



# Pandemic Plan for the Church

## *Ministering to the Community in a Time of Crisis*

---

### **Disposal of Solid Waste**

Any waste material that may contain body fluids is considered biohazard waste. Improper disposal of this type of waste can encourage the spread of the disease. Examples of diseases that are spread through fecal matter and contaminated water are cholera, typhoid, and E coli. Examples of diseases spread through blood are HIV, Hepatitis B, and Hepatitis C. Contact with infectious waste can result in transmission of a disease; therefore, any exposure to such waste should be handled appropriately with the handler wearing appropriate personal protection equipment (PPE).

The proper disposal of infectious waste should be determined by the health department. During normal conditions, hazardous biological waste is packaged in red bio-hazard bags, stored properly and picked up for disposal by a contractor specifically trained in handling these by products. If the pandemic conditions prohibit this means of disposal, the health department may deem it necessary to burn all contaminated waste. This section will include the proper procedures for burning or burying contaminated waste. However, before this type of disposal is carried out, it must first be approved by your local health department.

### **Standard Precautions for Disposal of Solid Waste**

Health officials recommend that standard precautions should be observed and wearing PPE for the disposal of solid waste. Solid waste consists of medical and non-medical waste that might be contaminated with a pandemic influenza virus. Proper ways of disposing waste include the following:

- Discard used patient care supplies that are not likely to be contaminated (e.g., paper wrappers) as routine waste.
- Items that may be contaminated such as facial tissues, gloves, patient masks, bloody items, should be disposed of properly. Separate bags designated for hazardous waste should be placed in each patient area and labeled appropriately. Usually, these bags are red with a biohazard symbol printed on them.
- PPE should be worn when handling these bags.
- The red bags should be tied up in the room of the patient then placed in another clean bag before leaving the room.
- Contaminated medical waste should be disposed of in accordance with facility procedures and/or local or state regulations for handling and disposal of medical waste.
- Used needles and other sharp implements should be disposed of in containers specifically made to handle these instruments. These instruments are usually called “sharps” as a means of alerting other workers to the risk of a puncturing hazard. The

containers are made of a heavy plastic material with tops that close in a manner that makes the contents inaccessible once discarded. These containers are considered biohazardous and should be disposed of properly. The hospital, healthcare facility, and local health department should assist with the set-up of disposal of medical waste.

- Caregivers should wear disposable gloves when handling waste and should practice hand hygiene after removal of gloves.

## **Separating Medical Waste from Normal Waste**

Proper disposal of medical waste, marking it as a biohazard, and separating it from the public is vital in the control of disease.

Medical waste includes:

- Used gloves contaminated with blood or other body fluids
- Dressings, bandages, and gauze
- Soiled items such as gowns or linens that are not to be cleaned with bleach and hot water for re-use
- Any item that has been exposed to bodily fluids and is not going to be cleaned through the process of using bleach and hot water
- Used cloths for disinfectants
- Used laboratory supplies
- Used patient care items such as urinary catheters and Foley bags

Discard these waste products in plastic bags, tie off the bags, and mark them as biohazard waste. Bags designated for biohazard waste are red marked with the universal biohazard sign of three circles in a triangle. Purchasing red bags marked with a biohazard symbol will be helpful in distinguishing this trash. Keeping red bag biohazard waste bags readily available in treatment areas will enable the workers to easily comply with proper disposal. When full, place these bags in a designated separate area and arrange for this biohazard trash to be disposed of properly by calling a company that specializes in biohazard waste. Do not discard these bags in the regular trash that is picked up by your local sanitation crew.



Biohazard Symbol  
Tuulijumala/Shutterstock.com<sup>1</sup>

During the planning stage, your local health department or hospital with whom you are partnering should arrange for their biohazard waste contractors to include your location in their rounds of pickups. However, if a pandemic with similar affects to society as the 1918 Influenza were to occur, normal biohazard waste management may not be available. It may be necessary to dispose of medical waste on site by burning.

## **Disposal of Contaminated Materials in a Disaster**

These methods of disposal are not recommended unless pandemic circumstances prohibit the normal means of waste disposal. If the societal infrastructure were to collapse due to a large percentage of the population becoming sick at the same time, such methods may be considered by public health officials. However, due to the increase of exposure as well as working with fire, proper precautions and extreme care should be exercised. When working with your local health department during the planning stages, these methods should be discussed as part of your planning process. Please remember, the disposal practices described in these sections should only be performed if the disaster or pandemic conditions warrant such drastic measures. Always contact your local health department or hospital to ensure proper methods for disposal.

## **Disposal of Contaminated Liquid Waste**

Contaminated liquid waste from patients includes feces, urine and vomit. These can normally be disposed of by flushing it in a toilet. However, if the disposal for such contaminated waste is unavailable or prohibited, proper burial is necessary to minimize the spread of disease. Depending on the pathogen that is causing the disaster, some human waste can pollute water sources; cholera is an example of this.

If waste is not buried or burned, flies and other insects will be attracted and then multiply. Rats and other vermin may also be drawn to the waste. These pests can carry and spread the disease simply by landing and walking on food and other surfaces.

Attempting to disinfect liquid waste such as urine with bleach is prohibited. Please note that urine contains ammonia and when mixed with bleach can cause a toxic gas. Furthermore, chlorine must not be disposed into a septic tank.

## **Burial of Waste**

It has been determined that some microorganisms can survive up to a year after burial, so choose the location carefully. Remember this type of disposal should be considered as only a last resort. When choosing a burial site, the burial site must be at least 250 feet away and downhill from places such as:

- Close proximity to treatment areas
- Streams, rivers, lakes, wells, or other water sources.
- Avoid any areas where water flows. Even if the area is dry at the time of burial, rain fall will easily carry improperly disposed waste into ground water and water supplies.

The hole should be three to five feet deep – or if possible, even more, depending on the amount of waste being disposed. Before digging, contact your local utility company to locate any underground utility lines. When burying medical waste, factor these into your planning:

- The area should be planned and designated during the planning stages and approved by your local public health officials.
- Access must be restricted and controlled; only trained staff should be allowed entry to the area
  - Consider fencing or other means to restrict access
- The water table must be at least six feet below the bottom of the hole
- It is not suitable for sandy areas
- The dumping of chemicals is to be strictly prohibited
- Consider lining the hole with low permeability material such as clay to prevent polluting of ground water
- Spread coatings of lime over each layer

Cover the hole with a lid of some type, fashion a piece of wood, or layers of tarps. The cover should be snug enough to:

- Prevent insects and vermin from having access
- Prevent rainfall from entering
- Prevent people or animals from falling in

When the hole is filled:

- It should be covered in with dirt or cement
- It should be marked appropriately
- It should be fenced in to limit access

## **Burning of Waste**

Burning is the recommended method for disposal of other contaminated waste in a disaster. When selecting a site for burning the waste; it should be away from traffic flow so as not to draw a crowd. This area should be roped off with a sign stated, “Authorized Personnel Only.” Again, this practice is strictly prohibited unless it is a last resort. Please consult with your health department while planning your alternative care facility. In addition, contact your local fire department for assistance in choosing a location, as well as acquiring a burn permit if necessary. The fire department will be a great resource for this type of disposal.

## **Using an Incinerator**

Consider using an incinerator for the burning of waste. Incinerators are a type of furnace that allows waste to burn at a high enough temperature to destroy hazardous materials. Burning

in a barrel should be considered a temporary solution until a better solution is found. Great care must be taken due to toxic fumes and danger to those performing the burn.

Incinerators are containers with holes for ventilation to allow air to enter and exit the container. This allows the fire to reach temperatures high enough to completely destroy all biological materials. Use flammable fuel (such as diesel fuel) to speed up the burning process and keep the temperatures high. Incineration is recommended for disposal of all medical waste not buried in a latrine. Again, these disposal methods are to be considered only as a last resort. Please consult with your local health department during your planning stages to ensure compliance with your local regulations.

The sorting of waste should take place at the site of disposal, such as in the treatment areas. However, before incineration is performed, sorting of waste should again take place to ensure only proper materials are burned. Incineration is recommended for disposal of:

- Used treatment materials and dressings
- Non-reusable protective clothing
- Laboratory supplies and specimens
- Do not burn plastics, batteries, aerosol cans, broken thermometers, or other items that should not be placed in fires
- Do not burn chemicals such as chlorine

Simple incinerators are easy to make; some are available on the market. When constructing a homemade incinerator follow these instructions:

1. Choose a good heavy metal barrel such as a fifty-five-gallon drum
2. Use a jigsaw or other instrument that can cut metal
3. Remove the top in one piece with a special cutter, and set aside (the top will become the bottom of the incinerator)
4. Use a hammer to smooth sharp edges around the rim
5. Use a metal cutter such as a jigsaw to cut holes a few inches close to the rim along the top of the newly cut barrel. These should be at least two inches in diameter. Cut several of these holes without affecting the structural integrity of the barrel. These will ensure air will be drawn in and circulate from the bottom and raise the temperature of the fire. If preferred, place a heavy screen of at least fourteen gauge with ¼ inch holes to cover the cut out holes.
6. Below these holes, punch holes just large enough to push steel rods or pipes through the barrel. Push these rods through the holes on the other side to allow them cross in the center to form an X on the inside of the barrel.
7. Turn the barrel upside down so that the open end is on the ground.

Pandemic Plan for the Church – *Ministering to the Community in a Time of Crisis*

8. To make a trap door for the top, cut away half of the bottom; which is now the top, of the barrel. Attach wire loops to the half that is cut away to the half that remains. Use a hammer to smooth sharp edges. This creates a lid that can be lifted and closed.
9. Attach another wire loop that will act as a handle to raise the cut away half to put waste material through.
10. Take the lid that was cut away earlier and punch holes in it to allow air to come in from the bottom of the barrel. This will ensure temperatures will remain high enough to burn the material.
11. Place the lid with holes on the rods that form an X in the barrel. These rods will support the burning material and keep it from settling on the bottom, thus allowing the air to circulate under the refuse.
12. Be sure surrounding area is free from items that can catch fire and allow fire to escape. An area covered in dirt and not grass is preferable. Keep it a safe distance from structures such as a house, trees, or shrubs.



Sample Incinerator

Spkphotostock/Shutterstock.com<sup>ii</sup>

The following procedures should be strictly practiced when operating an incinerator:

- Set up incinerator far from inhabited areas
- Start fire with fuel oil on paper or wood

- Allow an appropriate start up time to allow temperature to become sufficiently high enough before placing refuse in fire about thirty minutes
- Wear proper PPE such as heavy-duty gloves, body protection, goggles, and a respirator
- Do not over feed fire, place small amounts of waste at about five-to-ten-minute intervals. This will allow the waste to be completely consumed.
- Allow fire to burn at least two hours
- Mix drier waste with wet items
- Remove ash regularly, wear PPE (gloves, goggles, and respirator)
- Schedule regular maintenance to ensure equipment is in good condition. Replace any parts that show deterioration due to high heat levels.

### **Burning in a Pit**

If an incinerator is not available, then burn waste in a pit:

- The pit should be at least six feet deep
- Use fuel to accelerate the burning and ensure that all waste is completely destroyed
- If waste material is left over after the fire has gone out, repeat the process until all material is burned
- When all waste is burned, and fire has gone out, cover the ashes with soil
- Never leave unburned waste in the incinerator or burn pit
- When pit is full, cover it with soil that nothing is visible with about 1 ½ feet of soil
- Dig a new pit and repeat

Use a pit to dispose of:

- Disinfected body fluids such as urine, feces, and vomit when no designated latrine is available.
- Used disinfectants. If it is not possible to dispose of used disinfectants in a latrine, burn the used disinfectant together with flammable items (disposable gowns or masks, for example). Burning with the flammable items will help keep the temperature of the fire hot enough to boil off the liquids.

Ensure all those who handle infectious material know how to use PPE. Reinforce with all involved the importance of handling infectious waste safely.

### **Training Staff to Perform Waste Disposal**

The cleaning staff that will perform the tasks of disposal should understand the purpose of safe disposal, know how to wear PPE, and know clearly how to carry out waste disposal safely. Inadequate training and lack of understanding for the handling of hazardous waste can lead to the spread of disease and causing unnecessary heartache for all involved. Training staff in

proper disposal of waste should be a priority when planning an alternative care facility. After the cleaning staff is selected training should be done to ensure knowledge of:

- The risks of diseases transmission
- Knowledge of the particular pathogen causing the pandemic
- The proper use of PPE
- Safety precautions for working with fire

When working under an Incident Command System, the Safety Officer is to ensure strict compliance for safety measures. The team leader should be given authority in order to:

- Oversee all the disposal procedures, including preparation of the incinerator and pit.
- Train and supervise the staff that will perform waste disposal.
- Make a schedule for the collection and burning of disposable waste.
- Supervise the collection and burning to make sure it is carried out safely.
- Ensure a water source and fire extinguishers are available for dousing the fire if necessary.
- Stop all procedures if he/she deems the burning process is being performed unsafely.

---

<sup>i</sup> Tuulijumala,<http://www.shutterstock.com/pic-51674197.html>

<sup>ii</sup> Spkphotostock/<http://www.shutterstock.com/pic-270080933.html>