UTILITY FAILURES IN HEALTH CARE TOOLKIT

ASPR
ADMINISTRATION FOR STRATEGIC
PREPAREDNESS AND RESPONSE

TRACIE
HEALTHCARE EMERGENCY PREPAREDNESS
INFORMATION GATEWAY

Utility failures are a major concern for health care and may cause substantial harm to patients, staff, and facilities. Threats include infrastructure damage due to natural disasters and other incidents, planned outages to relieve stress on services or prevent other hazards, and malicious acts such as physical and cyber sabotage. It is also important to note the cascading effects a failure of one utility may have on others; more than one utility may fail simultaneously or sequentially. ASPR TRACIE created this suite of tip sheets to assist health care facility managers and emergency planners identify issues to consider when planning for and responding to various types of utility failures.

The tip sheets provide planning and response considerations for the following types of utility failures:

- Electricity
- Fuel
- Oxygen
- Telecommunications and Information Technology
- Water

Health care facility managers and emergency planners can consider the following actions when preparing for utility failures:

(N) HAZARD IDENTIFICATION AND ASSESSMENT

(C)
- Conduct a hazard vulnerability assessment to consider how likely utility failures and fuel shortages are, how they may affect the facility, and how severe the effects may be.
- Assess the facility to determine the current condition of utility-related infrastructure.
- Consider the effects of previous utility failures on the facility and the mitigation measures implemented to address them.
- Establish relationships with utility providers and emergency preparedness partners in the community to understand their planning and response expectations and how those may affect the facility hazard assessment.
- Determine utility vulnerabilities and priorities based on the assessments, knowledge of the facility and the utilities that serve it, resources available at the facility and in the community, and the facility's business continuity plan.

(N) BUSINESS CONTINUITY

(C)
- Identify critical services and systems and how they will be sustained in the event of a utility failure.
- Calculate normal daily usage patterns for utility-dependent services and identify practices that can be implemented to conserve or reduce usage without compromising safety or patient care.
- Determine which facility critical infrastructure does not have redundancies and identify alternatives for cascading failures and to reduce interdependencies.
- Develop robust business continuity plans that account for utility failures for all clinical and operational services.

KEY   (N) Need   (C) Considerations

N FACILITY PLANNING, TRAINING, AND EXERCISING

C
- Establish a multidisciplinary emergency management committee that complies with the 2024 edition of National Fire Protection Association (NFPA) Code 99 12.2.3.1 and other accreditation requirements. Ensure representation from: senior facility management, facility engineering, emergency management, medical staff, nursing, infection prevention, emergency department, surgical services, critical care, safety/industrial hygiene, security, information technology, materials management, marketing/public relations, food services, environmental services, risk management, compliance, and other mission essential services and departments.
- Develop/update emergency response and business continuity plans for utility outages.
- Develop/update unit/department-based quick response guides focusing on clinical and support service processes during utility outages.
- Train all staff in emergency procedures relevant to their role in an outage and ensure they understand how utility failures affecting services in other departments may have a cascading effect on their department.
- Validate 24/7 availability of staff who know emergency procedures for all utilities including safe shut-off.
- Establish clear criteria for activation of the emergency response plan and incident command.
- Conduct exercises to validate emergency procedures and reinforce staff training.
- Educate staff on alternate methods of information sharing (e.g., television, radio, social media) about facility status if usual communication methods are interrupted.

N COORDINATION WITH UTILITY PROVIDERS

C
- Build relationships with utility providers and vendors to establish clear roles, responsibilities, and expectations during utility failures.
- Maintain updated 24/7 contact information to enable communication and information sharing during outages.
- Establish emergency contracts with vendors that can supplement or replace interrupted services or provide support for contingency operations.
- Ensure utility providers prioritize the facility for service restoration.
- Participate in exercises with utility providers.

N COORDINATION WITH COMMUNITY PARTNERS

C
- Participate in a local health care coalition (HCC) to build relationships and enable coordinated regional planning with other health care facilities, public health, emergency management, emergency medical services, and other key partners in the community.
- Know which health care facilities in the community are likely to be affected by the same utility failure due to proximity to the facility, reliance on the same utility infrastructure, or use of the same utility providers or supporting supply vendors.
- Understand how the facility's patient volume may increase if it is not affected by a utility failure impacting other health care facilities in the community.
- Participate in the development of HCC response plans to ensure expectations align with capabilities.
- Align planning with local and state emergency management partners.
- Understand what federal assistance may be available and provided to the community during a widescale and/or prolonged utility crisis.
- Collaborate with non-governmental and other community-based organizations that may be able to address any gaps.
- Understand resources that may be available through mutual aid or other agreements.
- Maintain updated 24/7 contact information for key partners to enable communication and information sharing during outages and establish notification procedures.
- Ensure local and/or state emergency management agency prioritizes the facility for support and service restoration.
- Participate in exercises with key partners (e.g., emergency responders, nearby facilities, and vendors).

N RESPONSE ACTIVITIES

C
- Have and follow a rapid assessment process when a utility outage occurs to determine effects on clinical and support operations.
- Activate incident command as needed.
- Follow emergency response and business continuity plans.
- Ensure building integrity and safety.
- Communicate with staff, patients and their loved ones, and the public about the facility status and any affected operations. Standardize pre-incident messages based on the facility's hazard vulnerability assessment.
- Activate appropriate insurance lines.
- Be aware of regulatory reporting and other requirements that may need to be met if utilities are interrupted or when operations are restored.

N ADJUSTMENTS IN OPERATIONS

C
- Develop and implement conservation measures.
- Identify services that may be outsourced (e.g., laundry, meal preparation) during the incident to reduce operational burdens. Ensure emergency contracts, memoranda of understanding, mutual aid, or other agreements are in place to provide these services.
- Consider how services may be relocated if a utility disruption only affects part of the facility.
- Determine thresholds at which the facility will suspend or postpone certain services, go on emergency department diversion (if applicable), or partially or fully evacuate. Pay particular attention to patient populations who would not be able to receive optimal patient care during each type of utility failure (e.g., dialysis patients during a water outage).
- Ensure plans and agreements are in place to enable transfer of services or evacuation.

KEY	N Need	C Considerations

N HEALTH CARE FACILITY AND COMMUNITY RESILIENCE

C
- Follow best practices to protect the facility's utilities-related infrastructure, including regular maintenance and testing.
- Minimize risk by maintaining regular inspection and maintenance strategies for primary and secondary systems.
- Know how the facility and other response partners in the community will support staff and members of the public affected by utility failures in the region. This may range from temporarily feeding and housing staff and their family members who lose utility services in their homes to designating locations other than health care facilities where members of the community can be directed to address unmet needs.
- Conduct an after-action report following all utility-related incidents and exercises to understand what happened and why and leverage those learnings in mitigation efforts to lessen or eliminate future impacts.
- Develop and track progress of key recommendations and corrective actions outlined in improvement plans.
- Update emergency response and business continuity plans to reflect learnings from incidents and exercises and to address new local, state, federal, or other requirements.
- Explore the feasibility of using new and emerging technologies to harden the utility infrastructure or improve resilience. Include consideration of technologies not reliant on fossil fuels.
- Ensure utility infrastructure and resilience are considered during the design and construction phases of new health care facility builds and renovations.

Related ASPR TRACIE Resources

- Continuity of Operations (COOP)/Business Continuity Planning Topic Collection
- Emergency Operations Plans/Emergency Management Program Topic Collection
- Emergency Preparedness Requirements for Medicare and Medicaid Participating Providers and Suppliers (CMS EP Rule) Resource Page
- The Exchange Issue 10: Preparing for and Responding to Wildfires and Planned Outages
- The Exchange Issue 17: Health Care Facility Water and Other Utility Outages
- Hazard Vulnerability/Risk Assessment Topic Collection
- Healthcare Facility Evacuation/Sheltering Topic Collection
- Patient Movement, MOCCs, and Tracking Topic Collection
- Utility Failures Topic Collection

Other Resources

- American Society for Health Care Engineering: Hazard Vulnerability Assessment (HVA) Tool
- California Emergency Medical Services Authority: Hospital Incident Command System Incident Planning Guide and Incident Response Guide for Utility Failure
- CMS: Emergency Preparedness Rule 42 CFR 482.15

- NFPA: NFPA 99: Healthcare Facilities Code
- NFPA: NFPA 110: Standard for Emergency and Standby Power Systems
- National Governors Association: Prioritizing Resilience: Best Practices on Energy Resilience for Healthcare Facilities
- The Joint Commission: Utilities EM.12.02.11