



Disaster Recovery Health & Safety Update

Post hurricane cleanup is critical and necessary, but it is important to keep in mind that massive flooding has resulted in waters contaminated with chemicals, bacteria, and sewage wastes. With debris and sewage in the flood water, bacterial infections and stomach bugs may be widespread. Common symptoms of coming in contact with contaminated flood water can include: stomach-ache, diarrhea, fever, and/or vomiting. Should you or someone you know have any of these symptoms, then seek further medical care.

The CDC advises that individuals wear rubber boots and gloves when they are cleaning up and coming in contact with the flood water, to minimize the amount of human contact with the contaminated water. The Food and Drug Administration also recommends that any food that comes in contact with flood waters should be thrown away. The most common forms of human contact occur through consumption of contaminated or undercooked food or open wound contact with the water. Severe infection of existing wounds can occur, especially in the elderly and immune compromised. Symptoms can include:

- Quick illness onset, usually within 1 to 3 days, with rapid decline in health
- Pain, redness, and increased swelling around the contaminated wound site
- Swelling of the skin of the arms or legs and the presence of blood-tinged blisters
- Fever
- Low blood pressure or shock

If you or someone you know has any of these symptoms, then seek medical care immediately.

Relief workers are encouraged to avoid contact and oral ingestion of the water as much as possible. For those in contact with the contaminated waters, there are some precautions that must be taken:

- Make sure your vaccinations are up-to-date
- Wash your hands frequently with soap and water especially before eating and drinking
- Wash regularly with disinfectant soap or an alcohol-based cleaner
- Have any open wounds or infections evaluated immediately
- Do not smoke. Smoking increases the absorption of lead into the body, thus increasing the chance of illness.
- If you are unsure of your symptoms, then seek advice from medical personnel.

There are other precautions or inherent dangers, other than the water, that must be taken:

Communication and Accountability of (command and control) of Deployed Personnel

- Contingency briefings are important for “what ifs”.
- Knowing their locations and rallying points is important too.
- Remember to supply personnel assigned to active and effected locations with adequate amounts of drinking water, food, clothing, hygiene items, items for decontamination and disinfection, and other necessities (radios and flash lights).

Human Remains (Dead Bodies)

Relief efforts may include handling human remains. Take the following precautions:

- Protect yourself from bodily fluid splashes and fecal material. Use eye protection or face shields, gloves, surgical masks, and cover any exposed areas of your body.
- Wash your hands regularly

Electrocutions

- It is often work is necessary near power lines.
- Always consider electrical lines as energized until deactivated and tested with appropriate device. Many fatalities have occurred due to inappropriate testing, inappropriate grounding, or the lines were powered by a secondary source, usually a portable generator.

Carbon Monoxide

- Gasoline or diesel powered generators, pumps, or pressure washers may be used during clean-up. A by-product of their use is carbon monoxide, which is colorless and odorless, but potentially deadly.
- These devices should be used in a well ventilated area and not indoors.
- Many fatalities have occurred from carbon monoxide poisoning when these devices are used indoors or in confined spaces.

Musculoskeletal Injuries

- Manual lifting of debris will be required during cleanup.
- This can lead to a number of potential muscle injuries, especially to the back.
- Proper lifting consists of bending at the hips and knees and not the back itself.
- As a precaution, use a helper to lift objects greater than 50 pounds.

Heat Stress

- The weather may be hot and humid given the location.
- Dehydration can rapidly occur resulting in heat exhaustion or even heat stroke.
- Set a pace for the clean-up and do not physically over-exert yourself.
- Drink water every 20 to 30 minutes and take regular breaks in a cool and shady area.
- If symptoms of nausea or vomiting, confusion, headache, dizziness, or even muscle cramps should occur, then seek medical assistance.

Cold Stresses

- Standing or working in water which is cooler than 75 degrees F (24 degrees C) will remove body heat more rapidly than it can be replaced, resulting in hypothermia.
- To reduce the risk of hypothermia, wear high rubber boots, ensure that clothing and boots have adequate insulation, avoid working alone.
- Despite the warm weather, elderly patients and patients with special needs are vulnerable to hypothermia.
 - Follow local protocols for managing patients for hypothermia.

Structural Instability

- The flood water will likely affect the stability of buildings to various degrees.
- Those structures that have been submerged or around rushing waters will likely be the least stable of all buildings.
- Prior to entry of any building, make sure its stability been evaluated.

- Leave immediately if there are any unusual noises or shifting of the structure.

Hazardous Materials

- Flood waters can dislodge tanks, drums, pipes, and equipment, which may contain hazardous materials such as pesticides or propane.
- Do not attempt to move or handle unidentified dislodged containers.
- If you encounter such containers, notify Command of the potential hazard and secure the area until a hazardous material team can take control of the site.
- If working in potentially contaminated areas, avoid skin contact or inhalation of vapors by wearing appropriate protective clothing and respirators.
- Frequently and thoroughly wash skin areas that may have been exposed to pesticides and other hazardous chemicals.

Fire

- Fire can pose a major threat to an already badly damaged flood area for several reasons:
 - Inoperative fire protection systems,
 - Hampered fire department response,
 - Inoperable firefighting water supplies, and
 - Flood-damaged fire protection systems.
- Because resources are spread thin, firefighters should be prepared to ensure life safety and potentially perform defensive operations to contain fire spread.

Confined Spaces

- The combination of contaminated waters, decomposing human remains, and confined spaces can lead to a hazardous situation.
- Toxic gases, vapors, and the lack of oxygen can be deadly. Explosive conditions can result from these agents, but what you cannot smell is also dangerous.
- As noted earlier, carbon monoxide is odorless and colorless and when in a confined space it can be overwhelming to people.
- **Never** enter a confined space unless you have been properly trained and have the right equipment.

Psychological

- For Encounter Patients:
 - Responders should be prepared to assist and manage victims with mental health illness.
 - It is likely that due to a lack of resources and or a loss of property that victims of natural disaster who have mental illness may not have their medications.
 - Responders should do their best to connect these patients with facilities that can provide appropriate care and assistance.
- For Responders Themselves:
 - The long work days, hot & humid conditions, and the stench from sewage or decomposing bodies is not only physically exhausting, but mentally as well.
 - Psychological and emotional support is also very important during these times.
 - Seek support from your colleagues, friends, family, counselors, or any mental health professional as needed.
 - The IAFF has established peer counseling groups that are operating in effected areas.
 - All Responders should continually monitor themselves and others for signs of stress and fatigue.

Displaced Wild Life, Pets and Farm Animals

- Natural Disasters force the displacement of wild and domestic animals.
- Stress, unfamiliar surroundings and strangers can change the temperament of normally friendly pets.
- Responders should avoid trying to feed or handle stray animals.

First Aid

- First aid is extremely important when exposure to waters potentially contaminated with human, animal, or toxic wastes exists.
- Clean out all open wounds and cuts with soap and clean water.
- Most cuts, sustained during flood cleanup activities will warrant treatment to prevent tetanus. Follow up with a doctor.

Protective Equipment

- For some work in flooded areas, you will need the following personal protective equipment: helmets, goggles, heavy work gloves, and watertight boots with steel toe and insole (not just steel shank).
- Excessive noise from equipment such as chain saws, backhoes, tractors, pavement breakers, blowers, and dryers may cause damage to ears. Wear hearing protection.

Stress, Long Hours and Fatigue May Cause the Risk for Injury and Illness

- Continued long hours of work, combined with emotional and physical exhaustion and losses from damaged homes can create a highly stressful situation for flood cleanup responders.
- Responders exposed to these stressful conditions have an increased risk of injury and emotional crisis, and are more vulnerable to stress-induced illnesses and disease.
- All Responders should continually monitor themselves and others for signs of stress and fatigue.