Facts

Thousands of people are affected by natural disasters each year. Common events such as severe weather and uncommon and unexpected events such as earthquakes and forest fires can take lives and cause lasting damage.

Because healthcare professionals play an important role during natural disasters, it's important that you have a basic understanding of how to handle emergencies. In times of crisis, you must be able to care for yourself and for your patients.

Key Terms to Aid Your Understanding

Evacuation
In an emergency, leaving a location quickly

Natural disaster
A dangerous weather event that may occur unexpectedly, damaging structures and causing injury and death

Aftermath
The time period following a disaster; the results of a disaster

Types of Natural Disasters

Tornadoes and hurricanes

A tornado is a violent windstorm occurring over land. A rotating funnel cloud touching the ground is the most obvious feature. Tornadoes often occur suddenly and last just minutes. A hurricane, on the other hand, forms over the warm areas of the ocean and takes days to reach land. The storm may devastate an area for several hours. Hurricanes include heavy rains and high winds, up to 150 miles per hour. They cause the most destruction when moving from the ocean onto land. Sometimes tornadoes occur during a hurricane.

Extreme heat

Extreme heat is one of the most dangerous forms of natural disaster. Heat is the #1 weather-related killer in the United States, with as many as 400 victims each year. The people most at risk for heat-related death are the elderly, the homebound, the poor, people living in deteriorating older housing, people with chronic illness, and children under the age of five.

Snow, ice, and extreme cold

Though deaths and injury are less common from extreme cold, prolonged exposure to cold temperatures can cause serious or life-threatening health problems. The elderly are particularly at risk. Extreme cold may be associated with blizzards and icy conditions that lead to power failure and inability to obtain health care.

Homes may be cold due to power failure, an inadequate heating system, or the resident's inability to pay for fuel. To stay warm, people use space heaters and fireplaces. These increase the risk of household fire and carbon monoxide poisoning.

Preparing for Natural Disasters

This in-service lesson discusses preparation for tornadoes and hurricanes. Much of the information is simple common sense that can be applied to extreme heat, earthquakes, forest fires, and other types of natural disaster as well.

The most important thing you can do is to understand and follow your agency's emergency preparedness plan. In time of disaster, every team member must know the drill: how to communicate with each other if phone service is interrupted, which patients require priority attention and which will not be harmed by a delayed visit, how to deliver services under chaotic conditions, how to communicate with patients' family or other caregivers, where to find emergency supplies, how to evacuate patients safely, and more.

Beyond following your agency's emergency preparedness plan, there are specific steps you can take to keep yourself and your patients safe.

Tornadoes

Tornadoes usually happen along with severe thunderstorms. If thunderstorms are predicted for your area, stay tuned to television or radio for the latest information. A simple rain shower may develop into a thunderstorm that causes power outages and other dangerous situations.

It's important to know the difference between a tornado watch and a tornado warning. A tornado watch means that conditions are right for a tornado. During a tornado watch, continue to listen to local radio and television stations for weather information. Have a battery-powered radio on hand in case electrical power is lost and be prepared to take shelter. A tornado warning means that a tornado funnel has been sighted or is visible on radar. You should take shelter immediately.

Taking shelter

During a tornado, flying debris causes most of the deaths and injuries that occur. Although no place is completely safe during a tornado, some locations are much safer than others.

At home

The safest place in most homes is the basement. In a high-rise building or a building that has no basement, an inside room on the lowest floor is the safest. Choose a center hallway, a bathroom, or a closet. Avoid windows, because exploding window glass can injure or kill.

For added protection, position yourself and your patient under something sturdy such as a heavy table or workbench. If possible, cover yourselves with a blanket, sleeping bag, or mattress, and protect your heads with anything available. Do not take shelter where there are heavy objects such as pianos or refrigerators on the floor directly above you. These could fall though the floor if the tornado were to strike your house.

If your patient is unable to move from a bed or a chair and assistance is not available, use pillows and blankets to protect him or her from flying objects.

If you live in a mobile home, plan ahead. Be prepared to go to a nearby building, preferably one with a basement. In a tornado-prone area, the mobile home community may have a tornado shelter. Know where it is. Do not stay in a mobile home during a tornado, because it could turn over during strong winds. If there isn't adequate shelter nearby, the next best idea is to lie flat in a ditch or culvert with your head protected.

Away from home

If you are in a public building with a large roof span (such as a shopping center or an auditorium), find an interior hallway or room on the lowest level possible and stay away from windows. In a department store, get up against heavy counters that can deflect falling or flying debris. In a theater, crawl under a seat. And always remember to protect your head. Do not use elevators during a tornado because power may fail, leaving you trapped.

Personal Information

Be prepared. Both you and your patients should have important personal information written down and easily accessible before an emergency or natural disaster strikes. Include the following:

- Emergency telephone numbers (police and fire, paramedics, and medical centers)
- Other important telephone numbers (utility companies and insurance agents)
- Names and telephone numbers of family and neighbors
- Important family medical information (allergies, regular medications, and brief medical histories)

Store other important documents in a fire-proof and water-proof safe:

- Birth certificates
- Ownership certificates (house, autos, boats)
- Social security cards
- Insurance policies
- Wills
- Household inventory (a list of contents and photographs or videotape of the contents of every room).

Elsewhere

The worst place to be during a tornado may be in a motor vehicle because cars are easily thrown about by tornado winds. Do not stop under an overpass or a bridge. If you see a tornado, stop and get out of your vehicle, but do not get under it. If there is no adequate shelter immediately available, lie down in a ditch or other low-lying area away from trees and vehicles and cover with head with something, even your hands and arms.

Hurricanes

Although tornados may occur with short notice, you will usually have plenty of time to prepare for a hurricane. The National Weather Service will issue a hurricane watch when there is a threat of hurricane conditions to coastal areas within 24 to 36 hours. Keep yourself informed of the storm's progress. Because hurricanes often require evacuation, it's important to know a community's emergency plans, warning signals, evacuation routes, and the location of emergency shelters. Expect to evacuate and prepare accordingly.

If you live in the predicted path of a hurricane, take action immediately when a hurricane watch is issued.

- Fill your automobile's gas tank.
- Fill water containers, three to five gallons per person.
- Secure large, heavy outside items such as propane tanks that may damage property in a storm.
- Cover windows and doors with plywood or boards, or place large strips of masking tape or adhesive tape on the windows to reduce the risk of flying glass.
- Fill sinks and bathtubs with extra water for washing and for flushing toilets.

If you are ordered to evacuate, take only essential items. If time allows, turn off gas, electricity, and water. Unplug appliances to reduce the possibility of electrical shock when power is restored. When you leave, follow the community's published evacuation routes. Other routes may not be open, and traffic will be heavy.

Maintain a first aid kit

A first aid kit is essential during and after a natural disaster. Use a tool box or fishing tackle box to keep supplies organized, protected from water, and easy to carry. Inspect the kit regularly to be sure it's freshly stocked, and keep it in an easily accessible place. These are some essential items for any first aid kit:

Medications	Dressings	Other First Aid Supplies
Hydrogen peroxide Antibiotic ointment Individually wrapped alcohol swabs Aspirin and other over the counter pain relievers Prescriptions and any long-term medications (keep these current) Diarrhea medicine Eye drops	Adhesive bandages Elastic bandages Rolled gauze Cotton-tipped swabs Adhesive tape roll	Scissors Thermometer Bar soap Tissues Sunscreen Paper cups Plastic bags Safety pins Instant cold packs for sprains Pocket knife

The Aide's Role

To survive a natural disaster and reduce the risk of injury requires planning, preparation, and practice for what you and your patients would do if a disaster were to occur. Though it isn't an expressed duty of the home health aide, it's a good idea to be sure you and your patients know what to do in the event of an emergency. You both should know whom to call, how to get to escape routes, and where to find shelter.

Prepare

During any type of emergency situation, you will need basic supplies to help you survive. These are common household items. Use this checklist to remind yourself and patients what you should have on hand and easily accessible in case of an emergency.

- Clean containers for water, about five gallons for each person
- A three-day to five-day supply of non-perishable food
- A first aid kit
- A battery-powered radio, flashlights, and extra batteries
- Sleeping bags or extra blankets
- Prescription medicines and special medical needs
- Special dietary meals and items
- Disposable cleaning cloths and antibacterial sprays
- Personal hygiene supplies such as soap and toothpaste
- An emergency kit for your car with food, flares, booster cables, maps, tools, a first aid kit, fire extinguisher, and so on

Reinforce education

The elderly and homebound are especially at risk during an emergency. The nurse or therapist will help the patient establish a plan that you will reinforce. Talk with your patients about the procedures to follow in the event of a natural disaster. Being prepared can help them survive a life-threatening emergency.

One important way to prepare your patients is to be sure they have someone nearby to assist them in the event of a natural disaster. Each patient should have a list of family members and friends who will check on them in an emergency to ensure their safety. Patients should notify local authorities of special health needs such as equipment that requires electricity, and should obtain a list of both medical and non-medical shelter locations.

Medical supplies are especially important. Patients should have emergency medical supplies to cover them for at least three days. The supplies should all be in one easily accessible place and should be clearly marked with medication name and with the patient's name. Equipment such as wheelchairs, canes, and walkers should also be marked with the patient's name. Patients on kidney dialysis should be prepared with an emergency diet that will help them manage without dialysis for a few days.

Be Safe While on the Road

Because of the nature of your work, you may be in your car when a natural disaster strikes. Use these pointers to be prepared.

» Have your cell phone charged at all times and carry a car-charger for emergencies. Know your agency's policy on sharing cell phone numbers with patients, clinicians, and the home office.

» Listen for radio or television reports of travel advisories.

» Maintain your vehicle according to the manufacturer's recommendations. Be sure your air conditioner and heater are working properly.

» Check fluid levels frequently (antifreeze, oil, windshield wiper fluid). During winter months, keep your gas tank full.

» Carry an up-to-date local map in your car. Know an alternate route to take in case of fallen trees or washed-out bridges. In such circumstances, be prepared to visit another aide's patient if the regular aide is prevented from reaching that part of town.

» Avoid traveling in low-visibility conditions and on ice-covered roads, overpasses, and bridges if at all possible. If your area has frequent snow and ice storms, use snow tires.

» If you find yourself stranded in extreme cold, stay in your vehicle. Tie a brightly colored cloth to the antenna to signal rescuers and raise the hood of the car (if it is not snowing).

» In cold weather, run the engine (and heater) no more than about 10 minutes per hour, opening one window slightly to let in fresh air.

Medic alert tags or emergency health information cards communicate what rescuers need to know about patients who must be evacuated. The card should contain information about medications, equipment, allergies, communication difficulties, medical providers, and important contact people. Copies of this card should be kept in patients' homes, with their emergency medical kits, and on their persons.

Add 'ICE'

You and your patients with cell phones may want to add "ICE" to the phone's contact list. ICE stands for "In Case of Emergency." It is being used worldwide to provide contact information to emergency responders. Program ICE along with the phone number of a family member or friend, someone you would wish rescuers to contact in case of emergency.

Safety in the aftermath

As a home health aide, you may feel inclined or even obligated to serve your patients during an emergency and as soon as possible after a natural disaster. While this can be a goal, be aware that special safety considerations apply.

Though serious injuries do occur during a tornado or hurricane, many more injuries occur after the storm when people walk through the debris and enter damaged buildings. Many are injured by stepping on nails, others by falling objects. Tornados and hurricanes often damage power and gas lines, creating a risk for fire, electrocution, and explosion.

In case of injury, apply first aid. Clean open wounds and cuts with soap and clean water. Stop a bleeding injury by applying direct pressure to the wound. Remember basic cautions: Do not attempt to move seriously injured people unless they are in immediate danger of further injury. Get medical assistance immediately. If someone has stopped breathing, begin CPR.

Here are some safety precautions that could help you avoid injury after a tornado or hurricane.

- Throw away food that may have come in contact with flood or storm water. Discard perishable foods (meat, poultry, fish, eggs, and leftovers) that have been above 40°F for two hours or more. Drink bottled water and boil water for cooking, cleaning, and bathing.
- Use soap and clean water to wash your hands. If water isn't available, use alcohol-based products made for washing hands.
- Wear sturdy shoes or boots, long sleeves, and gloves when handling or walking on or near debris.
- Be careful when entering buildings that have been damaged. If you see frayed wiring or sparks, if electrical circuits and equipment have been wet or are in or near water, or if there is an odor of something burning, immediately shut off the electrical system at the main circuit breaker.
- Do not touch downed power lines or objects in contact with downed lines.
- Use a flashlight, if possible, rather than candles to light homes without electrical power.
- Never use generators or other gasoline, propane, natural gas, or charcoal-burning devices inside your home. Carbon monoxide can kill.
- If you smell gas or suspect a leak, turn off the main gas valve, open all windows, and leave the house immediately.

Observe and report

It is important that patients have a plan and a support system to see them through an emergency and it's important that aides know how well they are prepared. If you have concerns, report them to your supervisor. This may be the only possibility that some patients have for getting through the emergency.

Outcomes and the Home Health Aide

Every year, natural disasters cause serious injuries and take lives. Homebound patients are at risk in emergencies. The better educated they are, the better they will weather the storm. Prepare for and know how to manage during such circumstances. Patients who are prepared for emergency situations require fewer hospitalizations and less medical care.

CMS' Expectations

The Centers for Medicare and Medicaid Services (CMS) currently provides agencies and the public with 12 home health quality measures. These outcomes provide a more complete picture of the level of quality care home health agencies deliver.

Those home health quality measures look at:

» How well patients show *improvement* in
  - walking
  - bathing
  - transferring
  - managing oral medications
  - pain that interferes with activity
  - surgical wound status
  - breathing difficulty, and
  - urinary incontinence

» Number of acute care hospitalizations

» Frequency of emergent care

» Rate of patients discharged to the community, and

» Emergent care for wounds.

Case Study

Mr. Dalmonte is a 75-year-old man recovering from knee surgery who lives with his wife on the Florida coast. He has diabetes and goes for dialysis twice a week. Nicholas is a home health aide who provides personal care.

Because there have been news reports of bad weather and a hurricane heading for the coast, Nicholas listens to current weather reports before heading out to visit Mr. Dalmonte. Heavy rain is predicted, but the possibility of the hurricane arriving today is slight.

When Nicholas arrives, Mr. Dalmonte is in good spirits. He says he loves a good storm and is ready to face it "like a man." Nicholas says it's good to be positive but reminds Mr. Dalmonte that the situation could turn dangerous. Mr. Dalmonte says he's lived through a number of hurricanes and he isn't about to let this one scare him.

During his personal care, Mr. Dalmonte shares a story of how he refused to evacuate during a hurricane 20 years ago. He and his neighbor boarded up their houses and stayed together in one home's living room while the storm raged. He said it was quite an experience and he'd love to do it again. Nicholas reminds Mr. Dalmonte that he was much younger then and in much better health, and that he was lucky the storm didn't actually strike the home they were in. He reminds Mr. Dalmonte of the importance of evacuating when ordered. Mr. Dalmonte just laughs it off.

As Nicholas is getting ready to leave, he stops in the kitchen to have a word with Mrs. Dalmonte. He voices his concern that Mr. Dalmonte is not taking the severe weather forecast seriously. Mrs. Dalmonte assures Nicholas that she is aware of the weather and keeps up to date through news reports. Their neighbors who help them with other things are available in case of emergency. In addition, her daughter and family live nearby, ready to assist them as needed. Mrs. Dalmonte says she keeps enough of the right food on hand to control her husband's diabetes for 48 hours in the event that he were to miss his dialysis.

Nicholas feels much better about the situation and doesn't report anything related to emergency preparedness to his supervisor.

Think about It

1. Did Nicholas prepare well enough for an emergency before heading out to see his patient?
2. Was Nicholas correct in the type and amount of information he offered?
3. Could he have said more?
4. Was it a good idea to discuss the situation with his patient's wife?
5. Did he do the right thing by not reporting his concern to his supervisor?
6. Are you prepared for an emergency or disaster?