

Indicator: # of households that have a safe water storage vessel with water that has been correctly disinfected (HE_MNCH_113)HEALTH SECTOR PROJECT AREA: Maternal,
Newborn, and Child Health

Type: Outcome

Unit of Measure: Household

Disaggregation: None

Related Objective: Increase the knowledge and skills of child caregivers to keep children under 5 healthy (Objective 2)**Precise definitions****Household:** a person or a group of persons, related or unrelated, who live together in the same dwelling unit, who make common provisions for food and regularly take their food from the same pot or share the same grain store, or who pool their income for the purpose of purchasing food.

A household should only be included if the mother, father, or caregiver attended a multisession training on prevention of childhood illness co-facilitated by a PCV and their counterpart or local health staff/volunteer. The caregiver should have attended at least 75 percent of sessions to be counted in the denominator for *HE_MNCH_114: Number of target population reached with individual or small group education on prevention of common childhood illnesses*, and therefore this indicator.

Safe water storage vessel: is defined as having a container that is durable and has a lid. The opening should be large enough to easily fill and clean the vessel but small enough to reduce the potential of introducing contaminants from hands, dipping utensils, dust, vectors, or other sources. Water must be able to be withdrawn in a sanitary manner such as a tap, spigot, spout, or other narrow opening.**Correctly treated/disinfected water:** water that has been: 1) filtered through a cloth then boiled for a minimum of one minute; 2) treated with iodine; 3) treated with chlorine bleach using an appropriate ratio of water to disinfectant (i.e., 1/8 teaspoon of bleach to 1 gallon of filtered water); 4) disinfected through solar water disinfection (also known as SODIS), which is a method using only sunlight and plastic PET bottles.

- **Boiling** is the most certain way of killing all microorganisms. Water temperatures above 160° F (70° C) kill all pathogens within 30 minutes and above 185° F (85° C) within a few minutes. So in the time it takes for the water to reach the boiling point (212° F or 100° C) from 160° F (70° C), all pathogens will be killed, even at high altitude. To be extra safe, let the water boil rapidly for one minute, especially at higher altitudes since water boils at a lower temperature.
- **There are two types of chemical purification:** those using iodine and those using chlorine. The effectiveness of all chemical treatment of water is related to the temperature, pH level, and clarity of the water. Cloudy water often requires higher concentrations of chemicals to disinfect. If the water is cloudy or filled with large particles, strain it, using a cloth, *before* treatment. Large particles, if swallowed, may be purified only "on the outside."
 - Add the chemical to the water and swish it around to aid in dissolving. Splash some of the water with the chemical onto the lid and the threads of the water bottle so that all water areas are treated. The water should sit for *at least* 30 minutes after adding the chemical to allow purification to occur. If using tablets let the water sit for 30 minutes *after* the tablet has dissolved. The colder the water, the

less effective the chemical is as a purifying agent. Research has shown that at 50° F (10° C), only 90 percent of *Giardia* cysts were inactivated after 30 minutes of exposure. If the water temperature is below 40° F (4° C), double the treatment time before drinking. It is best if water is at least 60° F (16° C) before treating. You can place the water in the sun to warm it before treating.

- Iodine is light sensitive and must always be stored in a dark bottle. It works best if the water is over 68° F (21° C). Iodine has been shown to be more effective than chlorine-based treatments in inactivating *Giardia* cysts. Add 5 drops per quart of liquid 2-percent tincture of iodine when the water is clear. Add 10 drops per quart when the water is cloudy. Potable Aqua is an iodine tablet product; follow the manufacturer's instructions for use.
- *Be aware that some people are allergic to iodine and cannot use it as a form of water purification.* Persons with thyroid problems or on lithium, women over 50, and pregnant women should consult their physician prior to using iodine for purification. Also, some people who are allergic to shellfish are also allergic to iodine. If someone cannot use iodine, use either a chlorine-based product or a non-iodine-based filter, such as the PUR Hiker Microfilter, MSR WaterWorks, or the Katadyn Water Filter.
- **Chlorine treatment** Chlorine can be used for persons with iodine allergies or restrictions. Remember that water temperature, sediment level, and contact time are all elements in killing microorganisms in the water. Treat with chlorine bleach using an appropriate ratio of water to disinfectant, i.e., add 1/4 teaspoon (16 drops) of bleach per gallon of water if the water is cloudy and 1/8 teaspoon (8 drops) if the water is clear.
- **Solar water disinfection (SODIS):** The SODIS method is very easy to apply. A transparent and colorless PET bottle is cleaned with soap. Then, the bottle is filled with water and placed in full sunlight for at least six hours. The water has then been disinfected and can be drunk.

Water quality: WHO recommendations for water quality are mainly based on the level of *Escherichia coli* (or thermo-tolerant coliform organisms). *E. coli* must not be detectable in any 100 milliliter (ml) sample.

Data collection

Tool: Child Health Outcomes Survey

The Child Health Outcomes Survey is intended to be given to the mothers/caregivers who participated in a multisession training focused on preventing and managing childhood illnesses facilitated by the PCV and their counterpart. This survey tool should be used three times:

- 1) As a pre-test at the start of the first training session/meeting
- 2) As a post-test at the last session/meeting to assess change during the time of the training
- 3) Three to six months after the training/activity has finished to assess whether knowledge is retained

All mothers/caregivers should be given the pre-test and post-test. Only mothers/caregivers who attended at least 75 percent of the defined information sessions should be included in the survey three to six months afterward. If the timing of a PCV's close of service (COS) or other factors will not allow for this, a survey could be conducted earlier, but some indicators may need to be removed. For example, the indicator around pentavalent vaccine is time bound and not enough time may have passed to measure it accurately. While it is the mother/caregiver who is given the survey, many of the questions are focused on the child/infant. The survey should be conducted by the PCV and their counterpart or co-facilitator of the group following the instructions provided in the outcome survey tool closely. The survey should only include the topics that were included in the training on preventing and managing child illnesses. Questions should be removed from the survey if not discussed in the training.

Reporting

To be counted for this indicator the following criteria must be met:

- The woman/father/caregiver attending the training has children under 5 years of age.

- The individuals attended at least 75 percent of the training sessions and/or information offered on prevention of childhood illnesses.
- The information was provided by a PCV or their partner in an individual or small group setting of 25 people or less.
- Attendance at each session was documented by the Volunteer or their partner.