

August 30, 2019

Potential Health Risks Associated with Hurricane Recovery and Flood-Affected Areas

Hurricane Dorian continues to move toward Florida, Georgia, and South Carolina. If you live or work in the areas that will be most impacted by the hurricane, the following is useful information. It is very important to make yourself and family members aware of the potential dangers you may face, and take proper precautions to avoid associated health risks.

After a hurricane, you may face flooding, long-term power outages, mold overgrowth, and other risks to your health. The following are recommendations/tips you can follow to reduce your risks when recovering from a hurricane disaster.

- **Food and Water Safety**

- After a disaster, throw away food that may have come in contact with flood or storm water, perishable foods that have not been refrigerated properly due to power outages, and those with an unusual odor, color, or texture. Such unsafe food can make you and your family sick even if it looks, smells, and tastes normal. **When in doubt, throw it out.**
- Do not use water you suspect or told is contaminated to wash dishes, brush your teeth, bathe, prepare food, wash your hands, make ice, or make baby formula. Safe water for drinking, cooking, and personal hygiene includes bottled, boiled, or treated water. Your state, local, or tribal health department can make specific recommendations for boiling or treating water in your area.
- Private drinking water wells in flooded areas should always be considered contaminated. Do not drink or bathe with well water.
- For a public water system, the municipality, water utility, or system owner will notify users of any unsafe drinking water conditions in the system and provide directions on what you can do to prevent exposure. You should verify with your local public health and public utilities whether public health personnel have cleared the local water supply for use.
- If you are unsure, use bottled or boiled water for drinking, cooking, brushing teeth, washing hands, and cleaning foods.

- **Air Quality and Respiratory Risks**

- Airborne pathogens and foreign agents pose serious health risks to affected populations. Dangers can range from inhaling carbon monoxide from a portable generator running indoors to breathing in mold spores growing in flooded structures. Flooding introduces a new ecosystem for fungal growth, which can have long-term health implications. Living or working in an affected building can have significant health impacts, including exacerbation of allergies and asthma, as well as immunological reactions.

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- If you are a smoker, have asthma, other lung or breathing conditions, or are involved in activities requiring heavy exertion, you may find it difficult to breathe in the hurricane or flood affected areas.
- Every day the Air Quality Index (AQI) tells you how clean or polluted your outdoor air is, along with associated health effects. The AQI translates air quality data into numbers and colors that help people understand when to take action to protect their health. Visit www.airnow.gov daily for local air quality conditions.
- Be aware of possible Carbon Monoxide poisoning. In a long-term power outage, people often resort to generators (many who have never used one before). As with any internal combustion engine, generators must be correctly fueled and ventilated, or placed away from residence air inlets (doors, windows, tent vents). If generators are used or located incorrectly, they can cause fires, explosions, and carbon monoxide poisoning.
- **Limiting Your Exposure to Mold**
 - Mold spores are everywhere, but in certain conditions mold can grow indoors or it can “overgrow” outdoors. When warm and wet, the surfaces of wood, leaves, paper, and other organic substances support mold growth. Mold outdoors is often not visible, but indoors it may appear as colored woolly mats, or it may produce a foul, musty, earthy smell.
 - Indoors or out, high mold spore exposure can cause sneezing, runny nose, eye irritation, cough and congestion, aggravation of asthma, and skin rash. Individuals with allergies, asthma, sinusitis, lung diseases, and individuals with weakened immune systems are at the greatest risk of health effects from exposure to mold. If you must disturb moldy material indoors, consider using respiratory protection and other protective equipment.
- **Staying Safe Outdoors After the Hurricane**
 - Always follow warnings about flooded roads.
 - Do not drive through floodwater– it may be deeper than you think, or the road may be blocked or damaged.
 - If you have to be in or near floodwater, wear a life jacket or Personal Flotation Device — especially if the water is rising.
 - Keep in mind that floodwater often carries germs and chemical contaminants. If you touch it, be sure to wash your hands with soap and water. If you do not have soap or water, use alcohol-based wipes or sanitizer.
 - Standing water and floodwaters can displace animals. Domestic animals and pets may be stranded or abandoned and can behave aggressively. Never assume a domestic animal is tame and not a threat, always approach them with caution.
 - After widespread flooding, wild animals are driven from their environments, causing them to come in contact with humans. Be alert for wild animals and wear boots or other protective clothing. In case of any animal bite or scratch, wound cleansing cannot be overemphasized. Immediate and thorough washing of all bite

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wounds and scratches with soap and clean water is a critical measure for preventing skin and wound infections. Stay alert to your surroundings and avoid contact.

- **Mosquito-borne Illnesses**

- Floodwaters recede, but thousands of pools of standing water remain. Coupled with the warm temperatures that accompany hurricanes, these are ideal breeding conditions for mosquitoes. Within a week or two after a hurricane, affected areas have consistently seen an increase in mosquito populations – and the diseases that mosquitoes bring. It is important to take mosquito-bite prevention precautions in these hurricane/flood affected areas to avoid these diseases.
- In 2018, no local mosquito-borne Zika virus transmission was reported in the continental United States
- Based on observations following previous major hurricanes, there could be several competing effects on the mosquito population after Hurricane Dorian.
- The immediate effect is a decline in population due to high winds and flash floods. Following hurricanes, however, pools of standing water become ideal breeding grounds for mosquitoes. In fact, health officials have asked residents to clear standing water from tires, buckets, and even from outdoor dog bowls. You should expect to see growth in mosquito populations and an increase in mosquito-borne diseases, potentially including Zika virus, dengue fever, West Nile virus, and chikungunya virus in flooded areas.
- These viral infections are rare and usually result in mild flu-like symptoms, but some people can become severely ill or die. No vaccines or antiviral treatments are currently available. The best treatment is preventing mosquito bites by using proper clothing and insect repellents.

- **Skin/Wound Care**

- Broken skin may become infected and lead to serious problems, especially when working in floodwater-contaminated environments. Any bite, cut, or broken skin should be cleaned with safe water. Apply an antiseptic as a solution or spray. Avoid creams since they can trap dirt.
- Increasing pain, redness, or discharge from a cut suggests a spreading infection and may require antibiotic treatment. **Seek medical help.**

What's not going to happen – cholera, typhoid, plague

Finally, a few things are **highly unlikely to occur**. If cholera is not already present, it will not appear out of nowhere because of a hurricane. Water does not spread plague; it is associated with rat infestations.

Coping with Stress

After the Storm

We know from experience the days and weeks following a hurricane can have as profound an impact on people's health. Recovering from a disaster can be extremely stressful on you and your loved ones. Some common aspects of daily life may become a bit more hazardous in post-hurricane/flooded environments, and it is vital that you practice self-care. In hot weather, stay hydrated by drinking plenty of clean water. Use sunscreen and reapply often. Take frequent rest breaks and wear light-colored and loose-fitting clothing.

Coping with Stress

Coping with the natural disaster can be overwhelming. Keep in mind that you and your eligible dependents have access to an Employee Assistance Program (EAP). Your EAP provides health, support, resources, and information for personal and work-life issues at no cost to you. EAP provides confidential counseling and referral for additional services designed to provide you and your family with assistance in managing everyday challenges. EAP also works with managers and supervisors in planning for situations, such as organizational changes, legal considerations, emergency planning, and response to unique traumatic events.

- **Common Responses to Disaster**

Individuals affected by a disaster may experience some signs or symptoms of trauma-related stress following a natural disaster:

- Difficulty Controlling Thoughts: concentration problems and vivid memories of the event
- Physical Effects: fatigue, headaches, chest pain, nausea
- Changes in Behavior: impaired sleep, disrupted eating patterns
- Strained Relationships: increased disagreements or conflict with family members, friends, and coworkers
- Sensitivity to Environment: loud noises, sirens, or other sensations may trigger memories of the disaster

- **Recovery Recommendations and Resources**

- If you need help, reach out to someone you trust.
- Pay attention to those around you, and be prepared to offer help to those who might not be coping well.
- Limit repeated media viewing of hurricane coverage and aftermath.

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In addition to your EAP, you may also contact the Health and Human Services Disaster Distress Helpline at 1-800-985-5990 or through SMS (Text “TalkWithUs” to 66746). This toll-free helpline operates 24 hours a day, seven days a week and offers free, confidential, and multilingual crisis support service to U.S. residents who are experiencing psychological distress because of natural or human-caused disasters.

- **Guides for Parents:**
 - [Tips for Talking with and Helping Children and Youth Cope after a Disaster or Traumatic Event](#)
 - [Helping Kids Cope with a Natural Disaster](#)
- **Resources for First Responders:**
 - SAMHSA [Disaster Response App](#)

Below is a list of Disaster Resources for your information:

- Plan Ahead for Disasters. Retrieved 8/23/2018 from <https://www.ready.gov/>
- CDC: Infographic: Be Ready! Hurricanes. Retrieved 8/23/2018 from <https://www.cdc.gov/phpr/infographics/br-hurricanes.htm>
- CDC: Storm, Flood, and Hurricane Response. Retrieved 8/23/2017 from <http://www.cdc.gov/niosh/topics/emres/flood.html>
- OSHA: Cleanup Hazards: Flood Fact Sheet. Retrieved 8/23/2018 from http://www.osha.gov/OshDoc/data_FloodFacts/Bulletin1.pdf
- OSHA: Flood Preparedness and Response. Retrieved 8/23/2018 from <https://www.osha.gov/dts/weather/flood/index.html>
- <https://www.cdc.gov/zika/geo/index.html>
- <http://www.floridahealth.gov/programs-and-services/emergency-preparedness-and-response/prepare-yourself/current-hazards/index.html>
- <http://www.alabamapublichealth.gov/>