ASPR TRACIE Technical Assistance Request

Request Receipt Date (by ASPR TRACIE): 29 December 2016
Response Date: 12 January 2017; updated 21 June 2024
Type of TA Request: Standard

Request:

The requestor asked if ASPR TRACIE had After Action Reports (AARs) or lessons learned on any scenario to include both simulations/ exercises and real-life events (e.g., Hurricane Sandy).

Response:

ASPR TRACIE conducted a search for relevant resources, including those contained in the ASPR TRACIE Exercise Program Topic Collection, among several other Topic Collections. We also conducted a search online for additional materials. We identified several AARs and lessons learned resources from real-life events and exercises, and from the hospital/health system perspective. Resources gathered are organized in the following sections:

Section I – Mass Casualty-Related After Action Reports
Section II – Mass Gathering/ Special Events After Action Reports
Section III – Medical Countermeasures (MCM) Exercise After Action Reports
Section IV – Specific Hazards-Related After Action Reports
Section V – Natural Disasters After Action Reports and Lessons Learned

I. Mass Casualty-Related After Action Reports

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. (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. (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).

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 Mass Care Council. (2015). Critical Mass 2015: National Mass Care Exercise; Mass Care/Emergency Assistance After-Action Report.

This AAR provides a summary of outcomes related to the conduct of the 2015 National Mass Care Exercise held in Austin, Texas. The report also provides a synthesis of comments provided by participants during the hotwash at the conclusion of the exercise.

National Mass Care Council. (2013). National Mass Care Exercise 2013: After Action Report.

This document is the AAR for the 2013 National Mass Care Exercise, which was conducted May 20-23, 2013, in Tallahassee, Florida, in conjunction with the 2013 Florida Statewide Hurricanes "Kirk and Lay" Exercise. The scenario included two hurricanes and hazardous materials events impacting densely populated counties in Florida. It gave participants an opportunity to test feeding and sheltering coordination in a triple impact event with high population density, large damage amounts, and significant logistics complexities.

Northwest Healthcare Response Network. (2018). Regional Surge and Regional Surge Squared Functional Exercises: After Action Report (AAR)/ Improvement Plan (IP).

This After-Action Report/ Improvement Plan (AAR/IP) clearly describes the scenario, objectives, and outcomes from a full-scale exercise conducted in 2017 to test surge capacity and associated regional coordination among partners in the Northwest Healthcare Response Network, in coordination with the National Disaster Medical System. It may be referenced by other coalitions and/or facilities to develop their own respective AARs, as well as to develop scenarios and objectives for similar exercises.

Orlando Health. (n.d.). Orlando Health Disaster Response Project. (Accessed 6/212024.)

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.

Region 9 Healthcare Coalition. (2017). After-Action Report/Improvement Plan for: Region 9 Healthcare Coalition Evacuation Situational Awareness Exercise: Northern Sub-Region. Spokane Regional Health District.

This intent of the exercise was to evaluate three objectives related to patient placement, patient transportation, and situational awareness during a hospital evacuation exercise utilizing a regional coordination element. This document summarizes the exercise strengths and areas for improvement.

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 deceased 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.

II. Mass Gathering/ Special Events After Action Reports

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., Frascone, 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 6/21/2024.)

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. Medical Countermeasures Exercise After Action Reports

ASPR TRACIE. (2024). Mass Distribution and Dispensing/Administration of Medical Countermeasures Topic Collection.

The resources in this Topic Collection provides links to federal, state, local, and tribal programs and resources, lessons learned, plans, tools, and templates, courses, and guidance that can help planners address the need to effectively distribute and administer MCMs to a large number of persons in a short period of time. **NOTE:** Refer to the multiple Lessons Learned sections for a comprehensive and updated list of lessons learned specific to various MCM.

Buncombe County Health Center. (2008). Western North Carolina Strategic National Stockpile Local Receiving Site Regional Full Scale Exercise: After Action Report.

This resource is an AAR/ Improvement Plan (IP) for a pandemic influenza full-scale exercise including the Joint Information Center, with four functional tabletop exercises

occurring simultaneously. The exercise was designed and conducted to test the deployment of the Strategic National Stockpile from the Receipt, Stage, and Store warehouse to the chosen Local Receiving Sites in Buncombe County.

San Francisco Department of Public Health, Charles Schwab & Co., Inc., and San Francisco Department of Emergency Management. (2007). 2007 Mass Antibiotic Dispensing Exercise (MADE07) After Action Report.

This after-action (AAR) report describes a full-scale exercise developed to test the capability of San Francisco Department of Public Health's (SFDPH) plan for rapid mass prophylaxis dispensing in an outdoor aerosolized anthrax release scenario. Pediatric issues (e.g., medication dispensing) are addressed throughout the AAR.

SouthEast Texas Regional Advisory Council (SETRAC). (2013). Regional Allocation, Distribution, and Dispensing Strategic National Stockpile Full Scale Exercise.

The 2013 Regional Allocation, Distribution, and Dispensing (RADD) Strategic National Stockpile (SNS) full scale exercise assessed the abilities of member jurisdictions within the Texas Department of State Health Services Health Service Region 6/5 South and other participating jurisdictions to facilitate intelligence and information sharing; activate the receiving, staging, storing (RSS) site and distribute SNS resources; coordinate region-wide mass prophylaxis operations with Points of Dispensing Sites (PODs); and coordinate public information. **NOTE**: This AAR is not publically available. For a copy of complete AAR, contact SETRAC staff at (281) 822-4444.

IV. Specific Hazards-Related After Action Reports

Chamberlin, M., Okunogbe, A., Moore, M., and Abir, M. (2015). Intra-Action Report A Dynamic Tool for Emergency Managers and Policymakers. RAND Corporation.

The authors coined the term "Intra-Action Report" and tracked and shared the challenges, successes, and lessons being learned and applied during the 2014 response to Ebola.

Markham, P., Gianato, J., and Hoyer, J. (2015). After Action Review: Emergency Response to January 9, 2014 Freedom Industries Chemical Leak. U.S. Department of Health and Human Services.

Several local health departments participated in a review of the response to the 2014 methanol spill. Interagency communications and public risk communications were listed as challenges, and participants shared that, for example, flushing recommendations were not practical for hospitals (they suggested that in future incidents, hospitals be treated as separate from the business community.)

National Association of State EMS Officials. (2015). NASEMSO After Action Review: Lessons Learned, Best Practices and Recommendations - Ebola Disease Outbreak.

NASEMSO's Domestic Preparedness Committee prepared this document to highlight critical dates during the Ebola outbreak, provide background information on the disease, describe lessons learned from the response, identify best practices, and recommend actions to federal partners.

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.

Wisconsin Department of Health Services. (n.d.). Homeland Security Exercise and Evaluation Program (HSEEP) for Hospitals Training. (Accessed 10/14/2015.)

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 AARs/ IPs. **NOTE**: An example AAR is located under Lesson 7 and is related to a chemical decontamination exercise.

V. Natural Disasters After Action Reports and Lessons Learned

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. (2024). Climate Change and Healthcare System Considerations Topic Collection.

The resources in this Topic Collection highlight planning considerations, educational and planning resources, and lessons learned from a variety of natural and human-caused disasters and provide guidance for healthcare practitioners who are committed to

addressing climate change and the impacts on healthcare systems. **NOTE:** Refer to the Lessons Learned section for a list of lessons learned specific to climate change.

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. (2024). Healthcare Facility Extreme Weather Resilience and Mitigation.

Speakers from the Office of Climate Change and Health Equity, NYU Langone Medicine, and Mass General Brigham discuss strategies for incorporating lessons from past disasters in the design/retrofitting of climate resilient healthcare facilities.

ASPR TRACIE. (2022). 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. (2022). 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. (2022). 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.

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.

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.

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 continuity of operations 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.

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.

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.