participants and ask them to make a choice. This serves as an introduction to “making a choice.”
2. Gather the flipcharts from the previous sessions where you and the participants recorded information (pros, cons, benefits, costs, etc.) about the different treatments (chlorination, SODIS, filtering, and boiling) and the carrying, storing, and serving of water. Hang them on the wall so the participants can see them (sample on p. 9-10 of the *Outreach Worker’s Handbook*, in the *Collection of Resource Materials* Module 2, Session 8, and at the end of this session).
4. Prepare four blank flipchart pages titled: Chlorination Advantages, Boiling Advantages, Filtration Advantages, and SODIS Advantages. Again, if you didn’t teach one of the methods, do not prepare that flipchart page.

Now prepare four blank flipchart pages titled: Chlorination Disadvantages, Boiling Disadvantages, Filtration Disadvantages, and SODIS Disadvantages. Again, if you didn’t teach one of the methods, do not prepare a flipchart.

5. Prepare a flipchart page with summary points from the session.
6. Prepare a large chart for the final water summary and planning activity, one per organization represented at the training, or one per table if participants are from the same organization. Put the final water summary questions on the flipchart.

TRAINING ACTIVITIES:

Helping Families Choose

A. Introduction to the Session (15 minutes)

1. Say that during the previous sessions they have learned about sources of contamination and how to treat, transport, store, and retrieve/serve water, and now they are going to continue exploring the advantages and disadvantages of the different methods, compare them, and discuss some strategies for helping individuals, families, and groups in the community to make the best and most appropriate decisions on how to improve their safe water consumption practices.

B. Climate Setter (10 minutes)

1. Using the pairs of pictures depicting different ways to treat, transport, store, retrieve, and serve water, show a pair to the participants. For example, show a clay pot with no lid and another container with a lid and spigot. Ask a volunteer to tell you which s/he prefers and why. Play the game for several rounds or until the pairs of pictures are used up.



Trainer Note:

The idea is to get them to tell which is preferred and why, in other words to make a choice and justify the choice. Do not belabor this activity. The point is to get them thinking about the topic at hand, which is how to help families choose the right way for them.

C. Small Group Task (20 minutes)

1. Divide the large group into smaller groups, one group for each water treatment method studied previously (chlorination, boiling, SODIS, filtration).
2. Give each group one of the prepared flipchart sheets. Instruct the groups to think of as many advantages as they can for the treatment method: chlorination, boiling, SODIS, and filtration by sand/ceramics. Then have them look at the disadvantages. Encourage them to go back and look at the flipcharts from the previous sessions where they listed some of the advantages and disadvantages. The idea is to expand their thinking about some of the pros and cons (advantages and disadvantages) (samples available in the *Collection of Resource Materials* Module 2, Session 8, in the *Outreach Worker's Handbook* p. 9, and at the end of this session).
3. Once each group is finished, have them hang their flipchart sheets on the wall and invite everyone to walk around and look at them. Invite participants from other groups to make contributions to the flipchart sheets, adding advantages or disadvantages.

4. Once everyone has visited the group work, have the participants return to their seats.

D. Large Group Discussion (20 minutes)

1. Open a large group discussion once everyone has visited the posters. Ask which of the four treatment methods most families might prefer and why. What might other families prefer and why? What about the information they discussed early in the training about local WASH conditions?



Trainer Note:

This discussion will be based on the information on the flipchart sheets. The idea is to help the participants gain information about the different methods so they are ready to work with the communities.

2. Let them know that each method has advantages and disadvantages. For example, treated water can be safely used for different lengths of time, depending on the treatment method used. Different methods take different amounts of time and effort, entail more or less out-of-pocket costs, yield water that tastes differently, and are better or worse for treating larger quantities of water more easily. No one method is right for every family. The basic rule is that the method should be matched to the families' conditions and preferences (samples available in *Collection of Resource Materials* Module 2, Session 8, in the *Outreach Worker's Handbook* p. 9-10, and at the end of this session).
3. Ask again which methods for making water healthy to drink they think are most appropriate for the communities in which they will be working.

E. Drawing Conclusions, Review, and Planning (45 minutes)

1. Have them turn to p. 70 in the *Outreach Worker's Handbook*. Answer the following questions:
 - Recalling the definition of facilitation vs. training, what did you learn about facilitating a discussion around preferred treatment methods for water?
 - What do you want to remember about this session when you facilitate it as an outreach worker?



Trainer Note:

The above questions may be answered orally and the answers recorded on a flipchart by the trainer.

Additional information on choosing water treatment methods is also available in the chart on page 99.

Summary points for this session:

- Each method has advantages and disadvantages. Hand out the chart on pp. 99–100 and ask participants to study it for a few moments, then ask for comments.
 - You can help individual families figure out which method will work for them.
2. Explain that in the next session the participants will have the chance to synthesize all they've learned about water and begin to make some decisions about what they might do in the community.

Considerations for Deciding Appropriate Water Treatment Methods in Particular Settings

Method	Positive Factors	Negative Factors
Boiling water	<ul style="list-style-type: none"> • Some or many families are already boiling water. • Fuel is easily available and free or affordable. • Fuel burns relatively cleanly &/or young children are not greatly exposed to smoke from fire (because well-ventilated, children kept at distance, etc.). • Mothers have time to boil. 	<ul style="list-style-type: none"> • Few families already boil drinking water. • The fuel used is not easily available unless purchased. • Taking fuel is causing deforestation and flooding. • Burning fuel creates lots of smoke that babies are exposed to (indoor burning, babies near fire, poor ventilation). • Mothers are already too busy to boil. • Families don't take sufficient care in storing and retrieving their water.
Chlorination	<ul style="list-style-type: none"> • Commercial product available, accessible, and affordable. • Instructions for use are clear and understood. • Clorox or another chlorine product is available, accessible, affordable, and not sold diluted. • People can understand and are motivated to follow simple instructions (e.g., mix Sugar Salt Solution [SSS], Oral Rehydration Salts [ORS] correctly). 	<ul style="list-style-type: none"> • No commercial product is available, accessible, and affordable. • Instructions are not clear and understood. • Clorox or other chlorine products are sometimes or often sold diluted or concentration is not consistent. • People have trouble following simple instructions (e.g., problems with correct mixing of SSS or ORS). • Clorox is not culturally acceptable for treating water (e.g., because of local beliefs such as it's used to cause abortions). • Families dislike taste of properly chlorinated water. • The water is turbid.
Filtration	<ul style="list-style-type: none"> • Effective filters are available, accessible, and affordable. • Instructions for use are clear and understood. • The family has time to use and maintain the filter properly. 	<ul style="list-style-type: none"> • Effective filters are not available, accessible, and affordable. • Instructions for use are not clear and understood. • Mothers are already too busy to use and maintain filter.
SODIS	<ul style="list-style-type: none"> • Mostly sunny climate is needed. • Families either can purchase safe (PET) plastic bottles or program can provide bottles or they are easily 	<ul style="list-style-type: none"> • Cloudy, rainy climate doesn't work. • Many families cannot purchase safe (PET) plastic bottles, nor can they get them for free.

	<p>found in the trash.</p> <ul style="list-style-type: none"> • People can understand and are motivated to follow simple instructions (e.g., problems with correct mixing of SSS or ORS). • There is a cadre of community-based workers that can monitor solar disinfection. 	<ul style="list-style-type: none"> • People have trouble following simple instructions (e.g., problems with correct mixing of SSS or ORS). • Families need to treat large volumes of water. • There is no cadre of community-based workers who can monitor correct solar disinfection.
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SYNTHESIS SESSION ON WATER: BARRIERS AND MOTIVATIONS

Session Objectives

By the end of this session, the participants will have:

1. Consolidated their insights on what they've learned about water.
2. Identified some of the major issues facing the community regarding potable water.
3. Identified some of the potential audiences for possible mutual planning sessions.
4. Explored barriers and motivators for adopting new practices.

SESSION AT A GLANCE: Water Synthesis

Activity	Time	Materials
A. Introduction to the Session Trainer reviews highlights from previous sessions on water.	5 minutes	- Flipchart, tape, markers - All previous session posters on water
B. Large Group Activity Participants discuss how to apply what they've learned about water treatment to their specific communities.	60 minutes	- Flipchart, tape, markers - All previous session posters on water - Copies of the consolidation matrix for water (<i>Outreach Worker's Handbook</i> p. 29) for each table and/or large copy for the front of the room



65 minutes

PREPARING TO TEACH THIS SESSION: Water Synthesis

Before teaching Module 2, Session 8, you should:

1. Gather all the previous sessions' flipcharts on water.
2. Make copies of the Consolidation Matrix for Water (*Outreach Worker's Handbook* p. 29 and in the *Collection of Resource Materials*) for each table or have one very large copy in the front of the room.

TRAINING ACTIVITIES: Water Synthesis

A. Introduction to the Session (5 minutes)

1. Review the highlights of the sessions on water or ask the participants what key points they remember regarding the locally accessible ways to treat water and the best ways to transport, store, and retrieve water. Make sure you have the flipcharts from the previous water sessions hanging where the participants can see them.
2. Tell the participants that during this session they will have the chance to consolidate all their thoughts about water, especially from the discussion in the previous session on helping families choose.

At the end of the session, participants will have a clearer idea of where they might want to focus their work to make sure people have potable water.

B. Large Group Activity (60 minutes)

1. Move the participants so that they are sitting with others from their own organization, if appropriate. Post or distribute copies of the Consolidation Matrix for Water.

Ask each group (or individual participants) to think about the following:

- Based on what they've learned about the importance of clean and safe (potable) water, what, for them, are some of the major WASH issues that should be addressed in the community?
- Who are some of the potential audiences they should be working with (individuals, families, groups)? Be specific.
- What are some of the prevalent current practices regarding water treatment?

- What could the community members be doing instead of some of the current (not so ideal) behaviors?
- Which water treatment, transport, storage, retrieval/serving behaviors are viable for most of the community members?
- What are some of the barriers to getting people to change their behaviors?
- What are some of the factors that will help people change (enablers) their behavior?
- What, of the activities they saw demonstrated, might they do in the community?



Trainer Note:

The idea is to have them think about the different communities where their organization is presently working and use that as the basis for filling in the table. They should try to fill out at least one column for a community.

CONSOLIDATION MATRIX FOR WATER

Major Water Issues	Community One	Community Two	Community Three
Possible clients for mutual planning or opportunities for creating awareness for water			
Current behaviors regarding water			
Some possible alternatives			
Barriers to adopting new practices			
Enablers to adopting new practices			
Specific potential activities for the outreach worker			

3. Conduct a large group discussion. Charts can be posted around the room for a gallery walk, if time permits.
4. Make the link with the next session now that the participants have completed their study of water. Remind them that they are going to take a look at how to help individuals, families, and groups improve their ability to have clean hands. They will have four sessions on hand washing and then the chance at the conclusion to synthesize their thoughts as they plan for activities in the field.