



## Planning for Power Outages: A Guide for Hospitals and Healthcare Facilities

It's 8:00 p.m. The hospital census is currently operating at 85% capacity. You hear reports of severe storms causing power outages in some areas and a forecast that these storms will be intensifying as they reach your hospital. Local electric utility officials are assessing the situation and while they do not anticipate long-term power interruptions for your facility, they are offering no guarantees. However, you are planning an emergency meeting with your hospital engineers to mitigate any potential risks. What should you discuss to prepare for a local power outage? What about a widespread or extended power outage?

In 2003, the northeastern part of the United States experienced a widespread blackout that left approximately 45 million people across eight states without power. As a result of this blackout, some communication and transportation systems were disrupted, some areas experienced loss of water pressure, and most businesses were unable to operate until power was restored. The Healthcare and Public Health Sector was in no way immune to the effects of the blackout. Hospitals had several internal problems, including: loss of HVAC and water pressure, inability to sterilize instruments at certain facilities, and loss of refrigeration and cooking in cafeterias.<sup>1</sup> Physicians and staff were unable to view X-rays using digital systems, register patients, and transport patients and supplies between floors with non-operational elevators.<sup>2</sup> Additionally, there were several reports of respiratory issues for community-based patients due to home medical device failure.<sup>3</sup>

This blackout served as a critical lesson for hospital administrators and emergency planners who need to ensure they have established the appropriate procedures to handle a widespread or local power outage. This information sheet highlights some of the impacts of a power outage and poses questions to ask to help you prepare for an outage. Additionally, it provides some information on existing resources that can help you develop and implement your preparedness strategy and establish better relationships with your local electric utility.

<sup>1</sup> Beatty ME, Phelps S, Rohner C, Weisfuse I. (2006). Blackout of 2003: public health effects and emergency response. *Public Health Rep*, 121(1): 36-44

<sup>2</sup> Klein KR, Rosenthal MS, Klausner HA. (2005). Blackout 2003: preparedness and lessons learned from the perspectives of four hospitals. *Prehosp Disaster Med*, 20(5): 343-349

<sup>3</sup> Greenwald PW, Rutherford AF, Green RA, Giglio J. (2004). Emergency department visits for home medical device failure during the 2003 North America blackout. *Acad Emerg Med*, 11(7):786-790

## Power Outages Can and Do Occur: What does that mean for you?

- Loss of HVAC systems that rely on electricity for heating, cooling, and ventilation.
- Loss of respiratory devices and other critical equipment for patients in intensive care, neonatal, or cardiac units.
- Loss of lighting for high-risk surgical procedures and potential black out of rooms with no emergency lighting.
- Loss of pressure in water distribution systems.
- Potential loss of access to other hospitals and healthcare facilities if they are also affected.
- Inability to access electronic patient medical records and other hospital data.
- Loss of patient signaling system for assistance by medical and hospital staff.
- Potential loss of access to medication, vaccines, and other medical supplies requiring keyless entry.

## How Prepared Are You: Questions to Ask Your Team & Local Utility

- What is my electric utility's contact information in the event of a power outage?
- Where is my facility located on the electricity distribution network? What other hospital facilities are located on the same circuit?
- How reliable is the electricity distribution network where my facility is located?
- Have you discussed with your utility if they consider your hospital facility to be a priority when responding to a power outage or shortage of electricity supply?
- Have you considered participating with your utility when they conduct drills or exercises to respond to a loss of power?
- Do you have partnerships in place with other local healthcare facilities in case of an extended power outage?
- Have you determined your energy usage under normal operating conditions?
- Have you identified your essential functions and minimum electricity needs and sized your backup generators appropriately?
- Do you have procedures to prioritize emergency power allocation to key resources (i.e. HVAC systems, ventilators, patient monitors)?
- How often is your emergency generator system tested to assure reliable startup and sustained operation?
- How long will your supply of emergency generator fuel last, and how can you be assured of continued fuel delivery in the event of an extended power outage?

If you do not know who to contact on a 24x7 basis, then how effective is your emergency plan? Establish relationships with these key individuals:

My Electric Utility:

Name \_\_\_\_\_

Phone \_\_\_\_\_

State Emergency Operations Center:

Name \_\_\_\_\_

Phone \_\_\_\_\_

State Health Department:

Name \_\_\_\_\_

Phone \_\_\_\_\_

Local Health Department:

Name \_\_\_\_\_

Phone \_\_\_\_\_

## Helpful Tools and Resources

### Edison Electric Institute

*Provides information on how to stay informed about policy issues related to the electricity industry and provides a forum for executives and industry experts to exchange information.*

More information: <http://www.eei.org>

### North American Electric Reliability Corporation

*Ensures the reliability of North America's bulk power system by proposing reliability standards for electric utilities and offering additional support through training and education.*

More information: <http://www.nerc.com>