What do hospitals do in a hurricane? Use their own emergency plans

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We all expect hospitals to be open and operating when we need them, but extreme weather events like hurricanes are a strain on resources and pose significant challenges for hospitals. Closing a hospital is an extreme action, but several hospitals in Florida, Georgia and South Carolina did just that before the arrival of Hurricane Irma.

Following the widespread power outages in the aftermath of the storm, there were reports of hospitals running on backup generators.

With more than 300 hospitals and a higher share of older adults than any other state, emergency plans for Florida's hospitals were a critical issue facing emergency planners.

As a professor of urban planning, I have studied emergency planning and evacuation and also co-authored an extensive report on how hospitals coped with the aftermath of Hurricane Katrina and Hurricane Gustav. Hospitals plan for catastrophic events, but there are always lessons to be learned.

Hospitals try to stay open and to care for patients already hospitalized and for those who suffer injury or illness from a storm. Here's how they do it.

Planning is paramount

Each hospital is required to have an emergency plan, usually approved by the hospital's accrediting body. A hospital director and emergency leadership team are responsible for implementing the disaster plan.

A hospital typically convenes a top leadership team and activates the hospital's Incident Command Center (ICC). Team members coordinate with weather experts, local governments, local law enforcement, ambulance companies and first responders, and communicate with patients and their families.

One of the most difficult decisions facing a hospital's leadership team as it prepares to face a storm is the decision to evacuate some or all of the hospital's patients.

Before a storm, a decision would be made to "shelter in place" (prepare the hospital and all patients and staff to "batten down the hatches" and remain in the hospital) or perform a full-scale evacuation, as did several hospitals in the Florida Keys, Miami, Tampa and Jacksonville. In that case, patients would be moved to other facilities. This is rare, however, as the risk to patients and costs in time and money are very high.

In some cases, a hospital will transfer certain patients at very high risk should a power outage occur, as a Savannah hospital decided to do in transferring newborns from its neonatal unit to hospitals in Atlanta.

Hurricanes can be classified as an expected event, unlike other extreme events that happen spontaneously and without warning, like earthquakes. When a hurricane is predicted, plans are focused on the "zero hour," or when the hurricane is predicted to make landfall. Major milestones in the emergency plan are performed according to a predetermined schedule in the hours and days leading up to the zero hour.

Hospital staff prepare the hospital to weather a storm. Supplies and

equipment must be moved to higher floors in case of flooding. Security must be on hand because of the threat of vandals and looters. At the same time, patients must be continually cared for.

On the patient side, patients who can be discharged from a hospital before a disaster strikes are discharged. New patients are not admitted. Elective surgeries are canceled. Pregnant women and patients who need specialized care, such as the babies in Savannah, may be transferred to facilities out of harm's way. But transferring a patient is a decision made with great care, as any transfer could produce shocks that put patients in grave danger.

Preparing for the worst

The medical staff of doctors, nurses and technicians are typically divided into an "A team," who would be in place in the hospital when the disaster strikes, and a "B team," who would be on standby to report to the hospital after the disaster and relieve the A team. Sometimes, the B team is already at the hospital and goes into action to relieve the A team as necessary.

There is no difference in ability between the A and B teams; they are merely called A and B to distinguish between the two groups. That said, staff members with disaster experience are prized employees.

Depending on hospital policy, hospital staff members may be allowed to bring family members and even pets with them to the hospital, since past experience has shown that this practice increases the likelihood they will report to work in the face of the disaster and not flee and abandon their jobs. During Hurricane Katrina, some hospital staff evacuated New Orleans when they were expected at work, and hospital administrators have since better communicated emergency plans to reassure all staffers that their safety is of prime importance.

Dealing with the chaos after a storm

Hospitals also face important decisions about patient care after a storm. To evacuate after a disaster and face aftermath conditions, such as unprecedented flooding in New Orleans following Hurricane Katrina, could be more challenging than evacuating before a disaster. Dangerous hospital evacuations were performed in New Orleans after Hurricane Katrina. If extreme flooding occurs, emergency plans must take into account the fact the surface transportation might not be available.

In the aftermath of a disaster, hospitals may suffer power loss. Emergency plans call for backup power and other contingency systems. Uninterrupted power is critical, since some patients may be connected to lifesaving equipment.

In southern states, where most hurricanes in the U.S. first hit land, air conditioning is vital to patient comfort. Therefore, hospitals in states such as Florida, Georgia and South Carolina must have a plan to ensure air conditioning, when possible.

Hospitals must also be prepared to be self-sufficient in the event that responders cannot reach them. Plenty of food, water and medicine must be on hand. Emergency supplies are always on hand in hospitals, but hospitals order even more if the threat of an extreme event is real, as was the case with Irma.

Lessons from previous extreme events

Any time a disaster occurs and a hospital's ICC is activated, there are lessons to be learned. Hospitals' experiences in Hurricane Katrina, Hurricane Sandy and other extreme events brought some of those lessons to the forefront.

First, it is especially important to construct resilient building systems, such as electrical, gas, water and sewers. Emergency planners should plan for a backup system to activate should a main system fail. For example, backup generators, which typically had been placed on first-floor or basement maintenance rooms, are now often placed on higher floors after they were wiped out in previous hurricanes and floods. Many hospitals also have their own wells on site (or wells that can be used in emergency).

Second, hospitals must plan to be self-sufficient, in a worst-case scenario for up to a month. Hospitals should be prepared with greater quantities and fuel and critical supplies. Agreements with partners made in advance of disasters can open up channels for faster delivery of supplies.

When disaster strikes, protecting lives is a top priority, and hospital staffers are surely some of the bravest people working to save lives.

Hospital communities should take comfort in their preparation of a disaster plan, and then execute it with adaptability and flexibility. Advanced planning for extreme events allows hospital staff to focus on what they do best – compassionate patient care – when a disaster strikes.

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