

# Disaster, Pandemic Sanitation Response

Preparation in an uncertain world

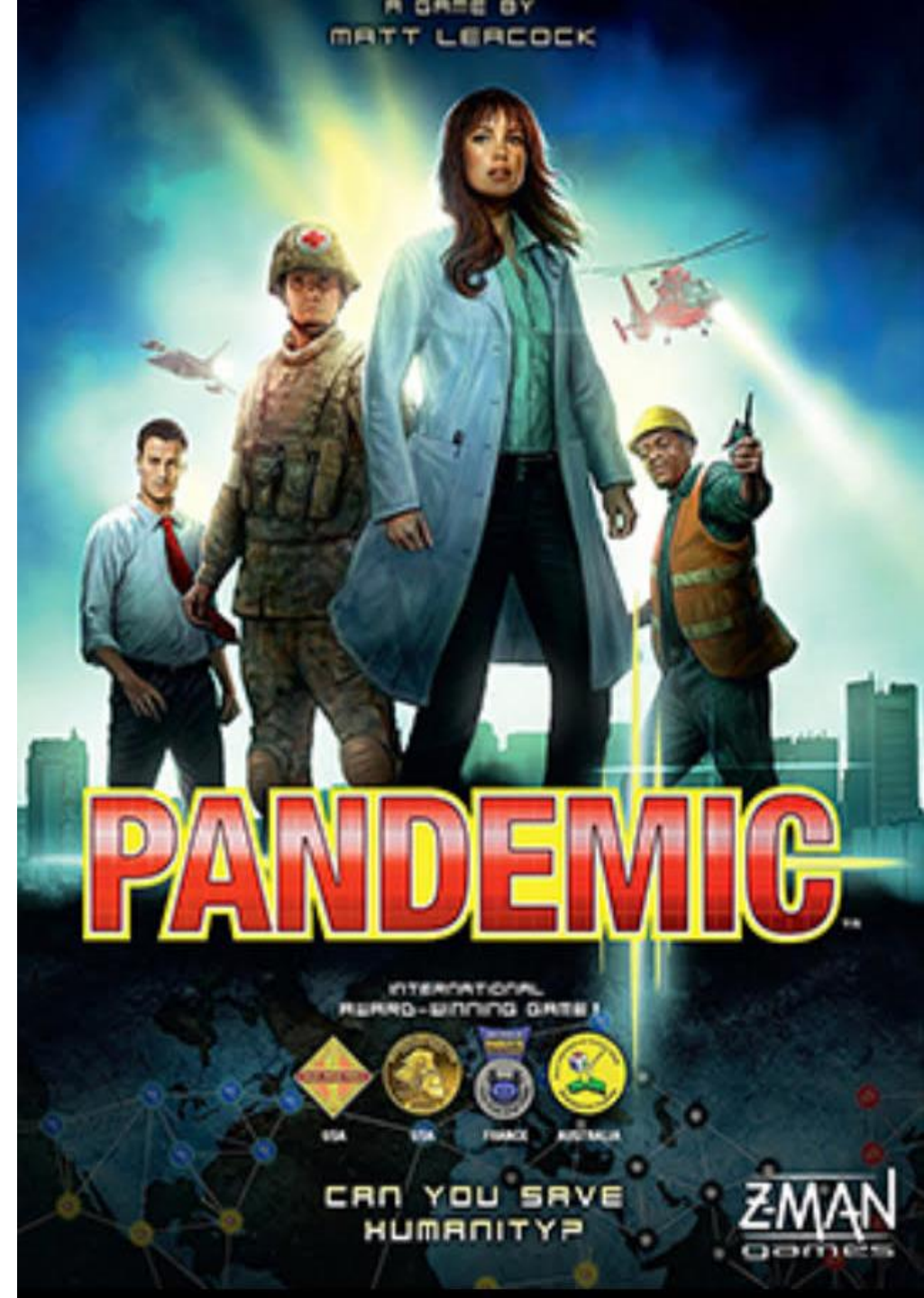
[Approaching ready website](#)

Neil Rawlins

# Pandemic

## Not new. Did we learn anything?

- Board game came out in 2008
- My kids ordered this game as I was preparing for the 2009 Swine flu pandemic
- Are we better prepared now?
  - Government? Will they get it right next time?
  - Personal preparedness
    - What can we do different?
  - Community/church preparedness
    - How can we prepare better as a church
    - How about Community preparedness



# Pandemic panic Utah

- Pandemic widespread Feb 2020
  - Run on TP, Emptied shelves and warehouses in several waves
- Earthquake March 18,2020
  - Run on freezers
  - Production on freezers was cut in half Jan 2020
  - Nationwide shortage of home freezers
- High winds with power outage
  - Power out for 2 weeks in some places
  - Food spoiled due to local shortage of portable generators

# Pandemic Preparedness

What are our personal lessons learned?

## Flu, Pandemic, Body Fluids

- Pandemic Bin
- Quarantine room
  - Drop cloth, duct tape, chemical suit, hair and shoe covers
  - Eye protection - goggles
  - Mask – N95
- Disinfectants/Antibacterial: bleach, Cavicide, wipes, tissues
- Bouffant cap - disposable
- Emesis bags, lg zip-lock bag,
- Bags: Biohazard, lg & sm trash, etc
- Soap, hand sanitizer
- Portable toilet, commode, bucket
- Gloves – vinyl & long utility
- Diapers – baby, adult, cloth/disposable
- Spray bottle for liquid bleach
- Bucket, scoop,
- Pop up privacy tent / enclosure
- Critter control: pets, fly paper, mouse traps, bug spray
- Plastic bags
- 5-gallon buckets with lids
- Kitty litter absorbent
- Laundry
- Rehydration liquids
- Medications, herbals, teas,

## Pandemic & Flu Preparation

### Before a Pandemic

- Two weeks food & water
- Rx-meds: build up or have continuous supply
- OTC-meds
  - pain meds, stomach remedies, cough/cold meds, vitamins
- Rehydration fluids / mixes
- Have copy of health records, medication list, etc.
- Discuss with family how they would be cared for if they got sick, or what will be needed to care for them in your home.

### During a Pandemic

- Avoid close contact with sick people
- When you are sick, keep your distance from others
- Cover mouth/nose; use mask
- Wash hands frequently; use sanitizing cleaner
- Avoid touching eyes, nose, mouth
- Good health habits
  - sleep, activity, stress management, nutrition, etc.
- Hydration & rehydration fluids & mixes
  - Gatoraide,
- Clean up, dispose of, and manage body fluids carefully
- Consider quarantine if needed

# Disaster challenges That we could face

## Local

- Power outages (EMP, Solar eruption, Nuclear)
- Local earthquake
- Loss of community resources, Political disruption (police, fire, sewer, water)
- Volcanic ash fallout (Solar doesn't work)

## Widespread, overwhelming

- Cascadia Fault prediction. (9.0)
  - Tricities may get 1/5 (20%) of the Portland area. Possibly more
  - Tricities population goes from 300K to 3.3 Million people overnight
  - All of our resources are overwhelmed even if our systems otherwise are working
  - Each family may be asked to take care of 50-100 people

# Water. Local Preparedness

- 3 days supply in emergency kits
  - 2 week supply would be great. Give time to work it out plan
- City system may be down or overwhelmed
  - May function for a couple hours a day (WaterBob)
- Individual wells Require electricity, (Generator, Solar,
  - Manual Pump [www.flojak.com](http://www.flojak.com) designed for 3<sup>rd</sup> world)
- Gravity Filter like Berkey, Alexapure for drinkable water
- Where will you get water? River, pond, rain barrels
  - [Where did the pioneers get their Drinking water](#)
- How will you transport water? Cart, bicycle,
- Purification,
  - [Water Presentation Slides](#)



# Water: Widespread preparedness

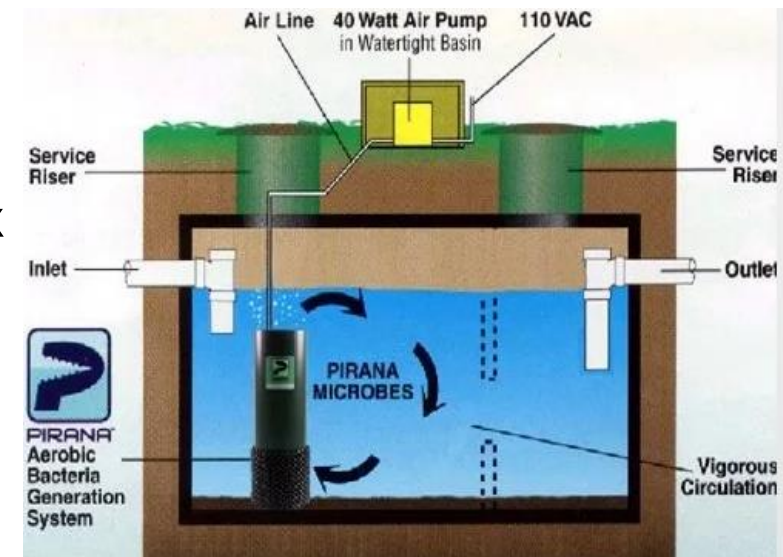
Worldwide a child dies every 2 minutes from poor water quality

- Local water system if functional will be quickly overwhelmed
- Where would you get water? In what container?
  - WaterBOB, 55gal drum, 5 gal container
- How will you distribute water?
- Rain water collection Do you have barrels? (restrictions in many states)
- Water Sterilization, Filtration
  - Bangladesh Cholera problem
    - Diabetes skyrocketed
  - Gravity water filter
    - Berkey (filters not available)
    - Alexapure



# Emergency Sewer: Local Sanitation and Hygiene

- Sewer system down
  - Requires electricity, Water for flushing
  - Dual bucket system PEE and POO buckets
  - Toilet paper and alternatives [23 toilet paper alternatives](#)
  - Waste disposal for your buckets and other waste
- Septic system
  - Many have electric pump from septic to Distribution box
    - How to drain if electricity fails
  - Need pumping every 5 years normally with 10 people
  - Pirana Septic system
    - Converts anerobic system to aerobic system
    - <https://pirana.biz/>





# Toilets

- Protect your toilet if water supply off
  - 4" rubber ball and long sock
  - Coat ball/sock with vaseline and plug toilet
- Bag in toilet
- Commode
- Buckets – pee and poo (labeled)
- Kitty Litter, saw dust
  - absorbent & odor control
- Dispose of properly



# Twin Bucket Emergency Toilet



- Plastic 5-gallon bucket
- Lids
- Plastic seat
- Plastic trash bags
- Absorbent carbon material to cover poo
  - Sawdust, shredded paper, coir fiber, kitty litter, etc.

From Sanitation and Hygiene slides

# Emergency Sewer: Widespread

- Sewer
  - Quickly is overwhelmed
  - Twin Bucket system: Waste disposal a problem
  - Toilet liners. Blocking the toilet
- Septic system
  - Usually need pumping every 5 years for normal use
  - When use is 10-20x higher system becomes overwhelmed
  - Pirana system will help
  - Toilet paper and alternatives [23 toilet paper alternatives](#)

# Personal Hygiene

There is a reason the church makes hygiene kits

- Oral hygiene: extra tooth brushes, tooth paste
- Feminine Hygiene Many times forgotten
- Hand Hygiene, Wash station
- Foot care
- Pest control
  
- Widespread disaster
  - Not all 3 million will bring their toothbrushes
  - Soap, Sanitizer all in short supply
  - Wash stations needed everywhere

# Hand/Body Cleanliness

## Hand / Body Cleanliness

- Bar soap
- Liquid hand soap
- Shampoo / Conditioner
- Bodywash liquid
- Hand sanitizer



Bar soap with nylon

Making soap

Sanitizer will be difficult to find

Hand wash stations to minimize water use

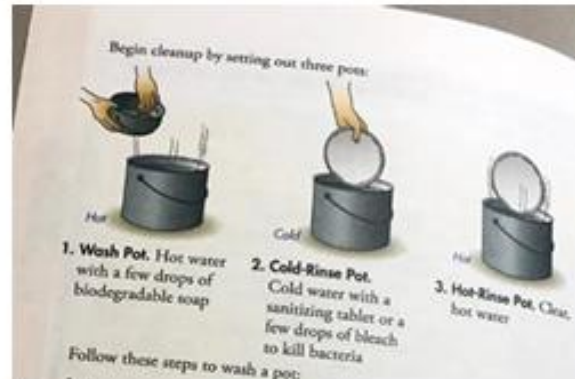
# Nutrition in a disaster

- Cooking without power
  - Solar Oven [SUNOVEN.com](http://SUNOVEN.com)
  - Volcano stove, Dutch ovens with 500 lbs charcoal
- Cooking with food storage?
  - Beans and rice do not have required vitamins
  - Who can cook with food storage
- Utensils, Plates, Mesh bags
- Growing food, Sprouts to supplement vitamins
  - Dr James Lind and the British Navy. Lemons and Watercress sprouts
  - Trial in 1741. Adopted in 1791
- Widespread disaster
  - How and what do you feed 100 people at your house?



# Dishwashing

- ✓ Three tubs / pots
  - ✓ Dish soap
  - ✓ Brush/scrubber
  - ✓ Hot tongs
  - ✓ Bleach
  - ✓ Towel, mesh bag, etc.
- 
- Pot 1: Wash w/ hot water & dish soap
  - Pot 2: Cold-rinse w/ bleach or steramine sanitizing tablet
  - Pot 3: Hot-rinse w/ clear hot water
  - Airdry



1. Scrape dishes before washing
2. Wash the least soiled first
3. Camping soap preferred
4. Clean tubs by throwing out the soap tub first

# Medications in a disaster

- Any disruption of shipping will make medications hard to get
- 30 day supply is recommend by FEMA
  - Insurance wont let you get it
  - Can pick up prescriptions 3 days early in some cases. 10 months gets 30d
  - Pay cash and get it from the pharmacy directly
  - Ask for renewal when you change insurances
- 6-12 month supply Work with independent pharmacy or
  - [JASE Medical](#) [Contingency Medical](#)
  - [The Wellness Company](#) [Duration Health](#)

# Medication Problems

- Potassium Iodide. Need to take immediately with Nuclear disaster
- Pharmacy Supplies will run short with large influx of people
- Antibiotic alternatives
  - Colloidal Silver
  - O3 Ozone water generator
  - Topical antibiotics
  - Herbal wound treatments
  - Stay healthy, Vit D, VitC, Zinc, Multivitamins
  - Infrared Sauna, Hyperbaric
  - Herbal antibiotics (Garlic, Honey, Ginger, Echinacea, Goldenseal, Clove, Oregano)
  - [Natural antibiotics](#)



# Health first aid, Long term aid

- Medical resources will be in scarce supply
- First aid kit and Trauma bag
- Herbal Medicine Start learning now. Have hard copies
  - [Doom and Bloom Medical](#)
- Often forgotten areas. Compounded with large scale disaster
  - Baby needs, washable diapers
  - Female needs. Many preppers are men and forget this
  - Elderly needs. Walkers, Wheelchairs, Canes
  - Disability needs
- Often overlook supplies
  - Pets, combs, contraceptives, Electrolyte drinks, Wound wash, Games
  - [25 overlooked prepper supplies](#)



# Laundry for a disaster

## Laundry

- Clothesline, rope, rack
- Buckets, tubs, bathtub
- Wringer, mop bucket



Soap May need to make your own

Wonderwash portable washing

Lavario Portable clothes washer

Scrubba wash bag

Ceiling mounted drying rack

Other clotheslines or drying rack

# Preparation for Elderly, Disabled and Kids

- Elderly and Disability Preparation
  - Medications,
  - Mobility Wheelchair, cane, Walker
  - First Aid
  - Hearing, Vision problems
- 24 Survival Skills every parent need to teach their child
  - [24 survival skills to teach kids](#)
  - Shelter, Fire, Water, First aid, Map and compass, Swimming, Self defense, growing food, Foraging, Wildlife encounters, Cooking, Hygiene

# Vehicle Preparedness

- Water
  - First Aid/Trauma
  - Knife
  - Candle and matches
  - Jumper cables
  - Map and Compass
  - Multitool
  - Duct tape
  - [Vehicle emergency preparedness](#)
- Pee bag (toilet supplies)
  - Personal Hygiene kit
  - Shovel
  - Solar Charger
  - Rope/Paracord
  - Food Coast Guard meals
  - Flashlight
  - Cash

# Off Grid Skills to learn

We cant learn them all. We need a community

- |                   |                 |                   |
|-------------------|-----------------|-------------------|
| • Gardening       | Raising Animals | Butchering        |
| • Seed harvesting | Foraging        | Hunting           |
| • Canning         | Smoking meat    | Drying/FreezeDry  |
| • Welding         | Knitting        | Knot Tying        |
| • Soap making     | Candle making   | Shoemaking/repair |
| • Vehicle repair  | Sewing          | Basketweaving     |

# Security Skills

- Concentric Circles
- Surveillance
- Neighbor Alliance
- Visual deterrence
  - (walk with confidence)
- Trail Cameras
- Scary Dogs
- Lighting
- Door hardening
  - 3 inch screws
- Window film
- Plastic to cover windows
- Weapons, Get Training!!!
- Pepper spray, Stun gun
- BYRNA nonlethal pepper balls
- Club, bat
- Bump Retreat
- Safe Room Need escape route
- Communication (HAM radio, GRMS)

# Summary

<https://approachingready.com>

- Pandemic Preparedness
- Clean water is Key
- Sanitation
- Medication
- Laundry
- Prepare for disabled,
  - Large groups
  - Babies
- Vehicle Preparedness
- [Master Preparation List](#)
- Improve skills
- Network We cant do it alone
- Security
- Food production
- Food storage
- Eating with food storage
- Alternative cooking
- [Prepping on a Budget](#)
- Tips to share

# Questions?





If you are prepared you shall  
not fear DC 38:30

Thank you for coming

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