



Floods: A Public Health Emergency

What geographic areas are at risk for major flooding?

Coastal regions are at risk for flooding due to several types of events. Storm surges that occur during hurricanes or severe storms are even more dangerous during times of the month and year when tides are exceptionally high. Major inland waterways are a potential public health and other hazard for nearby neighborhoods and urban areas. Inadequate or poorly maintained drainage systems can cause a back-up of water on streets and in homes. Urban areas that have limited green space are at risk because rainwater cannot be absorbed into the ground.



Recent events have raised awareness about severe storms and flooding. For instance, in Montpelier, Vermont, large sheets of ice narrowed the waterway of the Winooski River. With a spike in temperature, large chunks of ice broke off upstream and got stuck in the narrow channel, causing water to back up in this area. This was dangerous to areas in close proximity to the river because water is then unable to flow freely through the clogged channel, resulting in a high potential for flooding.

Greater New England recently suffered from the affects of Nor'easter, a powerful storm surge resulting in heavy rain or snow and strong winds. Some areas of New England were under a severe winter weather advisory with the up to 18 inches of snow while coastal regions received 3 to 5 inches of rain. The Massachusetts Emergency Management Agency reported flooded rivers, closed or washed out roads, and eroded coastal beaches to the point where houses fell into the surf.

Why are floods so dangerous?

Flooding accounts for an estimated 40% of all natural disasters, making it the most common of its kind worldwide. Moreover, flash flooding is the leading cause of weather-related mortality in the United States, with an estimated 200 deaths per year. Most of these deaths occur when people are swept away by rapidly moving water, which often has overflowed a riverbank or has flowed over a road. Despite advice to the contrary, many people attempt to drive through floodwaters, and may be swept away in a vehicle or after exiting the vehicle. Although most floods do not cause serious outbreaks of infectious disease or chemical poisonings, they can cause sickness in workers and others who come in contact with contaminated floodwater. In addition, flooded areas may contain electrical or fire hazards connected with downed power lines.

How can flood clean-up workers protect themselves?

As with most disasters, some of the biggest injury risks occur during the mitigation and clean-up phases. Rescue workers who have been trained in methods of rescuing people from floodwaters are generally well aware of the risks of entering the water. Volunteers who work to clean up after a flood may not be aware of some of the risks that they face from objects that are in the water, or sharp objects that can inflict injury. After a major flood, it is often difficult to maintain good hygiene during cleanup operations. According to the Occupational Safety and Health Administration, to avoid waterborne disease, it is important to wash your hands with soap and clean, running water, especially before work breaks, meal breaks, and at the end of the work shift. If no safe water supply is available for washing, use bottled water, water that has been boiled for at least 10 minutes or chemically disinfected water. Furthermore, if a cleanup worker experiences any of the signs or symptoms of illness, appropriate first-aid treatment and medical advice should be sought.

The National Institute for Occupational Safety and Health recommends the following guidelines for flood response workers:

- Heavy, waterproof, cut resistant **work gloves**
- **Goggles**, safety glasses with side shields or full-face shield
- Soft hat or other protective **head cover**
- **Hearing protection**
- Electrically insulated, watertight **boots** with steel shank, toe and insole
- Comfortable, form fitting, lightweight **clothing** that is impervious to contaminated water, chemical, physical, or biological hazard
- NIOSH approved **respiratory protection**, such as a properly fit N95 respirator, if exposed to mold-contaminated materials/environments



Sources:

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