

ASPR TRACIE Technical Assistance Request

Requestor: [REDACTED]

Requestor Phone:

Requestor Email:

Request Receipt Date (by ASPR TRACIE): 29 December 2017

Response Date: 29 December 2017

Type of TA Request: Standard

Request:

[REDACTED] asked ASPR TRACIE for resources on best practices and lessons learned related to the use of temporary hospital facilities after disasters.

Response:

The ASPR TRACIE team searched through existing ASPR TRACIE resources and online for materials related to temporary hospital facilities. Resources gathered are listed below. Section I includes a legal authorities document from CMS. Section II provides best practices and lessons learned resources. Finally, Section III includes other related materials (e.g., recovery guidance and repopulation assessments).

Additionally, we are actively reaching out to subject matter experts that may have additional information. The [REDACTED] will reach out to the point of contact for [REDACTED] regarding the request submitted to their primary contractor for the blueprints of the temporary facility.

The following was provided by the Region VII HPP Field Project Officer:

- [Johnson Portables](#) was the company that set up the temporary hospital at Joplin. The blueprint for St John's Regional Medical Center: <https://johnsonportables.com/our-work/joplin-blueprint>.
- There were several stages of temporary facilities before Mercy Hospital was rebuilt and I think recognizing that and the phases they went through is very important – it wasn't a quick fix but a long road to recovery. A week after the tornadoes, the hospital staff moved from the civic center to a tented field hospital. That August, the components of a modular facility arrived, providing room for 60 beds. Then (about 9 months out) the 224 sections were put together for the component built facility – before the Mercy rebuild began in 2015. This last was donated in 2016 (once the final re-construction of Mercy was complete) to KU School of Medicine.

I. Legal Authorities

Centers for Medicare and Medicaid Services. (2017). [Temporary Hospitals Established in Response to Catastrophic Damage from Hurricanes.](#)

This document addresses the CMS requirements regarding the temporary hospitals that have been established in the U.S. Virgin Islands and Puerto Rico due to hospital closures impacted by Hurricanes Irma and Maria. It also provides information on payment and billing issues.

II. Best Practices and Lessons Learned

Bernhard, B. (2011). [Lost Medical Records Complicate Joplin Hospital's Tornado Recovery.](#) St. Louis Post-Dispatch.

This article discusses how St. John's Regional Medical Center joined its parent company Mercy's electronic medical record system just three weeks prior to the tornado to back up the paper records. However, the tornado scattered the paper records for miles, with some being found up to 75 miles away. Privacy waivers are also discussed in the article, which were invoked after Hurricane Katrina.

Cage, J. (2013). [Joplin Pays it Forward: Community Leaders Share Our Recovery Lessons.](#)

This document compiles stories of those that were part of the response and recovery efforts after the Joplin tornado in 2011. The firsthand accounts include stories of how schools reopened, working together to open surge medical clinic and volunteer coordination points, coordination of thousands of volunteers, and others from first responders and residents. NOTE: Lessons learned from healthcare facilities are addressed in pages 55-73.

Carmichael, J. (2016). [Alumnus Heads Innovative Mobile Disaster Hospital for FEMA.](#) Virginia Commonwealth University (VCU) News.

This article addresses the mobile hospital that was set up in Louisville, MO after a tornado damaged the local hospital. It will remain operational until 2018 when construction of a new hospital is planned to be complete. It provides lessons learned from nurses and other staff managing the temporary hospital (e.g., showers should be wheelchair accessible, patients need more private rooms, and doctors require improved access to electronic medical records).

Joint Commission. (2006). [Surge Hospitals: Providing Safe Care in Emergencies.](#)

This document provides information for healthcare planners at the community, state, and federal level about what surge hospitals are, and the kind of planning they require. It discusses types of surge hospitals, how to plan for and establish, issues to consider such as legal and sufficiency of care, and how to ensure long-term surge hospitals can offer

safe care. It also offers real-life examples of how surge hospitals were established on the Gulf Coast after Hurricanes Katrina and Rita in 2005.

Kearns, R.D., Skarote, M.B., Peterson, J., et al. (2014). [Deployable, Portable, and Temporary Hospitals; One State's Experiences through the Years](#). (See attached for full document). *American Journal of Disaster Medicine*, 9(3):195-210.

The authors review the use of temporary hospitals to augment the healthcare system as a solution for dealing with a surge of patients for various disasters. They highlight experiences from North Carolina over the past 150 years, including the 9/11 attacks.

Patterson, B. (2014). [The Story of Mercy and Joplin- Hospital Recovery- Sustainability](#). 19th Annual Chicago Infection Control Conference.

This slide deck provides an overview of the impact of the tornado on Joplin, with a focus on the destruction of the hospital. Slides outline evacuation, triage, emergency care, tracking, EMS operations, and challenges. It also includes the Missouri Hospital Association's response roles, public health response, ongoing challenges, and lessons learned.

III. Other Resources

The following ASPR TRACIE Topic Collections may also be useful: [Alternate Care Sites](#) and [Recovery Planning](#).

Atkins, K. (2017). [The Hurricane Wrecked a Keys Hospitals. but there's Pop-up Care in the Parking Lot. Miami Herald](#).

This article addresses the temporary hospital that was set up in Florida after Hurricane Irma caused local hospitals to shut down. Although it does not provide lessons learned or best practices, the article does address the services that were provided in the temporary hospital.

Centers for Disease Control and Prevention. (n.d.). [Remediation and Infection Control Considerations for Reopening Healthcare Facilities Closed Due to Extensive Water and Wind Damage](#). (Accessed 12/29/2017.)

This page provides information to assist healthcare facilities with the tasks involved during clean-up and reopening healthcare facilities after a natural disaster. It includes checklists for mold remediation and structural recovery, water and electrical utilities, ventilation system, structural building materials, medical equipment, certification for occupancy, and post reoccupation surveillance.

Harvard School of Public Health, Emergency Preparedness and Response Exercise Program. (2014). [Essential Functions and Considerations for Hospital Recovery Version 2](#). Federal Emergency Management Agency.

This document helps hospitals prepare to manage recovery from all types of events. Recovery planning benchmarks are included starting on page 34 to help hospitals independently assess their recovery capabilities. The benchmarks are drawn from a variety of sources including the ASPR Healthcare Preparedness and Response Capabilities, Joint Commission Hospital Accreditation Standards, the NDRF, and lessons learned from both recovery-focused exercises and real-world disasters. The document also includes questions to consider during recovery planning starting on page 38.

Hassol, A., Zane, R. (2006). [Reopening Shuttered Hospitals to Expand Surge Capacity](#). AHRQ Publication No. 06-0029.

This guidance document provides tools and recommendations to help planners determine if and how to utilize an abandoned or shuttered hospital for surge capacity needs during a mass casualty or other similar event. It provides staffing requirements, safety checklists, supplies and equipment needs, and regulatory/legal issues to consider.

Illinois Medical Emergency Response Team. (n.d.). [Alternate Care Site Planning Temporary Medical Treatment Station Planning](#).

This site provides tools, planning considerations, and supply and equipment information for TMTS (temporary medical treatment stations). Though these are not specific to temporary hospitals, it may provide some useful information regarding sample pharmaceutical caches, medical supplies and equipment, site selection, etc.

Morse, S. (2015). [When Disaster Strikes: CFOs Help Hospitals Recover after Joplin Tornado, Hurricane Sandy](#). Healthcare Finance News.

Four years after the tornado hit St. John Regional Medical Center, it has rebuilt and reopened as Mercy Hospital Joplin. FEMA provided \$33 million of the \$434 million needed to rebuild the new hospital. The CFO noted a 20% drop in market share during the transition/rebuilding. Also, the South Nassau Communities Hospital took two years to finalize their insurance claim, but only 6 months to rebuild (\$4-\$5 million). The hospital lost approx. \$4 million in operations in 2012, which was the only year in its 8 year existence it lost money.

US Department of Homeland Security, Federal Emergency Management Agency Region VII. (2011). [Final Environmental Assessment St. John's Regional Medical Center Temporary Medical Facilities](#).

This report shows the findings of the potential environmental impacts of the temporary medical center built as a result of the tornado that damaged St. John's Regional Medical

Center. This report may provide information helpful for other locations building temporary medical facilities.

Zane R, Biddinger P, Gerteis J, Hassol A. (2010). [Hospital assessment and recovery guide](#). AHRQ Publication No. 10-0081.

This guide is designed to help organize the initial assessment of a hospital after an evacuation/closure due to an emergency event. The guide is divided into 11 sections, each with its own team and assessment assignment: Administration, Facilities, Security and Fire Safety, Information Technology and Communications, Biomedical Engineering, Medical, Ancillary Services, Materials Management, Building and Grounds Maintenance/ Environmental Services, and Support Services.