

ASPR TRACIE Technical Assistance (TA) Request

Request Receipt Date (by ASPR TRACIE): 30 July 2019

Response Date: 9 August 2019

Type of TA Request: Standard

Request:

The requestor asked if ASPR TRACIE had After Action Reports (AARs), preferably from real-life events, and from the perspective of hospitals and health systems. However, it was noted that AARs based on scenarios and outside of this scope could be included as well.

Response:

The ASPR TRACIE Team conducted a search for AARs and lessons learned from real-life events on the ASPR TRACIE website, as well as within previous TA requests. We also searched online for relevant materials.

The ASPR TRACIE Team identified several AARs and lessons learned resources from real-life events and exercises, and from the hospital/health system perspective. **NOTE:** We gathered materials that primarily contained lessons learned from real-life events as we believe those will add the most value to this request.

The following sections in this document include AARs and lessons learned covering these topics:

- Section I – mass casualty events
- Section II – mass gathering/ special events
- Section III – special hazards

I. Mass Casualty-Related After Action Reports/ Lessons Learned

Real-Life Events

American College of Emergency Physicians (ACEP). (2015). [Lessons Learned from Hurricane Sandy and Recommendations for Improved Healthcare and Public Health Response and Recovery for Future Catastrophic Events](#).

This report summarizes the findings from a research project conducted to evaluate how the healthcare system was negatively affected in preparation for, during, and after Hurricane Sandy. Lessons learned from the hospital, EMS, and ancillary services (i.e., pharmacies, methadone clinics, dialysis/kidney centers, and medical supply companies) sectors are noted to assist healthcare professionals, medical facilities, and public health better prepare for future disasters.

ASPR TRACIE. (2017). [Health and Social Services Recovery Lessons Learned from the 2016 Louisiana Flooding.](#)

Speakers from Louisiana share how they managed their recovery, organized, designed, and implemented federally-compliant recovery programs, and delivered the best possible services to their communities. **NOTE:** The title page of the presentation includes a link to the recording. You will need to enter your name and email address prior to accessing the recording.

ASPR TRACIE. (2018). [Healthcare Response to a No-Notice Incident: Las Vegas.](#)

In this ASPR TRACIE webinar, healthcare providers who responded to the mass shooting incident in Las Vegas share their experiences and recommendations that can help others prepare for similar incidents.

ASPR TRACIE. (2017). [Healthcare System Recovery Timeline: A White Paper for Texas.](#)

Following a number of related technical assistance requests and in anticipation of future information needs from healthcare systems impacted by current and future disasters, ASPR TRACIE developed this white paper to answer the question: “How long does it take the healthcare system to recover from a major hurricane?”

ASPR TRACIE. (2016). [Hurricane Resources at Your Fingertips.](#) U.S. Department of Health and Human Services, Assistant Secretary for Preparedness and Response.

This ASPR TRACIE document provides numerous hurricane-related resources applicable to a variety of stakeholders and audiences. It also includes multiple sections on lessons learned from various natural disasters.

ASPR TRACIE. (2019). [Lessons Learned from the Pulse Nightclub Shooting: An Interview with Staff from Orlando Regional Medical Center.](#)

ASPR TRACIE interviewed staff from Orlando Regional Medical Center three months after a gunman opened fire at the Pulse nightclub, killing 49 people and wounding at least 66. Trauma surgeons and the director of the hospital’s emergency preparedness program shared a comprehensive overview of the attack, including challenges encountered during the response and lessons learned.

ASPR TRACIE. (2017). [Major Hurricanes: Potential Public Health and Medical Implications.](#)

This ASPR TRACIE resource was developed to provide a short overview of the potential significant public health and medical response and recovery needs facing hurricane- and severe storm-affected areas, based on past experience and lessons learned from Hurricanes Katrina, Sandy, Harvey, and others.

ASPR TRACIE. (2018). [Natural Disasters Topic Collection](#).

The resources in this Topic Collection highlight lessons learned from recent events, communication tools and information, and checklists, plans, tools, and templates that can be modified to suit specific threats and needs. **NOTE:** Refer to the multiple Lessons Learned sections for a comprehensive and updated list of lessons learned specific to various natural disasters.

ASPR TRACIE. (2018). [The Exchange. Issue 7: Providing Healthcare During No-Notice Incidents](#).

This issue covers the challenges associated with providing care during no-notice incidents (e.g., mass shootings).

Centers for Disease Control and Prevention. (2006). [Hurricane Katrina After Action Report](#).

This AAR identifies the strengths and areas for improvement related to the all-hazards preparedness and response efforts by the Centers for Disease Control and Prevention specific to Hurricane Katrina in 2005.

Dorsey, D., Carlton, F., and Wilson, J. (2012). [The Mississippi Katrina Experience: Applying Lessons Learned to Augment Daily Operations in Disaster Preparation and Management](#). Southern Medical Journal. 106(1).

The authors share how lessons learned in patient movement and other planning and response capabilities have been incorporated since Hurricane Katrina struck the Gulf Coast. The authors highlight the development of Mississippi MED-COM, a statewide medical communications center, to serve as a “hub for patient coordination and movement during emergency incidents.”

Federal Emergency Management Agency. (2018). [2017 Hurricane Season FEMA After-Action Report](#).

The Federal Emergency Management Agency conducted an after-action review of the agency’s preparedness, response, and recovery operations following Hurricanes Harvey, Irma, and Maria in 2017.

Gray, B. (2006). [After Katrina: Hospitals in Hurricane Katrina; Challenges Facing Custodial Institutions in a Disaster](#). The Urban Institute.

This document discusses the challenges facing hospitals before, during, and after Hurricane Katrina.

Hick, J.L., Chipman, J., Loppnow, G., (2008). [Hospital Response to a Major Freeway Bridge Collapse](#). (Abstract only.) Disaster Medicine and Public Health Preparedness. 2: S11-S16.

The authors describe the hospital system response after the Interstate 35W bridge collapsed into the Mississippi River on August 1, 2007 in Minneapolis, MN. The incident resulted in 13 deaths and 127 injuries.

Lake, C. (2018). [A Day Like No Other – Case Study of the Las Vegas Mass Shooting](#). Nevada Hospital Association.

This report was written to help hospital, healthcare coalition, and emergency management planners learn more about the actions taken, lessons learned, observations and hospital experiences that occurred after the Las Vegas mass shooting. Information was collected through interviews, facilitated discussions, field trips and the state's InfoXChange program. The author also highlights planning, exercises, and updated assumptions "based on the changing world and social environment in which we now live."

Massachusetts Emergency Management Agency, Massachusetts Department of Public Health, City of Boston, et al. (2014). [After Action Report for the Response to the 2013 Boston Marathon Bombings](#).

This AAR describes the events related to response to the Boston Marathon Bombings and associated incidents. The report attempts to constructively evaluate and assess public safety, public health, and medical response actions with the goal of providing agencies and organizations involved in the incident with practical recommendations to address them. Unified command, multi-agency coordination, and use of the incident command system are recurring themes in the document.

National Emergency Management Association. (2006). [EMAC 2005 Hurricane Season AAR](#). (Users must click on the "download" box to unzip the report files.)

This AAR highlights strengths and lessons learned specific to response efforts conducted under the Emergency Management Assistance Compact during the 2005 hurricane season (including Hurricanes Katrina and Rita).

National Emergency Management Association. (2018). [EMAC Response to the 2017 Hurricane Season AAR](#).

This AAR provides strengths and lessons learned specific to response efforts conducted under the Emergency Management Assistance Compact during the 2017 hurricane season.

Orlando Health. (n.d.). [Orlando Health Disaster Response Project](#). (Accessed 8/8/2019.)

This website provides a brief video of interviews with various hospital staff members from Orlando Health who share their experiences following the June 12, 2016 Pulse

Nightclub shooting. It also includes lessons learned from administrators, physicians, nursing, and other support staff.

Porth, L. (2012). [Preparedness and Partnerships: Lessons Learned from the Missouri Disasters of 2011](#). Missouri Hospital Association.

This report describes response and recovery operations by several hospitals during the 2011 natural disasters in Missouri, with many implications for COOP planning. It summarizes lessons learned, with a focus on the Joplin tornado.

Redlener, I. and Reilly, M. (2012). [Lessons from Sandy — Preparing Health Systems for Future Disasters](#). National Center for Disaster Preparedness, Mailman School of Public Health, Columbia University, New York.

This article discusses lessons learned from the evacuation of two NYC area hospitals in response to Hurricane Sandy in 2012.

Reynolds, M. (n.d.). [The Joplin Tornado: The Hospital Story and Lessons Learned](#). (Accessed 8/8/2019.) Leading Age Missouri.

The speaker focused on four main areas: the impact of an unexpected natural disaster on healthcare services; how the nation responded to help the Joplin community; how to incorporate lessons learned into planning; and how to design enhancements that can protect against future incidents.

Stambaugh, H. and Cohen, H. (2007). [I-35W Bridge Collapse and Response](#). U.S. Department of Homeland Security, United States Fire Administration, National Fire Programs Division.

This report explains the response to the I-35W bridge collapse in Minneapolis (e.g., firefighting and rescue operations, perimeter control and security maintenance, fatality management, and handling hazardous materials). The authors also discuss how support was provided to families of the dead and how emergency management staff worked at the emergency operations center. The report includes best practices.

Straub, F., Jennings, C., and Gorban, B. (2018). [After-Action Review of the Orlando Fire Department Response to the Attack at Pulse Nightclub](#). The National Police Foundation.

This AAR was requested by the City of Orlando and the Orlando Fire Department (OFD). It describes OFD's level of preparedness for an incident such as this and details the response and recovery from the incident. The report also offers guidance and recommendations for fire and EMS providers to take into consideration. **NOTE:** This AAR is specific to the fire department; however, may provide useful information.

Texas Health and Human Services. (2018). [Texas Department of State Health Services Hurricane Harvey Response: After-Action Report](#).

This AAR provides a review of state-level public health and medical preparedness and response activities in Texas specific to Hurricane Harvey in 2017.

Texas Hospital Association. (2018). [Texas Hospital Association Hurricane Harvey Analysis](#).

The Texas Hospital Association met with hospital representatives and agency partners from areas affected by Hurricane Harvey to discuss experiences prior to, during, and after the storm. This document highlights identified areas for collaborative improvement for future disasters and outlines how to incorporate next steps.

Titan Systems Corporation. (n.d.). [Arlington County After-Action Report on the Response to the September 11 Terrorist Attack on the Pentagon](#). (Accessed 8/8/2019.)

This AAR describes the activities of Arlington County, VA and the supporting jurisdictions, government agencies, and other organizations in response to the September 11, 2001, terrorist attack on the Pentagon. It includes an entire section on hospitals and clinics.

VanDevanter, N., Raveis, V., Kovner, C., et al. (2017). [Challenges and Resources for Nurses Participating in a Hurricane Sandy Hospital Evacuation](#). *Journal of Nursing Scholarship*. 49(6): 635–643.

New York University’s Langone Medical Center had to be evacuated during Hurricane Sandy in 2012. The authors interviewed nurses to determine strengths and challenges associated with the evacuation and found that coworker support, leadership, and “personal resourcefulness” helped nurses respond. Challenges included limited prior disaster experience, training, and education, and the authors emphasize the need for more disaster-related education in schools of nursing.

Exercises

Health Care Association of New Jersey. (2012). [Project ESCAPE \(Evaluate Surge Capacity and Prioritized Evacuation\) Full Scale Exercise: After Action Report/Improvement Plan](#).

This AAR provides a summary of the Central West Medical Coordination Center regional mass casualty exercise. Organizers developed two objectives for this exercise: evaluate the ability to evacuate residents from a long-term care facility and evaluate medical surge into an acute care hospital. This document can also serve as a template for other community exercises.

II. Mass Gathering/ Special Events After Action Reports/ Lessons Learned

Real-Life Events

CNA. (2013). [Command, Control, and Coordination: A Quick-Look Analysis of the Charlotte-Mecklenburg Police Department's Operations during the 2012 Democratic National Convention](#). Bureau of Justice Assistance.

This report summarizes the events that occurred during the 2012 Democratic National Convention in Charlotte, NC. It identifies the strengths and areas for improvement that were demonstrated during the event. Section 2.8 specifically addresses the aspects of Fire and Public Health agencies.

CNA. (2013). Command, Control, and Coordination: [A Quick-Look Analysis of the Tampa Police Department's Operations During the 2012 Republican National Convention](#). Bureau of Justice Assistance.

This report summarizes the events that occurred during the 2012 Republican National Convention in Tampa, FL. It identifies the strengths and areas for improvement that were demonstrated during the event. Section 2.8 specifically addresses the roles of Fire/ Hazardous Materials (HAZMAT), Emergency Medical Services (EMS), Hospitals, and Public Health agencies.

Governor's Task Force on Public Safety Preparedness and Response to Civil Unrest. (2017). [Final Report and Recommendations](#).

This report describes the lessons learned after the 2017 Charlottesville, VA protests and provides recommendations related to preparedness, response, and other activities. **NOTE:** Appendix I includes the [Virginia's Response to the Unite the Right Rally After-Action Review](#) developed by the International Association of Chiefs of Police.

Hick, J.L., Frascione, R.J., Grimm, K., et al. (2009). [Health and Medical Preparedness and Response to the 2008 Republican National Convention](#). (Abstract only.) Disaster Medicine and Public Health Preparedness. 3(4):224-32.

The authors describe the health and medical planning for and impact of the Republican National Convention on the City of St. Paul and the Minneapolis-St. Paul metropolitan area.

Hunton & Williams LLP. (2017). [Final Report Independent Review of the 2017 Protest Events in Charlottesville, Virginia](#).

This report describes the actions that took place by various agencies during the 2017 Charlottesville, VA protest events. **NOTE:** Page 105 provides lessons learned from the

University of Virginia (UVA) Medical Center and experiences noted from an interview with the Director of Emergency Management at UVA Health Systems.

National Capital Region. (2009). [2009 Presidential Inauguration January 17 21: Regional After-Action Report Summary](#).

This AAR summarizes the events that occurred during the January 20, 2009 Presidential inauguration of Barack Obama. It identifies the strengths (including several coalition activities and the use of the Health Emergency Coordination Center) and areas for improvement that were demonstrated during the event.

Serino, R. (n.d.). [Democratic National Convention After Action Briefing](#). (Accessed 8/8/2019.)

This presentation is an EMS after action briefing on the Democratic National Convention held in Boston, MA in July 2004. It provides an overview of EMS roles and responsibilities during the convention, and identifies lessons learned.

III. Specific Hazards-Related After Action Reports/ Lessons Learned

Real-Life Events

Van Sickle, D., Wenck, M., Belflower, A., et al. (2009). [Acute Health Effects After Exposure to Chlorine Gas Released After a Train Derailment](#). The American Journal of Emergency Medicine.

The authors discuss findings from a review of medical records and autopsy reports to describe the clinical presentation, hospital course, and pathology observed in persons hospitalized or deceased as a result of chlorine gas exposure after a train derailment in 2005.

Exercises

Wisconsin Department of Health Services. (n.d.). [Homeland Security Exercise and Evaluation Program \(HSEEP\) for Hospitals Training](#). (Accessed 8/8/2019.)

This website provides an overview of the Homeland Security Exercise and Evaluation Program (HSEEP), guidance on how to write exercise objectives, a checklist on completing exercise design, guidance on how to develop an exercise scenario and Master Scenario Events List, and examples/ templates of After Action Reports and Improvement Plans. **NOTE:** An example AAR is located under Lesson 7 and is related to a chemical decontamination exercise.