

# **Under the Weather**

Disaster Preparedness Guide for Hospitals

# Weather Intelligence Solutions

During a potential weather crisis, having your own team of meteorological experts just a phone call away is invaluable. We provide site-specific weather monitoring and alerts powered by analytics and our team of expert meteorologists. We produce instant forecast updates on hurricanes, blizzards, tornadoes, flooding and tropical storms and most importantly, tell you how these will impact your location(s).

When you know what you're up against, you can build dynamic coordination systems and prepare for every foreseeable emergency. We can help you train your team and implement smart, data-based contingency plans.

Interested in learning more? Contact us: www.stormgeo.com

# About StormGeo

StormGeo is a global provider of advanced weather intelligence and decision support services that are relied upon to maintain business continuity, avoid supply chain disruption, protect assets and maximize productivity for industries including healthcare, oil and gas, insurance, telecom and retail. The company has 25 offices worldwide, including 10 global operations centers available 24/7/365. As a participant in the UN Global Compact for Sustainable Ocean Business, our passion for weather and protection of natural resources motivates us to support our clients in making informed, environmentally responsible business decisions.



Emergency managers have one of the toughest jobs in healthcare administration, having to anticipate the worst-case scenarios. When tornadoes hit and hurricanes make landfall, it is the emergency managers who coordinate the response and pick up the pieces once the worst is over.

A massive storm can have widespread impacts to hospitals, with staff working to both protect current patients and brace for an influx of storm-related traumas. Without the right resources and training, staff can find themselves unprepared when disaster strikes. This guide will help your emergency management team prepare your facility for severe weather events with:

- Ways to overcome the 4 most common causes of disaster unpreparedness
- Solutions to the 5 major challenges emergency planners face
- Benefits of working with professional weather team
- Disaster preparedness checklist

# Building Your Emergency Management Team

Emergency management teams look different within every organization. Large healthcare networks might hire a full team of emergency managers and coordination specialists, whereas smaller hospitals generally have to task their engineers, safety officers, or trauma coordinators with the job. The level of responsibility comes down to the hospital's specialization and how the CEO chooses to structure the staff.

Regardless of whether your facility is a rehab center or a Level 1 trauma center, the emergency management team must be prepared for all kinds of weather-related impacts. For instance, the MD Anderson Cancer Center likely won't be the primary responder in a mass-casualties situation, but the team there still knows how to react in this scenario. When conditions are dire, people seek out the first hospital they can find. While a clinic or geriatric hospital won't have the same response protocols as a trauma center or general hospital, they must ensure that their staff is prepared for severe-weather events. Unpreparedness leads to lost time, poor coordination, and potentially puts patients and staff at risk.



## MOST COMMON CAUSES OF DISASTER UNPREPAREDNESS:

Not having formal weather emergency plans in place

Not having site-specific weather guidance

3 Lack of centralized communication

4

Misconceptions about perceived vs. real impacts

The last point is especially deceptive and causes problems more often than expected. We spoke with a hospital where emergency responders were expecting flooding from a severe thunderstorm. The team's first concern was what to do if water seeped into the building and damaged the structure. This is the outcome they planned for, and unfortunately, they didn't make plans for potential secondary or tertiary problems.

When the storm hit, there was flooding – as the emergency managers predicted. However, rather than damaging the building, the water created so much external debris that it backed up the local sewage system. Several of the hospital's pipes clogged to the point of bursting. As you can imagine, it was smelly, expensive, unhygienic mess.



Here's the problem: Thinking through every conceivable weather disaster takes time and money. Here's the solution:

#### Invest in a team that can devote time to understanding and meeting your needs and prioritize preparing your staff and facility.

Whether you're a big hospital or healthcare system with standalone emergency management teams or a smaller hospital with a one man "team," budgeting is always a concern. Budget constraints often force emergency managers to juggle multiple areas of responsibility within their organizations, even if they don't have the bandwidth to tackle it all. Healthcare networks know that extreme weather threatens their patients and employees. In fact, weather-related scenarios, such as tornadoes and ice storms, rank among the top three priority risks identified by hospitals. But unless a disaster is imminent, preparedness gets sidelined in the face of more urgent issues.

It's easy to say, "We haven't had an earthquake in a while, so we can hold off on disaster planning until next quarter." The day-to-day likelihood of having a catastrophe is slim, so it lulls people into a false sense of security,

Emergency planners must overcome internal apathy to prioritize their concerns on the agenda, knowing that **disasters will happen.** 



## Get Disaster Preparedness Right

Emergency planners face five main challenges:

- 1 Loss of infrastructure
- 2 Employee shortage
- **3** Patient and employee safety
- **4** Patient surge
- 5 Loss of essential services

# 1. Loss of Infrastructure

The first thing people do during a storm is seek shelter. Hospitals represent safety and security, and medical staff must keep patients safe in the midst of hurricanes, tornadoes, ice storms, and blizzards. This means fortifying your physical surroundings and ensuring that communication lines remain open.

When you're in an area prone to severe storms, you need to be aware of the threats and devise strategies to protect against damage. The top infrastructure concerns during a storm revolve around power and water, which is why hospitals are required to have multiple main and backup generators and enough switch boxes and fuel to power them all.

How well do your engineers know your utility providers and their resiliencies? The engineers must familiarize themselves with local electric providers. A good working relationship with the local electric company provides vital information about what to expect if a major storm hits. It's not enough to say, "if the lights go out, they're out." Facility engineers should perform routine checks on the generators to ensure the hospital can run regardless of any issues with the main grid.

Power also affects your ability to communicate, which is of the utmost importance during a crisis. Redundancies should be built into your communications systems and staff need to know how to use the different technologies available. Having 800 megahertz radios sitting in boxes does nothing for you when a tornado hits or a blizzard causes a massive pileup on the highway. Your team must know what resources you have and how to access them at all times

#### Prioritize your preparedness

All hospitals are required to annually conduct a Hazard

Vulnerbility Analysis. Kaiser Permanente has developed a HVA tool to help organizations identify the areas in which they're most vulnerable. Use the results to dictate your preparedness hierarchy. If earthquakes are the biggest threat in your area, begin there, and work down the list toward terrorism, mass shootings, and other weather events in order of likelihood.

Develop training protocols and response procedures for each scenario. Then, educate your employees on their responsibilities. Receptionists, biomed experts, charge nurses - they must all know where they fit into your systemwide response procedures and ready to act when necessary.

It's not enough to make plans and wait for disasters to happen. Weather changes quickly and having a constant stream of data helps you take action as early as possible.

#### **Think Beyond Hospitals**

Some large healthcare systems emphasize their hospital disaster preparedness plans but exclude the smaller clinics they manage, such as general practitioner's offices, walk-in clinics and outpatient treatment centers. These community facilities often lack the resources of large hospitals and are therefore at greater risk in a storm.

A sudden tornado or ice storm can cause irreparable damage to a small clinic, hurting the community and the healthcare systems' business concerns. One solution is to place these organizations under the same licensure as your hospitals, which requires them to follow similar safety protocols.



#### 2. Employee Shortage

Expectations are everything when you're training employees in disaster response. It's important to set staffing expectations prior to an extreme weather event so that they can act accordingly when it occurs.

In extreme, no-notice cases- such as flash flood and tornadoes- some employees won't be able to make it into work, perhaps due to roads blocked by debris, downed power lines, or because they need to go home and check on their families. This is especially challenging when storms occur during shift changes because staff are leaving while others are calling in to say they can't make it. When you operate in areas such as Oklahoma City, you have to account for this possibility.

## Thunderstorms and Tornadoes

This scenario is when dedicated site-specific weather data proves useful.If you know a major storm cell is moving toward your area tomorrow, you can staff appropriately and tell employees who live far way to arrange to stay late or come in early. You can even call a meteorologist to confirm conditions prior to a shift change, so that you can make immediate arrangements to keep staff on while you wait for employees traveling into work to arrive.

You may also want to provide instructions for staff who are off-site but can help at disaster locations or call in extra employees so your team doesn't get overworked.





#### Hurricanes

If you're in an area frequently hit by hurricanes, it's crucial to run drills for your employees so they know their responsibilities. Luckily, hurricanes don't develop overnight, leaving people enough lead time to board up their house and purchase supplies for their families before the storm makes landfall. This hopefully ensures that most staff members will show up during these high-stress periods when you need them most.

#### Blizzards

Northern cities such as Chicago, Boston and New York City can prepare similarly to those in hurricane-prone areas. Blizzards and ice storms present their own challenges, especially as road conditions can be treacherous. If you operate in areas where blizzards are common, make sure to have "ride out and recovery teams" that plan to stay at work for the duration of the storm. You don't want them driving back and forth, but you can't let people assume they'll have a week off becasue of the weather.

### 3. Patient and Employee Safety

Protecting your patients and employees is of the utmost importance. Up=to-the-minute, 24-hour weather data allows you to make the best possible decisions to keep everyone safe.

Real-time, site-specific storm updates enable departments to coordinate to ensure patients' and employees' well-being. Tornadoes begin suddenly, and you need to move people away from windows and to lower floors in anticipation of one hitting.

We draw a polygon around your specific facility and provide weather updates on current conditions. In a recent case, a clinic was informed of the possibility of a tornado forming in their vicinity. The clinic director received instant notifications when our meteorologists discovered that the tornado cell was headed directly toward the facility.

The director and his team acted swiftly-moving everyone inside to a safer area. Fortunately, the storm passed over the clinic and touched down elsewhere. Had the tornado struck the facility, our data would have saved many lives.

This data also enables emergency managers to alert employees traveling to and from work to seek shelter or warn doctors against moving between facilities until it is safe.

# **Ensure Safety**

- Have up-to-the-minute,
  24 hour weather data
- Make sure you receive instant notifications
- Have a plan for getting everyone to a safe area
- Alert employees traveling to and from facility

#### 4. Patient Surge

**Storms don't always directly damage your facility, but they can impact you in other ways.** In the event of a tornado, site-specific forecasts can inform you of conditions that might lead to a patient surge..

The site-specific information on a storm's track might tell you that your hospital is in the clear, but the local mall lies directly in the twister's path. Instead of preparing the hospital for a direct hit, you know to pivot and spend time getting ready for a possible surge of patients. This is an example of a disaster's secondary effects. If your hospital is the only one in the county and a tornado devastates the nearby towns, your team will have to be ready to treat the victims. It's important to assess your surge capacity and surge capability before the extreme weather arrives. Your doctors, nurses and administrative staff members could be inundated with complex, severe injuries. Don't wait until the ambulances arrive to think of your response.

In the case of major flooding, you might see a patient influx in the days and weeks following the disaster. People who have had to swim through dirty water will need penicillin and antibiotics to treat infections, and some might have hypothermia. Knowing what medicine and materials you'll need in various scenarios allows you to respond quickly and effectively.



### 5. Loss of Essential Services

As with power generators, hospitals are legally required to have 96 hours' worth of supplies on hand at all times. This includes medical devices, linens, pharmaceuticals and any other essentials.

Even with those stockpiles, you should have several emergency supply providers who will make deliveries in the days immediately following a storm. If one is unable to travel, you should have another already lined up. These types of logistics and contingency plans can be worked out ahead of time, so you aren't scrambling during an emergency. During Hurricane Harvey, hospitals across southeast Texas utilized a regional coordination system that connects hospitals with city emergency centers, allowing them to get out supplies if their sources fall through. The emergency center alerts providers across the state about the situation and can pull together supply deliveries for a hospital in need. In one instance, Texas Children's Hospital had tanker trucks of water delivered in preparation of a storm. When it was determined that this water wasn't needed, they used the regional coordination system to transport the water to a nearby hospital that had an urgent need.

Additionally, hospitals in the Texas Medical Center needed to coordinate the shared use of helistops for patient evacuation and delivery of supplies when some hospitals became inaccessible due to flooding.

Even with such redundancies, emergency planners need to think ahead. Request early drop shipments when you expect a hurricane or blizzard, and stock up on medications and staples such as water and gas for generators. Make sure that the blood center is functional and that you have enough units. Assess which supplies are most important so you can coordinate those deliveries in advance.





# **Disaster Preparedness Checklist**

#### Loss of Infrastructure

- Perform routine checks on emergency generators
- Build redundancies into your communications systems.
- Assess your resources, and know how to access them.
- Develop training protocols and response procedures for every scenario.
- Educate employees on their responsibilities.
- Ensure you have a constant stream of weather data.

#### **Employee Shortage**

- Set expectations for employees during a weather-related disaster.
- Create an employee policy and consequences for not following it.
- Call in extra employees in advance when severe weather looms.
- Provide instructions for off-site employees.
- Drill employees on their responsibilities during a disaster.
- If blizzards are common, have "ride out and recovery" team in place.

#### Patient and Employee Safety

- ✓ Have up-to-the-minute, 24-hour weather data.
- Make sure you receive instant notifications.
- Have a plan for getting everyone to a safe area.
- ✓ Alert employees traveling to and from your facility,

#### **Patient Surge**

- Assess your surge capacity and surge capability.
- Know what medicines and supplies you'll need in various scenarios.

#### Loss of Essential Services

- ✓ Work out logistics and contingency plans ahead of time.
- Line up emergency supply providers
- Connect with the regional coordination system.
- ✓ Request early drop shipments
- $\checkmark$  Stock up on medications and staples.