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**BETTER TIMES EMERGENCY NOTES: Hygiene, Trash, Human Wastes**

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**Hygiene**

This is the first line of defense against the spread of disease and despair. If electricity is not available, household duties require the assistance of everyone. Persons with special needs (such as families with young children or the elderly) may need the help of neighbors. Attacking messes when they are "small" keeps them from becoming big problems. If water is scarce, scrub pots and dishes with brushes (or clean sand, or newspaper) to remove food particles and grease, and then wash in hot soapy water.

Use ordinary unscented chlorine bleach (sodium hypochlorite, 5.25% in water solution, such as Clorox) to make sanitizing and disinfecting cleaning solutions. To make a **sanitizing solution**: For hard, non-porous surfaces, use 1 tablespoon liquid bleach in 1 gallon water, wet and then air dry, don't rinse. For porous surfaces (like a wood cutting board), use 3 tablespoons bleach per gallon, wet liberally, rinse and wipe dry. **To make a disinfecting solution**: Use 3/4 cup bleach in 1 gallon of water, small items can be soaked, surfaces such as floors or counters should be wet liberally and kept wet for 2 minutes. 1 tablespoon of powdered detergent may be added, but do not add anything that contains ammonia, as it reacts badly with chlorine. Rinse after disinfection. For toilets, pour 1 cup bleach into the bowl, brush, let stand for 10 minutes. Change the solutions frequently when doing heavy cleaning.

Use rubber or plastic tubs or buckets and a household plunger to wash clothes without electricity. Put water, detergent, and clothes in the buckets. Cut a hole in the lid for the plunger handle (the agitator). Soak the clothes. Insert the plunger handle through the lid, put the lid on the bucket, agitate, and voila, wash day without electricity. You can use the sink, but if water is scarce, don't let the wash water to run down the drain (if the sewer isn't working, the drain may be clogged). Use a tub of clear water to rinse the clothes. Some clothes may require hand scrubbing. Air dry by hanging on clothes lines or hangers. In winter, you can air dry outside, but you may have to crack ice to remove it from the clothes (wear gloves when hanging clothes in winter). Hand wringing clothes is laborious work, you'll want extra hands to help; Use the wringer of a commercial mop bucket.

**Personal Cleanliness**

If water is scarce, use a bucket or tote instead of the tub for bathing. If you use a sink, don't let the water disappear down the drain, you'll need it for flushing the toilet. Put the tote in the bathtub and stand inside it. Use a camp shower, sprinkler bucket, or cups of water, or a wash cloth and a basin of water. Wash your hands regularly, especially after using the toilet; many diseases are passed hand to mouth. If water is scarce, pour a chlorine bleach disinfecting solution over your hands (mix this in a jug, and have it ready for use). Cornmeal or cornstarch can be used as dry shampoos (sprinkle liberally in the hair, and then brush vigorously). Use only boiled or otherwise purified water for brushing your teeth or cleaning contact lenses. If you usually shave, continue to do so unless a scarcity of water or lack of razor blades make this impossible. On sunny days, you can have hot water for washing by painting food grade plastic buckets (with lids) black, filling them with water, and putting them in the sun. (This can also be a source of free heat; put several into the sun, and bring them in to help keep a room warm.) You can also paint 2 liter pop bottles black to obtain smaller amounts of hot water.

**Maintaining normal routines is important. Don't skip your daily bath! It boosts morale and prevents disease. Be proactive in your community to ensure public health.**

## **Trash**

If normal services are interrupted, trash is a serious urban health danger. If you don't take care of it, the rats and flies will, and you won't like that. The primary rule is: Be careful what you throw away and how you throw it away. "What ya do with what ya got" is a traditional saying that bears remembering. People can respond creatively to disruptions of normal supplies and services. When you begin to think of your trash as less of a disposal problem and more of a useful resource, you're getting to the point.

Start by throwing away less stuff. Bottles and cans have other uses once they have been emptied; food and shredded paper can be composted. If stores are closed, you'll find uses for cans. Sort what you throw away; a big problem with recycling is the practice of mixing different kinds of trash. Don't mix wet and dry trash! You will create a stinky mess that will be attractive to flies and rats. Keep toxic items such as spray paint cans separate. Don't put disposable diapers in with other trash. Separate it, bag it, stack it, and cover it with a tarp so it can't get wet.

Compost the wet trash. Mix shredded dry materials (such as newspapers, leaves or sawdust), wet and green trash (lawn clippings, kitchen/garden scraps -- no meats or fats -- and dirt. Keep this compost heap covered with dry material, and slightly damp. If it starts to stink, you probably need to add more dry material or dirt. As the compost rots, it generates heat. You can capture some of this heat as hot water by running a garden hose through the compost heap(s).

Don't put disposable diapers into latrines, compost heaps, or bury them in the ground. If trash collection is disrupted, switch to cloth diapers. Disposable diapers in a disaster situation are a disaster in and of themselves. They can't be burned (institutions can be fined for burning them in their trash incinerators). If you bury them, you could end up digging up your entire yard and you will have a backyard full of diapers that will never decompose. Bag and stack them if you must, but cloth diapers are actually less hassle than fly-infested bags of smelly "disposable" diapers. Feminine pads and tampons should be buried or burned.

If disruptions of trash collection are prolonged, you may be tempted to organize the burning of trash, but this should be done in conjunction with public authorities such as fire or police departments. Be pro-active in organizing your neighborhood to take care of its trash. Don't wait for the flies and the rats to start working on it. Think of your community's trash as a resource that can be used to help people get through tough times.

## **Disposal of Human Wastes**

The breakdown of a city's sewage system is an immediate threat of the spread of disease. Improper disposal of human wastes causes epidemic diseases that kill people. Immediate intervention is required.

Do not use public spaces such as parks or lawns for human waste disposal on the surface of the ground. Do not bury human waste in snow. If the sewer works, but the water doesn't, use water that has been used for washing to flush the toilets. The "California System": "If it's yellow, it's mellow; if it's brown, flush it down".

Chemical toilets (such as porta-potties) are a temporary solution, but something must eventually be done with the sewage in the storage chamber. If you have access to a gas station or RV park, or if trucks can come and pump the tanks, you can dump into a holding tank; this service may be limited by the availability of fuel and electricity.

To make an emergency toilet, put a toilet seat on a rigid plastic bucket. In the bottom of the bucket, place some sawdust, peat moss, or dried leaves mixed with some dirt. After each use, add more of this material so the waste is covered. When the bucket is full, you have 2 options: (1) Dig a hole in the ground about six feet deep and 2 or 3 feet across. Empty into the hole, and cover completely with dirt. Cover the hole with a board weighted down with bricks or rocks. When this has been filled to within 2 feet of the surface, fill it the rest of the way with dirt. Disposal holes must be at least 8 yards away from a source of water such as a well, pond, or stream. (2) empty into a compost heap, and cover completely with natural materials. (This compost should be aged for at least one year before using, and it must be monitored to ensure that it heats up properly so the disease pathogens are killed.) An alternative is to put water in the bucket, and empty it each time it is used for solid wastes. After rinsing, disinfect with a chlorine bleach disinfecting solution.

The primary problems of outdoor pit latrines are flies/mosquitos, odors, and the spread of disease, none of which are minor nuisances. Manage these by: (1) covering the pit with a slab of concrete or plywood; this slab must fit tightly to the pit walls so that there are no gaps or holes between the latrine cover and the edges of the pit, (2) installing a capped and screened vent pipe that rises at least 18 inches above the roof of the latrine, and (3) using a tight fitting seat cover inside the latrine. Paint the vent pipe black and place on the sunny side of the latrine. This heats the air inside the pipe, causing it to rise and draw air out of the pit, minimizing odor.

If toilet paper is not available, many common papers can substitute, such as newspaper or phone book paper. Some cultures use water for cleansing.

Your health and wellness in disaster situations depends a lot on your community's ability to properly meet the challenges of public health such as hygiene, trash, and sewage disposal.

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**Work together with your neighbors to increase the safety, security, health and wellness of your family and community.**