

# Health Recommendations for Relief Workers

## FactSheet

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The year 2005 will be remembered for its many natural disasters, most notably the tragedy caused by hurricanes Katrina, Rita and Wilma that struck the coastal areas of the states of Alabama, Florida, Louisiana, Mississippi, and Texas causing numerous deaths, massive infrastructure damage, and flooding. Relief workers who respond to disasters can include utility workers, law enforcement personnel, firefighters, emergency medical personnel, military personnel, and volunteers. These relief workers are at increased risk for illnesses and injuries and should be aware of numerous potential hazards, such as downed power lines, contaminated drinking water, and poisonous snakes. This fact sheet provides specific advice for disaster relief workers.

When responding to disasters, relief workers should prepare with the knowledge that there may be shortages of electricity, safe drinking water, and food in the affected areas. They should pack to be as self-sufficient as possible and bring only those items necessary for their assignment.

### Toiletries

- alcohol-based hand sanitizer;
- toilet paper;
- sunblock (SPF 15 or higher);
- insect repellent containing DEET or Picaridin;
- feminine hygiene products;
- extra pair of prescription eyeglasses and a copy of the prescription;
- eyeglass repair kit and protective case for eyeglasses;
- contact lenses and lens cleaner;
- toothbrush/toothpaste;
- skin moisturizer;
- soap and shampoo;
- supply of medications along with the prescriptions;
- lip balm;
- razor with extra blades\*;
- scissors\*;
- nail clippers/tweezers\*;
- and Q-tips/cotton swabs.

### Clothing

- comfortable, light-weight clothing;
- long pants;
- long-sleeved shirts;
- hat;
- boots;
- shower shoes;
- rain gear;
- bandana/handkerchief;
- towel (highly absorbent, travel towels if possible); and
- gloves (leather gloves for physical labor and rubber gloves for handling blood or body fluids).



### Security

- money belt;
- cash;
- cell phone (with battery charger);
- candles, matches, and lighter in a ziplock bag;
- ziplock bags; and
- an item of comfort (i.e., family photo, spiritual or religious material).

### Miscellaneous Items

- sunglasses;
- safety goggles;
- waterproof watch;
- flashlight;
- alarm clock;
- spare batteries; and
- multi-purpose knife, such as a Swiss Army Knife or Leatherman\*.

\*Due to Federal Aviation Agency (FAA) regulations, these items should be packed in checked baggage when traveling on a commercial airliner. If the items are packed in carry-on baggage they may be confiscated.

## Risks and Health Recommendations

Relief workers should ideally be assessed by a health-care professional at least 4-6 weeks before travel, but usually there is not much advance warning before natural disasters or other catastrophic events. Yet, if time permits, the recommended vaccines should be completed so they can provide maximum benefit:

- Tetanus/diphtheria (Td) Tetanus and diphtheria toxoid (receipt of primary series, and Td booster within 10 years)
- Hepatitis B vaccine series for persons who will be performing direct patient care or otherwise expect to have contact with bodily fluids.

Vaccinations should be brought up-to-date for all relief workers with a history of incomplete or lapsed routine childhood immunization schedules.

## Risks from Injury

The risk for injury during and after a disaster is high. Relief workers should take preventive measures to ensure safety during recovery and cleanup efforts.

- Inspect the worksite before entering. Evaluate building structures, roadways, surfaces, trenches and excavations for damage, stability and safety.
- Know the plan for contacting emergency personnel in the event of an emergency.
- Report hazards such as downed power lines, frayed electric wires, gas leaks, or snakes to the appropriate authorities.
- Take frequent rest breaks, especially when lifting heavy, water-laden objects.
- Practice good lifting techniques to avoid overexertion and back injuries.
- Carry first-aid kits to care for minor cuts and abrasions.
- Beware of overhead and underground lines, especially when moving ladders or equipment near them.
- Keep fire extinguishers on-site and re-evaluate the fire evacuation plan for use during clean up.
- Know any special hazards that may be encountered in areas where debris is being collected and deposited.
- Be aware of posted warning signs along roadways to warn drivers of work in progress. Respect flaggers, traffic cones, and highway channeling devices used to steer traffic away from workers along the roadway.

- Know the site plan for collection of debris – know traffic flow details and stay clear of all motorized equipment.
- Never position yourself between mechanical equipment, blind spots, and a fixed object.
- Wear high-visibility reflective vests to be easily spotted by equipment operators, emergency vehicles, vehicular drivers, and others.
- Use personal protective equipment, including hard hats, safety glasses, work boots and gloves.
- Use “back up” alarms on motorized equipment, so nearby workers are aware of movements.
- Use radio equipment to communicate warnings between spotters and equipment operators.
- Use seatbelts and rollover protection for all equipment where hazards of tip-over are present.
- Do not enter debris piles while the debris is being worked by mechanical equipment.
- Recognize, report, and avoid hazardous chemicals discovered during debris clean up.
- Keep equipment more than 10 feet away from overhead power lines.
- Assume all wires and power lines are energized!
- If injured, seek medical treatment immediately.

## Risk from Electrocution

Relief workers should be careful to avoid downed power lines. They also need to be aware of backfeed or feedback during power outages, which can occur when a portable generator which is improperly sized, installed, or operated, sends power back through the electrical lines. Backfeed can seriously injure or kill relief workers or anyone else near the location.

In addition, following a disaster, electrical power and natural gas or propane tanks should be shut off to avoid fire, electrocution, or explosions. Use battery-powered flashlights and lanterns, rather than candles, gas lanterns, or torches. Generators and other fuel driven equipment must be well ventilated to prevent carbon dioxide poisoning.

## Risks from Food and Water

Disasters can contribute to the spread of many serious food and water-borne diseases, especially since water supplies and sewage systems are usually disrupted. Relief workers should clean their hands often, using soap and water (or waterless alcohol-based hand sanitizers when soap is not available and hands are not visibly soiled), to remove potentially infectious mate-

rial from their skin and to help prevent disease transmission.

If a trusted source of bottled water is not available, water should be boiled or disinfected with chemicals. The symptoms of waterborne illness include abdominal discomfort or cramping, fever, vomiting, and diarrhea, which only last a few days and can be self-treated with nonprescription medications.

Foodborne diseases are caused by bacteria, viruses, and parasites that can spread through food or beverages. There are more than 250 known foodborne diseases with Botulism, Campylobacteriosis, E. coli (E. coli) infection, Salmonellosis and Shigellosis being the most common.

If relief workers experience acute diarrhea, fluoroquinolone (e.g., ciprofloxacin) and azithromycin can be taken. These medications should be taken until symptoms subside (typically 3 days). Anti-motility agents, such as loperamide and diphenoxylate and/or bismuth subsalicylate (Pepto-Bismol), can reduce bowel movement frequency.

Relief workers should see a doctor if they cannot eat or drink; become dizzy; have a high fever with diarrhea for more than two days; or have a bloody diarrhea. To prevent dehydration, it is very important that relief workers replace fluids lost from diarrhea and vomiting by drinking clean water. If oral rehydration solutions (or electrolyte replacement fluids such as Gatorade) are available, they are ideal for the treatment of dehydration.

## Risks from Insect Bites

Flooding can cause standing water in affected areas, therefore, mosquito breeding can be a problem. Most mosquitoes, while a nuisance, are not likely to transmit disease. While the potential exists for outbreaks of West Nile fever, St. Louis encephalitis, and dengue, these types of outbreaks are not typical for disasters in the U.S.. To prevent mosquito bites, relief workers should use insect repellent containing DEET or Picaridin and wear long-sleeved shirts and long pants when outdoors.

## Risks from Animal Bites

Disasters can displace animals out of their natural habitats and homes making them dangerous to relief workers. Relief workers need to beware of snakes, dogs, bats, skunks and other animals.

Displaced reptiles, such as snakes, are likely to be found after flooding and other natural disasters. Snakes tend to be active at night and in warm weather. As a precaution relief workers should wear boots and long pants when walking outdoors at night in areas possibly inhabited by venomous snakes. Proper protection, protective clothing, attention to surroundings, and lack of contact are the best ways to avoid injury.

The venom of a small or immature snake can be even more concentrated than that of larger ones, therefore all snakes should be left alone. Relief workers should seek medical attention immediately any time a snake bite breaks the skin. If emergency care is delayed, a loose-fitting pressure bandage that does not restrict arterial and venous flow (but does limit lymphatic flow) is recommended while the victim is transported to a medical facility or medical personnel responds. Tourniquets that impair blood flow to the affected limb are generally not recommended.

In addition, exposure to animal bites, most notably bats or skunks in the south-central U.S., pose a potential risk for rabies and other infections. A relief worker who sustains a bite should seek immediate medical attention for appropriate management of the wound and post-exposure prophylaxis.

## Other Health Risks

Leptospirosis, a bacterial disease, may occur in individuals who wade, swim, or bathe in waters contaminated by urine of animals affected by the disease. The symptoms include high fever, severe headache, chills, muscle aches and vomiting. Because these symptoms are similar to those of other illnesses, it is important to seek medical attention immediately. Leptospirosis can cause kidney damage, meningitis, liver failure and respiratory distress if not treated.

During natural disasters, technological malfunctions may release hazardous materials (e.g., toxic chemicals that are displaced by winds or rapidly moving water), which can also lead to air pollution resulting in lung infections. Disasters resulting in massive structural collapse can cause the release of chemical or biological contaminants (e.g., asbestos or arthrospores, leading to fungal infections). Persons with chronic pulmonary disease may be more susceptible to adverse effects from these exposures.

Other health risks are related to exposure to the sun and extremely hot temperatures: heatstroke, eye damage, skin cancer, and sunburn. For protection

from UVA and UVB rays, relief workers should wear eye protection, sunscreen and lip screen. Wraparound sunglasses that provide 100 percent UV ray protection should be worn for eye protection. A Broad-Spectrum sunscreen and lip screen with at least SPF 15 should be used. More importantly, relief workers should become familiar with the signs of heat-related illness and what to do in case of emergency.

## **Psychological/Emotional Risks**

Those who provide assistance should also pay attention to their own mental health needs before, during, and after their assignment or time in the field. Moreover, because relief workers' services are desperately needed, it is essential that workers remain healthy during their assignment. Because of the tremendous loss of life, serious injuries, missing and separated families, and destruction, relief workers should recognize that the situation they encounter may be extremely stressful. Keeping an item of comfort, such as a family photo, favorite music, or religious material nearby can often offer comfort in such situations. Checking in with family members and close friends from time to time is another means of support.

On return from an affected area, relief workers who are unwell or who have become injured should undergo a medical evaluation. This should include psychological support and counseling as necessary. Returning relief workers should seek health care in the event of fever, rash, respiratory illness, or any other unusual symptoms.

The Texas Department of Insurance, Division of Workers' Compensation has the following publications to assist relief workers in preventing injuries and illness <http://www.tdi.state.tx.us/wc/safety/employers.html> under "Free Safety and Health Publications: Online Safety and Health Library."

- Fluid Replacement Fact Sheet
- Hand Hygiene Fact Sheet
- Hurricane/Tornado Recovery Efforts & Clean-up Hazards Fact Sheet
- Insect Bites and Stings Fact Sheet
- Preventing Waterborne Illnesses Fact Sheet
- Foodborne Diseases Fact Sheet
- Reducing Impact of Stress Fact Sheet
- First Aid Kits Take 5
- Flash Flood Alert Take 5
- Safe Lifting Technique Take 5
- Heat Stress Safety Training Program

This fact sheet was developed with information from the National Center for Infectious Diseases, Center for Disease Control and Prevention, Division of Global Migration and Quarantine and the Texas Department of Insurance, Division of Workers' Compensation and is considered factual at time of development.