Emergency Sanitation: Minding your Pees and Poos

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Guidelines for presenters by Judith Ann Gaffke and Sara Wright of the Richmond Neighborhood Association with input from Jim Newcomer of Lake Oswego's Waluga Neighborhood Association. Note that this Outline covers handwashing in addition to toilet use. Authors stress that this is an evolving document and invite your comments and suggestions.

Outline

- **Introduction**
  - *Who We Are*
    - neighborhood residents with no expertise in composting.
    - We would be happy to connect people with expert resources for more detailed questions and discussion.
  - *Our goal is to give you a brief orientation for emergency sanitation.*
    - We know this can be an embarrassing topic, and that sometimes people are reluctant to talk about it or plan for it, but we think it's a critically important part of preparedness.
    - Most illnesses after a disaster happen because of poor sanitation.
    - Today we're going to talk a little about WHY you need to plan for emergency sanitation, and then go into the nitty-gritty of WHAT you can do yourself, easily and cheaply, to prepare.
- **Why Do We Need to Plan for Emergency Sanitation? (Sara) - 4 min**
  - *In a disaster, we're going to have a problem with sanitation*
    - Underground infrastructure will be affected by an earthquake or flooding. This will affect not only the sewage system, but also access to fresh water.
    - Fresh water may also be affected by broken water pipes. If none is available, sanitation becomes a *huge* problem. Clean drinking water and proper hand washing are both crucial to keep all of us healthy.
  - *We can't just wing it*
    - Poo has lots of pathogens in it, which can only be destroyed by careful composting (federal guidelines require the compost to stay at 130 degrees F for three days).
    - If you just put your poo wherever you like, it can very quickly contaminate the soil and water table. This can spread diseases, particularly those in the "diarrheal" group, like dysentery, cholera, and other bad stuff. We need to stay healthy!
  - *Survive and thrive*
    - After a disaster, it could be a long time before help can come from outside the affected area. It could be an even longer time, measured in years, before underground infrastructure like sewers can be restored after a major disruption. In Christ Church, New Zealand, when a major earthquake hit in February 2011, a third of the sewers were rendered useless, and are still offline. Residents are using porta-potties now.
    - Because of this time concern, we need to make sure that we have a strategy in place to ensure that we don't contaminate our soil and water. If we want to build a truly resilient community, one that can rebuild and grow back even stronger after

a disaster, we need to ensure that we don't make a huge mess of our community before we can rebuild.

- **The Twin Bucket Emergency Toilet for Pee and Poo**
    - *Introduction* ***(Show whole kit)***
        - The buckets nest inside each other with all your supplies and hygiene kit available inside the buckets A toilet seat and lid are then strapped on top.
        - Here are the buckets - notice the PEE and POO labels!
    - *Personal Hygiene Kit* ***(Show kit)***
        - The kid nests inside the buckets: toilet paper, gloves, soap, waterless hand cleaner, carbon source to layer over poo to keep down the smell and bugs, and a hand washing system.
        - A great idea for keeping your toilet paper dry and easy to handle is to take out the inner cardboard and squish the roll into a quart size zip lock bag. Pull the toilet paper from the inside of the roll while it stays inside the plastic bag.
    - *Buckets*
        - You can purchase 5 gallon buckets new from most paint stores, hardware stores, DIY stores such as Lowe's and Home Depot, OR you can find buckets for free at your local deli, restaurant, bakery or other food industry business.
        - Emergency Essentials and Tote-able offer bucket toilets with snap-on seat and cover for $15.
    - *Lids* ***(Show lids)***
        - US Plastic "saver" or "gamma" lids (which screws on and off) are reuseable options. Standard plastic lids are often hard to pry off and hard to replace. Local sources include Costco, Winco, Bob's Red Mill though you can also get them online.
    - *Seats* ***(Show seat)***
        - Recommended for comfort. While you can duct tape your bathroom toilet seat onto a bucket, it is best to have a seat which you can easily move from bucket to bucket.
        - You can either retrofit a standard round toilet seat onto a 5 gallon bucket or purchase a plastic toilet seat. Plastic toilet seats can be purchased separately from The Portland Preparedness Center, QuakeKare, Emergency Essentials, and local camping stores such as Andy & Bax, REI, as well as on-line.
    - *What amounts to expect?* ***(Show containers of "pee" and "poo")***
        - Pee can average 1 to 2 quarts per person per day.
        - Poo can average 4-10 oz per person per day.
- **How to Use the Bucket**
    - *Separate the pee and the poo.*
        - You can have some pee in the poo but no poo in the pee. ***(Put some "poo" into a clear container. Pour a little "pee" in the "poo.")*** Why is that?
            - *Pee is relatively sterile* by itself and the largest percentage of our waste elimination, so it is wise to keep it separate and uncontaminated if at all possible. Use of a urinal makes it easy to separate the pee. If desired, women can use a funnel like device such as GoGirl, Whiz Freedom, make their own funnel using a plastic bottle to keep urine separate. Be creative.
            - *Poo on the other hand has many pathogens.* Because of this, you should not bury it in the ground but compost it over a year or two to destroy these pathogens so it is safe and useable as garden soil. For detailed

information, check out this booklet "A Sewer Catastrophe Companion" which talks about dry toilets for wet disasters.

- *Treating the pee.*
  - For the pee you need to have a lid for your bucket to keep down the smell. Pee is sterile unless a person has serious health issues. Dispose of pee by diluting 10:1 and pouring it on the ground or garden. If you don't dilute, it will burn the vegetation due to the high nitrogen content. The general rule of thumb is to spread one person's dilute pee for one day over land the size of their shadow -- i.e. the size of their snow angel. Make sure there is no poo in the pee!
- *Treating the poo*.
  - Cover the poo completely with a carbon material after each use of the poo bucket to reduce odors while it dries. If you keep the toilet seat cover down between use but allow a little air between the seat and bucket, it will help dry the poo. If it is covered with a carbon material there will be no smell or problem with flies. Empty full buckets and store in a large container such as a garbage bin to start the compost process, which may take one to two years after the last addition. One way to check if your compost has reached high enough temperature and is safe to use is to scatter tomato seeds in the compost. If the tomato seeds sprout, it needs more compost time and temperature. Do not bury poo or it will contaminate the ground water and soil causing serious health problems. ***(Sprinkle carbon material onto the "poo" in the container.)***
  - Carbon materials could be coconut coir, sawdust, shredded newspaper, coffee hulls, wood pellets or wood shavings.
    - Coconut Coir is compacted into bricks for storage but swell to 8 or 9 quarts after you add 1-1/4 quarts of water. You can get coconut coir and wood pellets at local nurseries and garden supplies and DIY stores such as Home Depot and Lowe's as well as on-line.
    - Wood pellets also expand when you add a small amount of water and basically revert back to sawdust.
- *What you can't put in it*
  - Remember, no poo in the pee but you can have pee in the poo.
  - Toilet paper can go in the poo but not the pee.
  - Diapers, menstrual pads, handy wipes, and tampons should not be mixed with the poo but belong in the garbage.
- *Privacy*
  - If you don't have the option of privacy in a room, you can provide privacy by hanging a tarp or blankets around the sides of the makeshift loo.

- **Handwashing!**
  - *Keeping your hands clean is really important to prevent the spread of disease.* Your options include gloves, hand sanitizer, and water-and-soap.
    - The CDC recommends water and soap as the best way to clean your hands.
    - Use an alcohol-based hand sanitizer with at least 60% alcohol content. Alcohol-based hand sanitizers alone are not effective if hands are visibly dirty. After you apply the hand cleaner to your clean hands, it is important to allow the hands to air dry.
    - Gloves are good in a pinch, but not a great long-term solution. They generate a lot of trash, for one thing, and you have to be very careful to use them correctly and remove them correctly WITHOUT getting your hands dirty. (***Show how to***

remove gloves by grabbing the palm of one glove with the other hand and then peeling the remaining glove over the first glove so that it is inside).

- *You can make simple hand-washing systems to go with your emergency sanitation kit.*
  - Both systems include 2 buckets, one with clean water on top and a gray water bucket below. Directions can be found at our table.
    - Tap Up - the top bucket has a hole drilled in the bottom, with a plug that is loosened by pushing up on the bolt on the bottom, releasing a stream of water. ***(Demonstrate.)***
    - A second system (which may be familiar to those with Girl or Boy Scouting experience) is to attach one end of a rope to the edge of the clean water bucket and the other end to a brick or rock on the ground. To use this hand wash system, simply step on the rope to tip the bucket slightly so that you can wash your hands in the water stream. ***(Demonstrate.)***

- **Conclusion**
  - We hope that we were able to give you a good grasp of WHY we need emergency sanitation and HOW you can prepare.
  - Thank you for your time!
  - Questions?

Materials needed for this presentation

- Emergency Sanitation Kit (SEUL)
- Tap-up handwashing system
- Scout handwashing system
- 2 quarts of "pee" in a container
- 1 pint of "poo" in a container
- clear container large enough to contain some poo, some carbon material, and some poo
- examples of different kinds of carbon material, with a little extra for demonstration
- Twin Bucket handouts
- handwashing items: foamer, soap, hand sanitizer, gloves