

ASPR TRACIE Technical Assistance Request

Requestor:

Requestor Phone:

Requestor Email:

Request Receipt Date (by ASPR TRACIE): 13 March 2017

Response Date: 16 March 2017

Type of TA Request: Standard

Request:

A request was received by the [REDACTED] asking for a list of supplies necessary to have available to deal with various mass casualty events (e.g., traumatic, burns, explosions, medical/infectious).

Response:

The ASPR TRACIE Team conducted a search for disaster supplies for various mass casualty events. In Section I, we include comments and research conducted for a similar technical assistance request asking for guidance on hospital disaster stockpiles. Section II includes additional information on mass casualty supplies.

Additionally, please see the following applicable ASPR TRACIE resources that may have additional helpful information/ resources:

- [Burn Topic Collection](#)
- [Explosives and Mass Shooting Topic Collection](#)
- [Fatality Management Topic Collection](#)
- [Mass Gatherings/ Special Events](#)
- [Natural Disasters](#)
- [Pharmacy Topic Collection](#)
- [Radiological and Nuclear Topic Collection](#)
- [VHF/Ebola Topic Collection](#)
- [Zika Topic Collection](#)

1. Hospital Disaster Stockpiles

1.1. ASPR TRACIE SME Cadre Comments/ Recommendations

- General guidance:
 - The planning for supplies needs to include both illnesses and injuries.
 - It is easier to calculate pharmaceuticals in terms of doses versus cases.
- For stockpiling disaster supplies:
 - The rule of thumb for hospital normal use is 96 hours and we typically add 20% surge use on top of that.

- How much of one item is stockpiled depends on the material being stockpiled. Should know what the hospital uses on a daily basis, so during an emergency, ensure you have a stockpile of 3-4 days' worth of those items used daily/regularly. Need to factor supply chain disruption, and other local stockpiles that can be used such as from the healthcare coalition (if applicable), state cache, other local caches from partner agencies, etc.
- Disaster supplies to add to the list for hospitals:
 - Disposable BP cuffs (to reduce infectious disease or biohazard transmission)
 - OCL splinting supplies (including aces)
 - At least two cooximeters to each potential treatment site. These are devices that can be used to measure oxygen saturation and also test for carbon monoxide (CO) exposure. When generators are used (common after disaster events with power loss), there can be mass fatalities and injuries from inappropriate use. A cooximeter can provide immediate recognition for such exposures.
 - Oxygen manifold kits- each kit can provide oxygen to 8 patients at once or can provide oxygen to a ventilator.
 - Tourniquets (Combat Army Tourniquets, not lab tourniquets), Quik Clot Gauze (or equivalent) and Trauma Pads (larger, thicker gauze pads)

1.2. Hospital Stockpiling and Disaster Supplies

Adida, E , DeLaurentis, P. and Lawley, M. (2011). [Hospital stockpiling for disaster planning](#). IIE Transactions, 43: 5, 348-362

The authors explore the issue with determining the stockpile quantity of a medical item at several hospitals. A game-theoretic framework is used to try and estimate how much each hospital would stockpile in a decentralized setting when minimizing its total cost. The following research questions are answered: What will be the hospital stockpile decisions in a decentralized and centralized decision-making settings? What are the public policy implications provided by the analytical solutions?

Association for Healthcare Resource and Materials Management, Health Industry Distributors Association, and Health Industry Group Purchasing Association. (n.d.). [Medical-Surgical Supply Formulary by Disaster Scenario](#).

This document provides seven formularies and a staff formulary for medical/surgical supplies for hospitals during a large scale CBRNE or natural disaster. The core formulary has the basic supplies needed for each adult casualty in any type of disaster scenario. There is also a pediatrics formulary and formularies that are supplemental to the core or pediatric formularies and are disaster specific.

California Department of Health Services. (n.d.) [Development of Standards and Guidelines for Healthcare Surge during Emergencies- Supplies, Pharmaceuticals, and Equipment](#).

This document includes the following: process for acquisition of supplies, pharmaceuticals, and equipment through conventional and unconventional sources to

include guidance on types and quantities needed during surge; storage considerations; and staging and distribution, including liability, licensing, and regulatory implications. Tool 3 on page 42 includes a detailed list of supplies and equipment that may be required during a surge.

California Hospital Association. (n.d.). [Emergency Preparedness: Preparing Hospitals for Disasters](#).

This website includes many useful resources related to hospital preparedness planning.

California Hospital Association. (2011). [Guidelines for Developing Best Practices to Assist California Hospitals in Preparing for and Responding to a Water Disruption](#).

These draft best practices are for California hospitals to use for water disruption planning activities. Additional documents are available at <http://www.calhospitalprepare.org/loss-utilities-services>.

California Hospital Association. (n.d.). [Hospital Emergency Food Supply Planning Guidance and Toolkit](#).

This toolkit provides general guidance to hospitals in planning for and documenting emergency food supplies as mandated by regulatory requirements. It includes the emergency food guidance document, a food planning calculation tool, PowerPoint, and video presentation.

Centers for Disease Control and Prevention and American Water Works Association. (2012). [Emergency water supply planning guide for hospitals and health care facilities](#). US Department of Health and Human Services.

This guidance document provides a four step process for the development of an Emergency Water Supply Plan.

DeLaurentis P., Adida, E., Lawley, M.. (2009). [Hospital Stockpiling for Influenza Pandemics with Pre-Determined Response Levels](#). Purdue University.

The authors review a regional network of hospitals that have mutual aid agreements to borrow or lend supplies from each other during a medical emergency to determine issues related to hospital stockpiling of critical supplies during influenza pandemic.

Duncan, E., Colver, K., Dougall, N., et al. (2014). [Consensus on items and quantities of clinical equipment required to deal with a mass casualties big bang incident: a national Delphi study](#). BMC Emergency Medicine. 14:5.

This paper provides the results of a study aimed at developing expert consensus opinion of the essential items and minimum quantities of clinical equipment required to treat 100 people at the scene of a mass casualty event.

Einav, S., Hick, J.L., Hanfling, D., Erstad, B., Toner, E., Branson, R. Kanter, R., Kissoon, N., Dichter, J., Devereaux, A., and Christian, M.D. (2014). [Surge Capacity Logistics: Care of the Critically Ill and Injured During Pandemics and Disasters: CHEST Consensus Statement](#). Chest. 146(4_suppl):e17S-e43S.

The authors list 22 suggestions specific to surge capacity and mass critical care under the following topics: stockpiling of equipment, supplies, and pharmaceuticals; staff preparation and organization; patient flow and distribution; deployable critical care services; and using transportation assets to support surge response.

Halyard Health. (n.d.). [Pandemic Planning](#).

This website provides a PPE Stockpile Calculator and list of consumable and durable resources.

Hick, John. (n.d.). Pharmacy Disaster Workshop. Minnesota Department of Health. (See Attached).

This planning worksheet was used by the Minnesota Department of Health to determine the drug and pharmaceutical supplies needed for their hospitals. It includes a questionnaire for the planning phase and a list of required resources.

Hick, John. (2008). Sample Medical/ Surgical and PPE Supplies by Disaster Types & Category of Hospital Emergency Services. Minnesota Department of Health. (See Attached).

This planning tool provides guidance for hospitals on supplies they should have available based on different types of disasters: trauma, biologic, chemical, radiologic, and pediatric. The guidance is provided for hospital categories 1-4. Also includes core disaster formulary, pediatric formulary, and pediatric-specific emergency supply list.

Occupational Safety & Health Administration. (n.d.). [Proposed Guidance on Workplace Stockpiling of Respirators and Facemasks for Pandemic Influenza](#).

This is appendix to the Department of Labor and Department of Health and Human Services' Guidance on Preparing Workforce for an Influenza Pandemic (2007). This document provides a table on advantages and disadvantages of respirators and facemasks, stockpiling estimates for respirators and facemasks, stockpile estimates for patients, and calculations for usage.

State of Louisiana, Department of Health and Hospitals. (2008). [HRSA Pharmaceutical Allocation](#).

This letter from the Pharmacy Director of DHH/Office of Public Health to Hospital Pharmacy Directors includes a calculation of the amount of antibiotic doses to be purchased to ensure they are readily available for patients, staff, and household contacts. It also includes a list of medications that should be considered by facilities.

US Department of Health and Human Services. (n.d.). [HHS Guidelines on Federal and State Stockpiles of Critical Medical Supplies for an Influenza Pandemic](#).

Recommendations provided by HHS for ventilator and ancillary supply list, PPE and infection control supplies for healthcare delivery sites and general work sites, and PPE and infection control supplies for mortuary services.

US Department of the Interior. (n.d.). [Worksheet for Calculating Stockpiling Needs for Pandemic Influenza](#).

This Excel worksheet calculates needed antiviral regimens, N-95s, and surgical masks based on the risk of an employee to be exposed to influenza virus.

US Department of Veterans Affairs. (2009). [VA Financial Policies and Procedures Stockpile Materials](#). Volume V- Chapter 8B.

This guidance document describes the accounting policies and procedures for VA stockpile materials. Materials include caches of pharmaceuticals and medical supplies reserved for treatment of casualties from a mass destruction event. It includes the public laws and authorities governing the implementation and maintenance of emergency stockpiles.

World Health Organization. (2013). [How much water is needed in emergencies](#).

This document outlines the minimum quantities of water that are required for survival in emergencies. It includes a hierarchy of water requirements for short, medium, and long-term; minimum emergency water quantities for non-domestic use; and calculating water demand.

2. Mass Casualty Supplies General Resources

Bohn, D., Kanter, R., et al. (2011). [Supplies and Equipment for Pediatric Emergency Mass Critical Care](#). Pediatric Critical Care Medicine Vol 12, No 6.

This article provides findings from the Task Force for Mass Critical Care specifically for equipment and supplies that would be required during a pediatric mass critical care crisis.

FEMA. (2012). [Operational Templates and Guidance for EMS Mass Incident Deployment](#).

This guidance includes specific mass care coordination recommendations for different types of events such as county fairs, large college sporting events, and weather related disaster declarations. It also includes case studies and guidance for mass gatherings. Sample list of supplies can be found under each mass care scenario.

Florida Department of Health. (n.d.). [Hospital Medical Surge Planning for Mass Casualty Incidents](#).

This document provides planning recommendations for mass casualty incidents related to hospital and healthcare facility planning. Starting on page 12, the tables provide a list of staffing and supply needs based on percentage of casualties.

Florida Department of Health. (n.d.). [Mass Casualty Incident Equipment Supplies List](#).

This purpose of this document is to provide guidance on purchasing requirements for mass casualty incidents. The list starting on page 3 includes the required minimum items to be purchased by hospitals based on number of beds.

Foothills Regional Emergency Medical and Trauma Advisory Council. (2014). [Regional Multiple Casualty Incident Plan](#).

This plan provides a list of minimum MCI cache inventory starting on page 37.

Napa County EMS Medical Response System. (2013). [Mass Casualty Incident Management Plan](#).

This mass casualty management plan includes a medical cache trailer inventory checklist on page 48 and numerous job action sheets.

Puget Sound Region. (2014). [Pre-Hospital Emergency Triage and Treatment Annex](#).

This plan provides a regional cache inventory list starting on page 73.