

## Sanitation Preparation – Roald Peterson

### Introduction

- Sanitation is critical component of preparedness, but usually overlooked
- Lack of sanitation can result in inconvenience, discomfort, odors, clutter, rodents, insects, parasites, disease, and death
- Often, more people die after a disaster due to poor sanitation than from the disaster itself
- Consider levels of need when preparing
  - Emergency – few hours
  - Adventure – few days
  - Lifestyle change – months or years

### Water

- Lack of water kills you faster than lack of food
- Store emergency water for drinking, cooking, washing, bathing, cleaning, flushing
- Minimum 2 gallon/day/person for 2 weeks
- Know where to get more water
- Know how to purify water and have water purification supplies on hand
- EPA water disinfection instructions:  
[www.epa.gov/OGWDW/faq/emerg.html](http://www.epa.gov/OGWDW/faq/emerg.html)
- Consider water transportation
- Consider storing rain water

### Toilet

- Have multiple options!
- **If sewer is available:**
  - Store water to flush and use dish/laundry/cooking water to flush
  - Flush after multiples uses - when appropriate
  - Keep lid down
- **If sewer is not available, use toilet as “bucket”**
  - Empty toilet of water, turn water off.
  - Use plastic bag to line the bowl, under the seat
  - Keep supply biodegradable bags on hand
  - Keep bag closed when not in use.
  - When bag is about half full bury it at least 18 inches underground away from water and food sources
- **Portable Toilets** - For emergencies and adventures
  - Purchased versions (luggable loo, etc.)
  - 5 gallon bucket with toilet seat & lid

- Use your home toilet seat or 2 boards and line it with a bag (Need extra bags)
- Portable toilet chemicals or make your own:  
<http://www.lets-getaway.com/homemadetoiletchemicals.htm>
- Or sprinkle disinfectant after each use – Chlorinated lime, bleach, household disinfectants (Pinesol, Lysol Cleaner, Arm & Hammer cleaners, plain baking soda, laundry detergent, etc.) Dry bleach can eat through your bags and container
- Bury bag when half full (Put disposable diapers in this bag before burying)

### • Chamber Pot

- Goes under bed or similar location
- For inconvenient times – cold winter, night
- Empty and clean daily

### • Latrine - Temporary outside toilet

- Cover with tent for privacy & warmth
- Can straddle a trench, or build a “seat”
- Be a good kitty - Cover solids with a little dirt
- Make deep enough to last awhile ~ 2 feet +

### • Outhouse - Consider for long term situations

- Location – close enough and far enough. Keep away from water and food supplies
- Have plans and materials ready to build
- Use a real toilet seat if possible
- Sprinkle chlorinated lime, bleach water, ashes, kitty litter, or sawdust after use

### Toilet Paper - TP = Civilization

- Find out how much you use - You can never have too much
- Learn/teach how to fold TP
- Thinner ply - longer rolls, less cost, store more
- **Toilet Paper Substitutes**
  - Baby wipes, Hand and water, Bidet, Wash Cloth, Rags, Sponge
  - Make Portable Bidet Kit (1 per person) with peri bottle, Sponge, Flannel wipes, Wash kit (Google “portable bidet” for more options)  
[www.provident-living-today.com/Portable-Bidet.html](http://www.provident-living-today.com/Portable-Bidet.html)
  - Most paper can be used if you crumple the paper repeatedly, working it into a “soft” texture
  - Snow is cold but works

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- Careful with plants/leaves - may cause reaction.
- Keep Petroleum Jelly around for healing
- Can use sponge or rags cut into squares – wash over bucket and rinse with small pitcher of water with bleach, vinegar, or salt in it. Mark pitcher so people don't drink. Hang cloth on YOUR hook.
- Can use spray bottle to dampen like wet wipe
- **Diapers -**
  - Have some disposables for emergencies/travel
  - Get cloth diapers, safety pins, plastic pants, pail
  - Put used cloth diapers in pail with bleach water
  - Wash diapers apart from other clothes

### Sewage

- Human waste produces hydrogen sulfide
- Store in containers with lids until ready to bury
- Bury in trenches 18-30 inches deep
- Keep away from water, food supplies, windows, doors, walkways

### Bathing & Personal Hygiene

- All depends on how much **water** is available
  - If lots of water then have a bath or shower
  - If less is available then have Navy shower
  - If little is available have a sponge bath
  - If none is available use hand disinfectant
- Store tubs, water heater, and bathing supplies
- Keep hands as clean as possible - You can't afford to get sick!
- Always wash hands before eating
- **Solar Water Heaters** - Google search if interested
- **Other Alternatives**
  - Dandruff Shampoo - Plain vinegar rinse
  - Shaving cream - Hair conditioner, olive oil
  - Deodorant - Corn starch or baking soda
  - Body lotion - Baby oil
  - Foot care - Soak feet in Koolaid (lemon lime), or put baking soda in shoes
- **Water Substitutes for Cleansing** - Rubbing alcohol, Lotions containing alcohol, Shaving lotion, Face creams and lotions, Moist towelettes, Wet wash cloth, Makeshift shower - Use a spray bottle to shower.
- **Shaving** - Store razors if you want to shave. Also shaving cream, shaving mug, soap, shampoo, or oil

### Dental

- In a long term situation dental care will not be available; take care of your teeth
- Store extra tooth brushes and floss
- Mouth wash (or hydrogen peroxide with ½ water)
- Tooth Paste or Baking Soda, salt (hard on enamel)
- Consider storing temporary dental repair or filling kits. Also search for dental first aid, tooth ache kit.

### Feminine Needs

- If needed, keep supply of pads or tampons available: Number of females **X** how many supplies per month **X** number of months
- Consider storing sanitary items for company or helping others in an emergency situation
- Consider alternatives for when regular supplies become unavailable
- Diva Cup - A reusable cup highly recommended by some. Has a learning curve.
- Recommend 2 menstrual cups in 72 hour kit. Silicone cups preferred by some. A silicone cup can be boiled once a day
- Another alternative is to make your own pads - Google search on how to make feminine pads
- Pine Tar soap effective at keeping feminine regions & body creases free of fungal infections. Favorites are Grandpa's Pine Tar Soap and Packer's. Also makes good shampoo
- Citric acid powder mixed with water makes a good rinse
- Remember other things you'll need - PMS medications, pain relievers, or herbal remedies, Birth control, Medication for yeast infections, Hormone creams, vitamins, and medications
- See YouTube – Emergency Feminine Supplies

### Laundry

- Bath tub, Wash tub, bucket, and Wringer
- Wash board, Plunger
- Detergent, soap, bleach (hot water & baking soda)
- Build DIY Washing Machine
- **Laundry - Drying**
  - Use railings, doors, etc.
  - Buy or build a clothesline
  - Just need dry, not freezing weather

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- Drying in sun kills germs
- Drying in wind makes clothes soft and fresh
- Can put line in the house for bad weather
- Can use straight or rotary clothes line
- Materials: plastic covered wire or rope, posts, clothes pins
- **Solutions for Cleaning or Disinfecting**
  - Liquid chlorine bleach – 2 ½ teaspoons per gallon (use for rinsing & cleaning - **NOT FOR DRINKING**)
  - Calcium hypochlorite, swimming pool stores;
  - Powdered, chlorinated lime, available at building supply stores.
  - Gloves

### Garbage

- Separate dry, burnable garbage from wet garbage
- Burn dry garbage in burning barrel, open yard
- Drain liquids from wet garbage
- Bury wet garbage under at least 18 inches of dirt
- Can also put wet, food garbage in compost pile
- Make a Burn Barrel
- Make or buy Compost Barrel

### Food Preparation

- Be careful accepting food or water from unknown source – pray and ask...
- Keep hands, cooking and eating utensils clean
- Wash all fruits and vegetables (peel if needed)
- Keep all food in covered containers
- Prepare only as much as will be eaten at each meal
- Avoid leftovers if there is no refrigeration
- Keep food preparation surfaces clean and avoid contact between raw and ready-to-eat food

### Pans, Dishes, & Eating Utensils

- Keep pans, dishes, utensils clean
- Rinse with chlorine bleach solution (2 ½ teaspoons of liquid bleach to 1 gallon of water)
- Try not to share dishes and utensils
- Have paper and plastic ware for emergencies when there is no time or water to wash
- Use wash water for flushing toilet or watering plants (if it won't kill plants)

### Controlling Insects & Rodents

- Keep area clear of debris, garbage, refuse, and body wastes
- Mosquito netting for sleeping, Insect repellent

### Death

- Consider What, Where, How, Who, When
- If no mortuary services, need to consider burial
- May be able to set apart common cemetery
- Treat like waste (depth, avoid contamination)
- Keep records (put copy with body.) Mark grave

### Teaming With Others

- More skills & resources – Maybe
- More garbage & human waste
- More opportunity for disease
- Most people are not preparing or learning – They will not help
- Decide if teaming helps you, breaks even, or hinders you from keeping your family alive

### Training

- In addition to storing things, learn how to make them and use them.
- Practice while considering different scenarios

### Downloads

- **Hesperian books:** <http://en.hesperian.org>
  - PDF files are here:  
[http://rachel.worldpossible.org/modules/hesperian\\_health](http://rachel.worldpossible.org/modules/hesperian_health)
  - Or google internet for these titles with pdf:
    - Where There Is No Doctor
    - Where Women Have No Doctor
    - A Community Guide to Environmental Health
    - A Book for Midwives
    - Where There Is No Dentist
    - Helping Health Workers Learn
    - Disabled Village Children
    - A Health Handbook for Women with Disabilities
    - Helping Children Who Are Deaf
    - Helping Children Who Are Blind
    - Pesticides Are Poison
    - Sanitation and Cleanliness
    - Water for Life

- **Johns Hopkins' Health Guide for Emergencies**

[http://www.jhsph.edu/refugee/publications\\_tools/publications/\\_crdr\\_icrc\\_public\\_health\\_guide\\_book/public\\_health\\_guide\\_for\\_emergencies](http://www.jhsph.edu/refugee/publications_tools/publications/_crdr_icrc_public_health_guide_book/public_health_guide_for_emergencies)

- Or google “Public Health Guide for Emergencies pdf”

- Recommend buying or printing books to have on hand – computers may not be available when you need information

- Take a class or get a textbook on Microbiology

- Deseret Industries sometime has them

- Amazon – look at used copies

- Free Indian textbook available as PDF download

- <http://www.textbooksonline.tn.nic.in/books/11/std11-microbio-em.pdf>

- Other Free Textbooks in many areas:

- <http://bookboon.com>

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**Portable Bidet Kit**

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- 1 Peri Bottle
- 2 sponges (3 ¾" x 2 ¾")(color: orange or natural)
- 16 double-layered flannel sheets. The edges have been surged. Sheets are approximately 4 ½" wide x 6½-7½" long.
- 1 plastic gallon bag to hold all of the items
- 1 per person recommended
- Use peri bottle to wash yourself. Water should do most of the cleaning.
- Sponge can be used to scrub, if needed. Wash the sponge with soap and water between each use.
- Flannel wipes are for drying yourself after washing.
- Wash kit with disinfectant regularly