

Public Health Guidance Documents for Evacuation Shelters

Dallas County
Health and Human Services
Dallas, Texas

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Public Health Guidance Documents for Evacuation Shelters

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Environmental Health Shelter Recommendations
Dallas County Health Department
Environmental Health Division
Dallas, Texas

General Housing/Emergency Mass Shelters

Spacing Recommendations

1. Toilets – 1 toilet for every 20 evacuees
2. Showers – 1 shower for every 20 evacuees
3. Handwashing/lavatory fixture – 1 handwashing/lavatory fixture for every 20 evacuees (hand sanitizers should not be considered a replacement for lavatories with flowing potable water but can be used to supplement the numbers).
4. Cot/beds – Provide **a minimum floor space of 30 sq. ft./person**, spaced 3 feet apart, alternating head-to-toe
5. Ventilation – 40-50 cubic feet of air space/person

Hazardous Waste

6. Provide biohazard bags at the designated medical areas and ensure that an approved medical waste handling company does transportation and disposal.
7. Provide approved sharps containers at designated areas and ensure that an approved medical waste handling company does transportation and disposal.

Food and Food Equipment Safety

8. Food storage, preparation, handling and distribution should follow the local environmental health food safety guidelines.
9. Provide at least one dishwashing machine for washing baby bottles, nipples, and pacifiers.
10. Provide an adequate number of refrigerators dedicated for the storage of baby formulas, and opened baby foods for the evacuee residents. Equip refrigerators with thermometers and keep temperatures at or below 41 degrees Fahrenheit.

Cleaning and Routine Waste Collection

11. Ensure that the floors are cleaned (mopped) at least once per day.
12. Ensure that trash receptacles are emptied at least once per day.

Insect and Rodent Control

13. Restrict food from sleeping areas of the shelter.
14. Brief all staff and residents on the importance of immediate reporting of insect or rodent activities; sightings, droppings, or damaged foods.
15. An integrated pest management plan should be developed and implemented by a pest control specialist.
16. Screen all openings with at least 16 mesh screen materials to prevent insect access and close any crawl spaces with wire mesh to prevent rodent harborages.

Soiled Linen and Clothing

17. Provide linen hampers for soiled towels and other clothing or linens.
18. Provide evacuee residents and shelter staff with information on soiled and clean linen handling procedures, for example through posters located in the shower rooms or other strategic locations.

Childcare Facilities

19. Provide guidance via posters near all diaper changing station with sanitary changing procedures.
20. Provide sanitary wipes, easily cleanable diaper changing stations, and foot-operated lidded waste containers that are not accessible to children at diaper changing stations.
21. Provide sanitary wipes, disposable diaper changing pads, sanitizing solution and proper hand-washing facilities for each diaper changing station.
22. All lotions, creams, ointments and other solutions applied to children's skin should be dispensed from single use containers or containers designated for use on an individual child.
23. All electrical outlets should be protected by protective caps or similar approved devices.
24. Heimlich maneuver posters should be provided in child care areas.

Toilet and Shower Facilities

25. Provide soap dispensers with soap, paper towel dispensers with paper towels, and waste receptacles at handwashing facilities.
26. Provide handwashing signs in appropriate languages at hand-washing stations.
27. Provide water tight, slip resistant floors in the toilet rooms and showers.

General Safety

28. Facilities should be built and maintained in accordance with local fire regulations.
29. Maintain appropriate fire exits in compliance with local fire regulations.

Comprehensive Plan for Prevention of and Reponse to Gastrointestinal Diseases Outbreaks for Evacuation Shelters Dallas County Health Department Environmental Health Division Dallas, Texas

People crowded together in places such as in evacuation centers are vulnerable to outbreaks of gastrointestinal disease with symptoms that include vomiting and diarrhea. These illnesses can be caused by bacteria, parasites and, more commonly, viruses, for example, noroviruses (Norwalk-like viruses). Diagnosis of illness through collection and testing of specimens should always be undertaken to confirm the cause of an outbreak.

Viral gastrointestinal disease outbreaks may involve transmission of the disease via contact with contaminated fomites, and not only through ingestion of contaminated food and water, as in the case of bacterial and parasitic gastrointestinal disease. Because, they tend to pose the worse case scenario with regard to ease of transmission, all prevention and mitigation criteria for gastrointestinal diseases should be developed with viral outbreaks in mind.

Facts about Spread of Gastrointestinal Diseases

People can become infected with germs that cause gastrointestinal disease by:

- Eating food or drinking liquids contaminated with gastrointestinal disease germs
- Touching surfaces or objects contaminated with the gastrointestinal disease causing germs and then touching their own mouth, nose, or eyes.
- Sharing personal items such as towels and toothbrushes
- Having contact with an infected person, for example, by:
 - Being present while someone is vomiting
 - Sharing food or eating from the same utensils
 - Caring for a ill person
 - Shaking hands with a person who did not wash hands after using the bathroom or changing a diaper
- Not washing hands after changing diapers or after cleaning up areas contaminated with diarrhea or vomit

Infection Control Prevention Measures For Evacuation Center Staff And Residents

General Hygiene

- Wash hands thoroughly and frequently with soap and water, or use alcohol hand gels when soap and clean water are not readily available.
- Maintain a clean living environment.
- Maintain good personal hygiene including the following:
 - Follow good hygienic practices during food preparation.
 - Do not share eating utensils or drinking containers.
 - Do not share personal toilet articles such as toothbrushes or towels with anyone else.
- Facilities should be adequate to allow residents to bathe at least twice weekly.
- Laundry facilities should be available to allow appropriate laundering of clothes and bed linens.

Response Measures for Ill Evacuee Residents

Provide residents with a fact sheet about gastrointestinal disease.

Emergency medical technicians should ask ill persons about the type and frequency of symptoms (including whether they have fever or bloody diarrhea) to determine if medical care is necessary.

Physicians and emergency medical technicians should ask ill persons whether members of their family or friends are also suffering from gastrointestinal disease symptoms, and follow-up accordingly.

Medical personnel (physicians and emergency medical technicians) should maintain a log of all cases of gastrointestinal illness to include: name, birthdate, names of other affected family members, date seen, symptoms, and whether vomiting is present. A sample log sheet is provided as Appendix A.

Medical personnel should instruct ill persons on hand cleaning and disinfection techniques and how the disease is spread.

Separate ill persons (those who have three or more loose or liquid stools per day, or vomiting which is diagnosed as a gastrointestinal illness by a medical professional) from other residents until 24 hours after symptoms end. Optimally, this would be in a separate area distant from other residents in a separate room.

Limit access to the isolation room and separated sections occupied by ill persons.

Ill children should be accompanied by only one responsible adult. The same adult should stay with the child until 24 hours after symptoms end.

Designated areas should have full time staff supervision to ensure the area is properly cleaned, disinfected, and adequately supplied.

Designate toilets “FOR USE BY ILL PERSONS ONLY”. These toilets should be easily accessible to ill persons.

The isolation facility should be equipped with easily cleanable floors and fixtures.

Provide ill persons with plastic bags (e.g., small bathroom trash can liners) to contain vomit.

Food service should be provided to ill persons in a separate area from individuals that are not ill.

A specialized cleaning crew with appropriate cleaning and disinfection equipment, solutions, and color-coded garbage bags should be ready to respond quickly to clean up vomit and stool in any area of the facility.

NOTE: When any evacuation center staff become ill with gastrointestinal disease, they should be sent home, and remain off duty until 24 hours after gastrointestinal disease symptoms end.

Cleaning and Disinfection Methods

Cleaning and Disinfecting Areas Soiled with Vomit or Stool

Clean-up vomit and stool quickly as they may be highly contagious. Vomit or stool must be cleaned up before the contaminated area is disinfected, to insure the disinfectant will work.

- Wear disposable gloves during cleaning. If you expect that liquid may splash, wear a disposable mask and cover gown or apron.
- Do not use vacuum cleaners to clean up vomit or stool.
- Wipe up the material with paper towels and dispose of used towels in a color-coded plastic garbage bag. The area should be cleaned with a detergent or detergent-disinfectant, rinsed with water and disinfected as described below.
- **Disinfect hard surfaces areas** using diluted household bleach (5 tablespoons of 6% household bleach to 1 gallon of water).
- Wet surfaces with the diluted bleach and allow the area to remain wet for 10 minutes, if possible.
- **For carpeted areas**, use absorbent materials such as kitty litter to absorb liquid, and dispose of in a color-coded plastic garbage bag.
- **For carpeted areas and other areas that may be damaged by the use of chlorine bleach disinfection solutions** products such as **Virkon S, Miikro-Bak III, EcoTru, Virox NP9.0 Detergent Disinfectant, or others registered with the EPA** that have label claims for either norovirus or its surrogate feline calicivirus may be used per labeled instructions
- Allow to air dry as instructed below.

Disinfecting Common Hand-Contact Surfaces (Hard Surfaces)

Hard surfaces that are frequently touched, such as door knobs and hand rails, and faucet handles should be disinfected routinely throughout the day (at least every 3-4 hours).

- Wash hands thoroughly
- Put on gloves.
- Use diluted household bleach (5 tablespoons of 6% household bleach to 1 gallon of water/1 part bleach to 50 parts water).
- Wet surfaces with the diluted bleach allow the area to remain wet for 10 minutes, if possible.
- Allow to air dry.
- Remove gloves and discard in plastic bag.
- Wash hands with soap and water or use alcohol hand gel immediately after removing gloves.

Cleaning and Disinfecting Public Restrooms

- Clean restrooms frequently; restrooms used by ill people should be cleaned hourly.
- Clean all fixtures with cleaning solution to remove visible soil.
- Wipe surfaces with a disinfectant such as diluted household bleach (5 tablespoons of 6% household bleach to 1 gallon of water).
- Wipe down all doorknobs, toilet seats, flush mechanisms, faucet handles, etc. with the sanitizing solution at least 4 times daily.
- Allow surfaces to remain wet for 10 minutes, if possible.
- Allow to air dry.
- Remove gloves and discard in plastic bag.
- Wash hands with soap and water or use alcohol hand gel immediately after removing gloves.

Measures to Keep Restrooms Clean and Prevent the Spread of Disease

- Keep restrooms supplied with toilet paper, paper towels and hand soap.
- Post signs in appropriate languages to remind people to wash hands after using the toilet.
- If feasible, provide hands free exit from the toilet room,
 - By propping the doors open
 - Or, by providing paper towels (with appropriately placed waste bin) for use to open door.

** When diluting the disinfectants, wear eye protection to prevent splashes into the eyes.*

*** Chlorine solution is the disinfectant of choice. Household bleach without thickeners, scents, or additives should be used. Chlorine solutions can be made weekly, if in a bottle that no light passes through; otherwise, they should be made daily. Bottles should be labeled with the date and concentration of the solutions.*

*There are now products (e.g., **Virkon S, NP9.0 Detergent Disinfectant, etc.**) registered with the EPA that have label claims for either norovirus or its surrogate feline calicivirus; these products should be used per labeled instructions. Some commercially available disinfectants (e.g., **VirkonS, Miikro-Bak III, EcoTru, and Virox**) have been used successfully in the past following outbreaks on cruise ships. See www.cdc.gov/nceh/vsp/default.htm for more information on the Vessel Sanitation Program. (The use of trade names and commercial sources is for information purposes only and does not constitute endorsement by CDC, the U.S. Public Health Service or the Department of Health and Human Services).*

Handling Clothing and Linen Contaminated with Fecal Matter, Vomitus, Blood or Other Body Fluids

- Garments heavily soiled with stool should be handled carefully by wearing gloves, and **disposed of in a color-coded plastic bag designated for contaminated waste.**
- If stool can easily be removed using toilet paper, the garment may be laundered as described below. Lightly soiled clothing (stained by no solids attached) may be washed as described below.
- Wash clothing in a washing machine, preferably with hot water (temperature =165°F).
- Use household detergents for washing clothing.
- Household bleach can be used in the rinse water.
- Dry clothes in a hot dryer (temperature = 171°F).
- There is no need to disinfect the tubs of washers or tumblers of dryers if cycles are run until they are completed.
- Hands should be washed with soap and water or cleaned with alcohol hand gel after handling soiled linens.

Handling of Medical Waste

- Contact local authorities to determine local requirements for disposal of medical waste (items soiled with vomit and stool, or other body fluids).
- Use trash receptacles lined with plastic bags accepted by local trash pick up that can be securely tied.
- Do not overfill bags.
- Place trash in an area separated from the living spaces, preferably in trash bins.
- Separate medical waste from non-medical waste for pick-up; follow local guidelines for pick-up of medical waste.
- Have waste pick-ups scheduled frequently, daily if possible.
- Hands should be washed with soap and water or cleaned with alcohol hand gel after handling all waste.

Prevention Procedures for Childcare Facilities

- Do not admit ill children into the childcare areas. Advise parents of children with diarrhea or vomiting to immediately seek care from on-site medical personnel. If a child begins to vomit or have diarrhea while being cared for, immediately separate the child from the other children in the childcare facility until parents can take the child to seek medical attention.
- If diarrhea or vomiting accidents occur in the childcare area, childcare staff should isolate the contaminated area until the specialized cleaning staff can clean and disinfect according to appropriate methods.

- Where diaper changing is necessary, for example in the nursery, childcare staff should dispose of all diapers in foot operated lidded containers that are inaccessible to children in the area.
- Childcare staff should wash their hands thoroughly after changing diapers, toileting children, and after any activities where hands may become soiled.
- Childcare staff should thoroughly wash their hands prior to dispensing food or drink to children.
- All shared children's toys should be properly cleaned and sanitized with 100 parts per million chlorine (approximately 1 tablespoon liquid bleach to 1 gallon of water).
- Waste containers and waste material should be inaccessible to children in all childcare areas.
- Toilet accommodations should be provided for children no longer in diapers but too small to use adult facilities. For example, steps to toilets and properly sized toilet seats.
- Portable toilets, example childrens' potty chairs, should be emptied, cleaned and sanitized after each use.
- Childcare staff should ensure that children properly wash their hands after using the toilet, blowing their nose, sneezing, or otherwise contaminating their hands, and before eating.

**Comprehensive Plan for Prevention of and Response to
Respiratory Illness Outbreaks at Evacuation Shelters
Dallas County Health Department
Environmental Health Division
Dallas, Texas**

General Facts about Spread of Respiratory Diseases

People crowded together into places such as evacuation centers are vulnerable to outbreaks of respiratory illness. Respiratory illnesses like influenza spread very rapidly in these settings.

Many of the germs that cause respiratory diseases spread in respiratory droplets caused by coughing and sneezing. These germs usually spread from person to person when they are in close contact with one another, or by touching something with respiratory germs on it and then touching their mouth or nose.

Some respiratory illnesses, such as influenza, can be prevented with a vaccine. Medical staff and local health officials should determine whether vaccination is appropriate in a particular evacuation center.

Asthma and chronic obstructive pulmonary disease (COPD) are chronic illnesses that can cause coughing, wheezing, and shortness of breath. Although the disease are noninfectious, persons with asthma or COPD can suffer exacerbations as a result of infectious respiratory diseases. They are also at risk of exacerbations due to increased exposure to environmental asthma triggers and lack of their routine medications.

***Early Detection of Respiratory Diseases Among
Evacuation Center Residents and Workers Staff***

Screen for respiratory illness among residents and staff upon initial admission/registration to evacuation center. **Ask every resident and staff member about the presence of the following symptoms** of respiratory illness:

- Cough
- Sneezing
- Sore throat
- Fever
- Wheezing
- Shortness of breath
- Night sweats
- Runny nose
- Weight loss

Identify persons with respiratory illness and implement appropriate infection control measures as soon as possible. Based on medical staff's opinion certain ill persons should be referred for medical evaluation in order to ensure appropriate diagnosis and treatment. Early diagnosis can be an important part of prevention.

Ask persons with respiratory symptoms if they have asthma or COPD (or emphysema).

Any person meeting one of the following criteria should be referred for medical evaluation:

- Any person with respiratory symptoms that are accompanied by fever, wheezing, or shortness of breath;
- Any person with a chronic cough (a cough that persists for weeks or months) that is accompanied by either fever, night sweats, or weight loss; and
- Any person with respiratory symptoms who also has asthma or COPD.
- If residents do not have symptoms of respiratory illness upon initial evacuation center admission/registration, tell them to report any new respiratory symptoms to staff when they first occur.

Post visual alerts both at the entrance to and in residential areas of evacuation centers instructing residents and staff to report symptoms of a respiratory infection, and to practice respiratory hygiene/cough etiquette as described below.

Infection Control Measures to Prevent the Spread of Respiratory Diseases

General measures for all evacuation center staff and residents

- **Establish hand sanitizing stations at all entrances of shelters** and require all persons entering the shelters to sanitize hands.
- **Wash hands regularly**, especially important after touching surfaces or objects that might be contaminated with respiratory droplets, shaking hands, or after touching persons who are ill with respiratory symptoms. ***Alcohol hand gels are an adequate substitute when soap and clean water are not readily available.***
- **Maintain a clean living environment.** If frequently touched surfaces are contaminated with respiratory secretions:
 - Wipe up visible material with paper towels and dispose of used towels in a plastic garbage bag
 - Disinfect using (5 tablespoons of 6% household bleach to 1 gallon of water).
- **Maintain good personal hygiene techniques** including the following:
 - Do not share eating utensils or drinking containers

- Do not share other personal articles such as toothbrushes or towels with any one else
- **Separate sleeping cots by 3 feet and arrange head to toe sleeping (not head to head)** to reduce the potential for spread of droplets between evacuation center residents.

Measures for persons with symptoms of respiratory illness

- **Provide symptomatic residents with information on preventing spread of illness** by practicing Respiratory Hygiene/Cough Etiquette, which includes the following measures to contain respiratory secretions:
 - Cover the nose/mouth when coughing or sneezing;
 - Use tissues to contain respiratory secretions and dispose of the tissues in the nearest waste receptacle after use;
 - Perform hand hygiene (e.g., hand washing with soap and water, or alcohol hand gel) after having contact with respiratory secretions and contaminated objects/materials.
- **Ensure the availability of materials for adhering to Respiratory Hygiene/Cough Etiquette for residents and:**
 - Provide tissues and a receptacle for used tissue disposal (e.g. paper or plastic bag).
 - Provide personal dispenser of alcohol hand gel; where sinks are available, ensure that supplies for hand washing (i.e., soap, disposable towels) are consistently available.
- **Separate sick persons and close contacts such as family groups from other residents until 24 hours after the symptoms have resolved.** If possible, put them in a separate room or, alternatively, place sick people in a separate section of the evacuation center away from other residents who are not sick . If this is not possible, encourage persons with respiratory illness to stay at least 3 feet away from those not providing direct care and support.
- **Persons who are not ill should avoid close contact with the sick persons** (e.g., kissing, hugging, hand shaking, other direct touching, talking within 3 feet), except as necessary for care and support.

Evacuation center staff who become symptomatic should be excused from work, and remain away from work until 24 hours after symptoms end.

DALLAS COUNTY HEALTH AND HUMAN SERVICES DEPARTMENT
 2377 N. STEMMONS FREEWAY, DALLAS, TEXAS 75207
 ENVIRONMENTAL HEALTH DIVISION
 EVACUATION SHELTER ASSESSMENT FORM
 Phone (214) 819-2115 Fax (214)819-2868

Shelter Name: _____ Address: _____
 Manager Name: _____ Organization: _____ Phone: _____
 Assessment Purpose: Routine ___ Follow-up ___ Complaint ___ Other (describe) _____
 Assessor's Name: _____ Assessor's Organization: _____
 Assessment Date: _____ Time of Assessment: _____

Assessment Items	Y	N	NA	Comments
Space and available facilities				
1. Cots/beds spaced 3 feet apart (head-to-toe) 30sq.ft./person				
2. Ventilation adequate, (temperature < 85 F)				
Hazardous Waste				
3. Bio-Hazard bags provided for med waste				
4. Sharps containers provided at med facilities				
Food Safety				
5. Storage, prep, handling, distribution meets local regs.				
6. Hand-washing/Hand-Sanitizing facilities available in all food prep and services areas				
7. Refrigerator temperatures maintained <41F				
8. Cross-contamination between clean and soiled items in storage prep, or service areas or raw and cooked foods				
9. Hot foods kept hot >= 140 F, Cold foods kept cold <41F				
Cleaning and Waste Collection/Storage/Disposal				
10. Cleaning staff provided with proper cleaning equip				
11. Cleaning staff provided with cleaning and disinfection methods for infection control, e.g., (5 Tbls bleach to 1 gallon water for disinfecting contaminated hard surfaces)				
12. Floors mopped/cleaned daily				
13. Trash receptacles emptied daily				
14. Waste stored and disposed of in sanitary manner				
Insect and Rodent Control				
15. Integrated pest management plan implemented				
16. Outside openings screened or otherwise protected				
Potable Water				
17. Supply safe/adequate (15 liters per person per day)				
18. Municipal water available and adequate				
19. Private well available and adequate				
20. Halogen level measurement				
21. Bottled water provided (adequate)				
Sewage Disposal				
22. Public sewage disposal available and adequate				
23. Private sewage disposal available and adequate				
General Health and Safety				
24. Hand-washing or sanitizing stations for residents at entrances to shelters, food lines, and childcare facilities				
25. Facilities built/maintained to local fire and safety regs.				
26. Maintain appropriate unobstructed fire exits for egress				

Inspection Items	Y	N	NA	Comments
Soiled Linen and Clothing				
27. Hampers provided for soiled linen/towels				
28. Evacuees informed of soiled linen and clothing handling procedures per orientation or posters				
29. Linens, clothing, contaminated with feces, vomitus, blood or other body fluids separated and treated or disposed of according to G.I. Prevention & Control Plan				
Childcare Facilities				
30. Diaper changing procedures provided via poster at each diaper changing station				
31. Sanitary wipes, easily cleanable diaper changing table, and foot operated lidded waste containers available at diaper changing stations/trash containers not accessible to children				
32. Lotions, creams, ointments and other solutions applied to children's skin dispensed from single use containers or from containers individualized for each child				
33. All electric outlets protected, e.g., protective caps				
34. Heimlich maneuver posters in childcare area				
35. Dishwasher or three compartment sanitizing available for baby bottles, nipples, pacifiers				
36. Refrigerators with thermometers available for baby formula and opened baby foods				
Toilet and Shower Facilities				
37. Toilet/shower/ hand-washing sink provided				
38. 1 Toilet/shower/hand-washing sink per 20 evacuees				
39. Dispensed liquid soap and paper towels, and waste receptacles available in toilets				
40. Hand-washing signs posted in appropriate languages				
41. Easily-cleanable, slip resistant floors in toilets and showers				
G.I./Respiratory Infection Control				
42. Isolation area provided for G.I. and Respiratory patients easily-cleanable/separate toilets/ hand-washing				
43. Patients ill with G.I. or Respiratory separated until 24 hours after symptoms end				
44. Ill patients (G.I. or Respiratory) provided with guidance fact sheets				
45. G.I./Respiratory log kept by medical staff onsite				
46. Ill evacuation site workers taken off duty until 24 hours after G.I. or respiratory symptoms end				

Number of Evacuees overnight: _____ Cases of Diarrhea _____ Cases of Respiratory Illness _____

Notes:

CRITICAL ITEMS ARE SHADED IN BOLD AND REQUIRE IMMEDIATE ATTENTION

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