

ASPR TRACIE Technical Assistance Request

Requestor:

Requestor Phone:

Requestor Email:

Request Receipt Date (by ASPR TRACIE): 17 June 2016

Response Date: 6 July 2016

Type of TA Request: Standard

Request:

██████████ healthcare coalition is developing a uniform regional healthcare disaster equipment/supply list for their acute care hospitals. They are focusing on general/basic acute care supplies/equipment that each hospital should have on hand to respond to a patient surge from a planned or unplanned event. They are seeking any published literature on best practices and/or recommended healthcare supply/equipment item, including formulas for determining recommended quantities.

Response:

The ASPR TRACIE Team conducted a search on guidance and best practices regarding hospital and healthcare supplies/ stockpiles. In addition, we requested recommendations from the ASPR TRACIE Subject Matter Expert (SME) Cadre members. Their general responses are included in Section I below. Our findings for general guidance, plans, and formulas for determining recommended quantities for supplies can be found in Section II.

I. 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)

II. 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?

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.). Drug and Pharmaceutical Supplies. 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 Facemaks 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.