

## Camping at Home

May 23, 2018

### Hygiene, Waste Disposal and Bathing

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When disaster victims are sheltered together for treatment, public health becomes a concern. Measures must be taken to avoid the spread of disease.

The primary public health measures include:

- Maintaining proper hygiene
- Maintaining proper sanitation
- Purifying water (if necessary)
- Preventing the spread of disease

#### MAINTAINING HYGIENE

Maintenance of proper personal hygiene is critical even under makeshift conditions.

Some steps that individuals should take to maintain hygiene are to:

- Wash hands frequently using soap and water. Hand washing should be thorough (at least 15 to 20 seconds of vigorous rubbing on all surfaces of the hand).
- Alcohol-based hand sanitizers — which don't require water — are a good alternative to hand washing. The Centers for Disease Control (CDC) recommends products that are at least 60% alcohol. To use an alcohol-based hand sanitizer, apply about  $\frac{1}{2}$  teaspoon of the product to the palm of your hand. Rub your hands together, covering all surfaces, until hands are dry.
- Wear non-latex exam gloves at all times. Change or disinfect gloves after use. As explained earlier, under field conditions, individuals can use rubber gloves that are sterilized between treating victims using bleach and water (1 part bleach to 10 parts water).
- Wear an N95 mask and goggles.
- Keep dressings sterile. Do not remove the overwrap from dressings until use. After opening, use the entire package of dressing, if possible.
- Thoroughly wash areas that come in contact with body fluids with soap and water or diluted bleach as soon as possible.

### **Infection risk can be reduced by:**

- Controlling the disposal of bacterial sources (e.g., soiled exam gloves, dressings, etc.)
- Covering all open wounds
- Putting waste products in plastic bags, tying off the bags, and marking them as medical waste. Keep medical waste separate from other trash, and dispose of it as hazardous waste.
- Burying human waste. Select a burial site away from the operations area and mark the burial site for later cleanup.

### **WATER PURIFICATION**

Potable water supplies are often in short supply or are not available in a disaster. Water can be purified for drinking, cooking, and medical use by heating it to a rolling boil for 1 minute or by using water purification tablets or non-perfumed liquid bleach.

The bleach to water ratios are:

- 8 drops of bleach per gallon of water
- 16 drops per gallon of water, if the water is cloudy or dirty

Let the bleach and water solution stand for 30 minutes. Note that if the solution does not smell or taste of bleach, add another six drops of bleach, and let the solution stand for 15 minutes before using.

Rescuers should not put anything on wounds other than purified water. The use of other solutions (e.g., hydrogen peroxide) on wounds must be the decision of trained medical personnel.

### **WASTE DISPOSAL**

- Average 2-3 pints urine & 1 pound stool per person per day
- Consider separation of urination from defecation to increase storage capacity

### **DISPOSAL OF WASTE IN GRID DOWN SITUATION**

If on a septic system & available water

Fill back tank up to the float & flush or add approximately 2 gallons into the bowl which will cause self flush



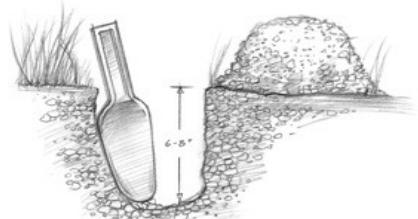
**If on city sewer lines:**

- If sewer main is down do not flush
- Make sure that sewer lines are functioning you may flush in same manner as with septic system

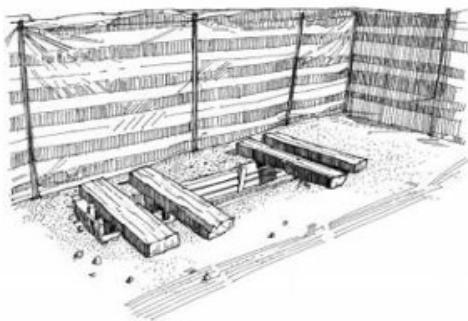
**NON-WATER DEPENDENT METHODS OF WASTE DISPOSAL**

Waste disposal in rural areas

**Cat Hole**



- Dig hole 6-8 inches deep X 4-6 inches in diameter & cover with dirt
- Avoid contaminating local water sources
- Disperse holes over a wide area
- Sun exposure promotes decomposition



**Trench Latrine**

- Minimal dimensions: 1.5 feet wide X 1 foot deep X 2 feet long
- Add a privacy partition
- Stretch 2X4s over hole for comfort
- Cover waste with wood ash, lime or dirt

### **Use existing toilet with sewer line down or limited water**

- Remove water from bowl
- Tape double trash bag to underside of seat
- Cover waste with wood ash, lime, kitty litter or sawdust
- When bag 2/3 full cover with more of the above materials or dirt sprayed with chlorine solution
- Tie up bag & store in bucket or trash can until proper disposal later



### **5 gallon bucket can be used like a toilet**

Sit on rim, existing toilet seat, toilet seat made for buckets or a couple of 2X4s



## **BATHING**

The types of showers in the market place seem to fall into distinct groups which we will briefly touch on here.

### **Compact Showers**

If you are looking for simplicity, with no hot water, there are showers available for you. These showers are for people who just want to get clean with minimal fuss and financial outlay.

They are basic in design and all about getting wet.

### **Solar**

These solar showers rely on the heat of the sun to warm the water, and come in a variety of styles. No sun means no warm water.

If you plan on being out for the day, you will want to make sure the bag doesn't fall into shade otherwise the water will cool down quite rapidly. So be organized with filling your bag and making sure that when the sun comes out, your bag is going to be able to absorb maximum rays.

The manufacturers issue a warning that the water within the bag can become dangerously hot, and I suppose depending on where and when you use it, this may be an issue, so always exercise caution.

The basic versions are the black PVC bags that are designed to hang from a tree after being in the sun all day, and have a small hose as the showerhead (it's generally detachable, and the bags can be prone to leaking when full). If looking at a solar shower you will notice that this is a very common product produced by many manufacturers, with varying features, but all basically doing the same thing. The more pricey solar showers may have a few more features but work out if they are features you actually need.

Some solar systems will just have the bag, and you can purchase additional hoses, showerheads and 12v pumps to work in conjunction with the solar shower.

**Positives:** Cheap, readily found in stores. Wide variety on offer. Simplistic. Little impact on environment

**Negatives:** Can be very heavy to lift when full of water. Requires a sunny, warm day and a number of hours to get the hot water. Can puncture. Will need to move the bag to maximize time in sun. Limited water capacity for a family. Some handles are flimsy. Work on gravity to deliver the water when used as a shower.

## **Hot Water On Demand**

These showers require Lithium/12V batteries or gas to heat the water. They come with the necessary hoses and shower heads, and deliver pressurized, heated water on demand. With the ability to control the temperature, this is camping in comfort.

Some components to operate may be sold separately eg. the Aquacube Digital needs a gas cartridge to operate (or a specific hose to attach to your gas bottle) so that's another cost you must factor in.

Do your homework when you narrow down a model that appeals. Shop around. After sales service is very important and ability to get parts/extras needed to operate should be easy too. Make sure you buy everything you need to operate successfully and safely.

**Positives:** Hot water quickly. Temperature controls. A variety on the market to look at.

**Negatives:** Weight and Size. Need to use a power source (if using gas you will need to have ample). Expensive: some can be cost around \$500.

## **Other Heat Source Showers**

A shower that gets heated not from a battery/power source, but from a campfire or stove top to heat the water (solar can remain an option for this if needed).

**Positives:** Variety of heat sources to choose from. No power required. Simplicity in using.

**Negatives:** As the hot water stored within, need to be careful if moving. Depending on model, can be bulky. Not cheap.

## **Pressure Showers**

No batteries or power are required -- but by using pressure (via a pressure chamber or manually) water is delivered via a hose.

There are a few varieties on the market --and for some people they even use a weed killer pump bottle (without the weed killer) for their shower.

The cold/hot water needs to be added to the containers before delivering the pressurized water.

**Positives:** No batteries/additional power sources. Depending on brand, could be suitable for backpacking as compresses. No need to lift above your head for the water to reach you, as gravity is not required.

**Negatives:** Harder to clean. To get hot water, you have to add it hot to the shower. Size and weight may make it not suitable for some camper

## **References**

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