Attachment 7: Stockpile Notable Practices Report

The following content was originally developed for a BA UASI member jurisdiction and then edited to be applicable for all jurisdictions in the region.

Overview

The Stockpile Notable Practice report compiles important practices and lessons learned related to stockpile and warehouse management at the jurisdictional level before, during, and after disasters. These practices are not labeled as “best practices” due to the preliminary stages of evaluation following the pandemic and nuances related to jurisdictional application of the practices. A longer-term evaluation would be needed to identify best practices for a wide range of jurisdictions.

Methodology

Notable practices and lessons learned were identified via publicly available literature from the federal, state, local, and private sectors. Four Subject Matter Experts (SMEs) were also interviewed to discuss their practices and experiences with stockpiles and warehouse operations. Lastly, identified practices and lessons learned were included from the BA UASI Regionwide COVID-19 AAR’s small group interview about warehousing and supply chain.

Summary of Findings

The identified practices were organized into five categories: Plans and Processes, Warehouse Operations, Inventory Management System (IMS), Training and Exercises, and Pharmaceuticals. Plans and Processes highlighted alternative options for the main elements of stockpile operations – including multiple warehouse options. Warehouse access might be cut off or supplies might be destroyed in a disaster. A notable lesson learned that described by multiple SMEs was that plans often focus on the last emergency and will need to be adapted or new plans will need to be created entirely during emergencies.

The literature review and interviews indicated that there were characteristics within a warehouse which will allow for more efficient operations, such as additional space for receiving, reorganizing, and distributing inventory as it is received. This is because inventory may need to be distributed almost as soon as it is received instead of storing it within the warehouse. A key lesson learned during COVID-19 was the volume of requests and inventory received exceeded previous planning assumptions.

The IMS and Training and Exercises categories had a similar lesson learned that emphasized the need for regular training and practice for successful operations during an emergency. Because IMS software can be complicated and updated regularly, training a staff member on one of these systems often requires retraining or frequent use.

Lastly, pharmaceuticals focused on having a stock rotation plan in place to prevent expiration and medical waste. COVID-19 demonstrated the need for additional considerations for medical countermeasures such as cold chain logistics and climate-controlled warehouses.

Summary Table

Category	Notable Practice
Plans and Processes	Identify additional warehouse and transportation options throughout the jurisdiction as backups.
	Update emergency plans to follow day-to-day warehouse operations for stock rotations, after-hours access, security etc. and conduct exercises with local warehousing vendors.
	Review current MOUs and revise to be more specific, to include policies for prioritization against competitors, after-hours requests, audits, and stockpile rotation as well as driver and equipment availability.
	Engage private sector and hospitals/healthcare to provide input on the local stockpile contents.
Warehouse Operations	Consider investing in additional technology to streamline rapid documentation of new inventory, such as scanners.
	Engage private and community partners to identify local means of possible alternative warehouse space and especially cold-chain storage options.
	Evaluate and document warehouse sites against capabilities and throughput requirements. Each site may have pros and cons which may allow for crossdocking, loading docks, and turnaround space for trucks.
	Implement an inventory system which is organized by response type or inventory type and accounts for some of the lessons contained herein.
Inventory Management Systems (IMS)	Excel and manual processes will be needed in an emergency and for redundancy – have a plan in place.
	COVID-19 Lesson Learned: Several warehouse operations were working on a new IMS before COVID and abandoned those efforts after the pandemic because it would not meet their new needs.
	Consider a full-time warehouse manager fully trained on the IMS who is able to provide regular IMS training to designated representatives in the jurisdiction for surge capacity.
	Key IMS capabilities – offline functionality and automation.
Training and Exercises	Exercise your warehouse from start to finish.
	Training and Exercises build familiarity.

Category	Notable Practice
Pharmaceuticals	A climate-controlled warehouse is critical for the storage of pharmaceuticals and cold chain logistics.
	Describe the purpose and goals of the pharmaceutical stockpile in your planning documents.
	2–5-year stock rotation plans can be expensive and challenging, consider engaging in a stock rotation contract.
	The Emergency Prescription Assistance Program (EPAP) can alleviate some pressure on stockpiles to have commonly prescribed pharmaceuticals for citizens.

Category: Plans and Processes

Identify additional warehouse and transportation options throughout the jurisdiction as backups.

These additional options may be necessary due to the volume of inventory being received, supply chain impacts, geographic impact of the emergency, or additional requirements that impact operations that could not be anticipated ahead of time. The alternative options should be rapidly executable to include 24/7 points of contact for each option. Options should consider both public and private partners.

The CDC's City Readiness Initiative recommends identifying multiple warehousing options and Butte County experienced first-hand the importance of this. During the Oroville Dam Spillway Emergency, members of the Health Department were unable to access their warehouse for 3 days. During the 2018 Camp Fire, the medical infrastructure in Paradise was destroyed including trailers holding supplies.

Update emergency plans to follow day-to-day warehouse operations for stock rotations, after-hours access, security etc. and conduct exercises with local warehousing vendors.

Exercises, stock rotations, after-hours access, and security are all examples of plans and processes that are used daily and should not be different during emergencies. In Butte County, they used smaller responses to activate and exercise their warehouse. This allowed them to improve their inventory, process, and increase familiarity for staff. Prior to emergencies, defining parameters and permissible adjustments will lower risk and allow staff to rapidly create new plans and processes when needed during an emergency.

Plans will be important, but the actual demands of the response will dictate significant adjustments to pre-disaster plans, collaborative problem solving and willingness to act based on less than full information. For example, the Disaster Service Worker program is a critical asset but may not always meet personnel needs in large scale emergencies. One solution during the pandemic was contracted staffing.

Review current MOUs and revise to be more specific, to include policies for prioritization against competitors, after-hours requests, audits, and stockpile rotation as well as driver and equipment availability.

When engaging private sector partners, specificity is needed because their processes may be different. For example, a contractor should know what documentation and accountability is needed for inventory recording. The contract should also describe access to the facility and work area, points of contact, documentation requirements, IMS, security, special handling requirements, and rapid adjudication of issues related to performance.

Engage private sector and hospitals/healthcare to provide input on the local stockpile contents.

During emergencies, the goal then becomes for local and regional stockpiles to keep their health systems up and running. While most knew that personal protective equipment (PPE) could expire, it was not a common planning assumption for scenarios which involved large-scale PPE demand. During the pandemic, strategies and adjustments were made to account for the use of expired PPE such as facemasks, gowns, and gloves. Hospitals often have their own specific requirements for PPE as well, which need to be identified ahead of time to ensure stockpiles contain PPE types which will be acceptable to hospital staff. Communicating with local healthcare systems will ensure a more suitable stockpile of PPE and ensure stockpiles have the appropriate equipment for their jurisdiction.

In the initial response to the COVID-19 Pandemic, public agencies were not always able to fulfill resource requests. Private partners may have the ability to fulfill the request and often were able to come up with innovative solutions to supply chain issues during the COVID-19 Pandemic. This should not just apply to warehousing but also staffing, drivers, and other warehouse functions. CBOs and private sector partners helped to manufacture PPE supplies as well. In addition, public agencies found themselves competing against each other for scarce resources. Regional or state purchasing plans can alleviate the competition and appropriately distribute scarce resources.

Category: Warehouse Operations

Consider investing in additional technology to streamline rapid documentation of new inventory, such as scanners.

Inventory accuracy will likely be sacrificed in the initial stages of an emergency. This is because the need to get the inventory to those who need it outweighs the necessity of completeness and total accuracy. Tools such as barcode scanners and an IMS that can incorporate scans can alleviate some inventory issues. One critical aspect of the rapid turnaround is being able to secure inventory documentation as trucks are unloaded, pallets are rearranged or broken down, and inventory is distributed.

Engage private and community partners to identify local means of possible alternative warehouse space and especially cold-chain storage options.

Many agencies were forced to find additional warehouse space once they realized the volume of supplies they were receiving from the state and federal government. A common solution was leasing space from private or community-based partners. In addition, the supplies being received sometimes required cold chain logistics, or were products and supplies that warehouse staff did not have familiarity. Often their IMS could not track all the necessary information required for the new items – such as lot numbers for pharmaceuticals.

Evaluate and document warehouse sites against capabilities and throughput requirements. Each site may have pros and cons which may allow for crossdocking, loading docks, and turnaround space for trucks.

The California Department of Public Health (CDPH) will use crossdocking procedures to quickly route trucks to local stockpiles. In California, local stockpiles should expect to receive a 12-hour push package from the Strategic National Stockpile (SNS) within 6 to 10 hours. In order to rapidly distribute the supplies being received, warehouses should have adequate space for the physical rotation of inventory, staging of pallets, and reorganizing the inventory received.

The SNS trucks will likely need to be able to turn around and back up to a loading dock. The SNS trucks do not have liftgates so local warehouses will need the means to unload the trucks in an efficient manner. In addition, warehouses should have at least 2-3 loading docks because initial push will likely be delivered by 2 trucks. This will also facilitate quickly unloading inventory and loading it into another truck for distribution.

Implement a new inventory management tool which is organized by response type or inventory type and accounts for some of the lessons contained herein.

The private sector identifies categorizing and organizing your inventory as notable practice. This can be accomplished by local warehouses by categorizing their inventory by response type or by inventory type. In addition, full annual inventories, and cycle counting are the common practices for maintaining an accurate inventory. Combining those systems with “First in, First out”[1] will ensure that the inventory is accurate and minimizes expired supplies.

Category: Inventory Management Systems (IMS)

Excel and manual processes will be needed in an emergency and for redundancy – have a plan in place.

Excel is straightforward to teach and works without internet making it a great backup system. In addition, your current IMS may not account for unidentified future needs. Because excel may be used, having a plan in place to use it will be necessary. There are a couple of factors to consider, such as document sharing capabilities and how the data is imported into an IMS or shared with other jurisdictions.

[1] First in, First Out – is an inventory process where the oldest inventory (first in) is distributed before older inventory. The inventory should be organized where the older products are the closest to the staff filling the requests.

COVID-19 Lesson Learned: Several warehouse operations were working on a new IMS before COVID and abandoned those efforts after the pandemic because it would not meet their new needs.

During the COVID-19 Pandemic, several agencies reverted to excel when they found their IMS could not meet the needs. In addition, many were exploring new IMS before the pandemic and eventually abandoned that system due to new needs identified during the pandemic. Some of the newly identified needs were accounting for pharmaceutical information, viral media, and providing a live report or dashboard to be share with the public or other agencies.

Consider a full-time warehouse manager fully trained on the IMS who is able to provide regular IMS training to designated representatives in the jurisdiction for surge capacity.

Anyone who has the possibility of assisting warehouse, logistics, or stockpile operations should be trained on the IMS and it should be refreshed regularly. Many IMS systems are not intuitive and will be difficult to use if not exercised often. An alternative solution would be to train a staff member to be a just-in-time trainer. That staff member can train new staff members or volunteers and provide refresher training for previously trained staff.

Key IMS capabilities – offline functionality and automation.

IMS should have the ability to continue operations even if electrical power or internet connectivity is unavailable, which in some instances could last for an extended period. In addition, the IMS should automate as much of the warehouse process as possible by incorporating barcode scanners, notification of inventory expiration, resource requesting, ordering, dashboards, etc. These will limit human error and provide an operationally efficient inventory.

Category: Training and Exercises

Exercise your warehouse from start to finish.

Similarly to using the same plans for daily operations as in an emergency, warehouses should be exercised through the whole activation life cycle. To accomplish the full life cycle, exercises can be completed over multiple days allowing for normal operations to continue. Exercises should also include partners and contractors. No notice activations, although difficult to execute, should be attempted to the best of the warehouse's ability. If needed the California Department of Public Health can provide "Eagle" materials to simulate SNS shipments.

Training and Exercises build familiarity.

Frequent training and exercises familiarize staff with their roles and how they fit during an emergency. Exercising the warehouse also builds capacity to handle larger and more complicated emergencies. In Butte County, they used smaller events such as wildfires to review and improve their plans and procedures.

Category: Pharmaceuticals

A climate-controlled warehouse is critical for the storage of pharmaceuticals and cold chain logistics.

Climate-controlled warehouses are critical for pharmaceuticals and vaccines. This includes having backup generators capable of maintaining the temperature with only brief deviations. There should be intermediary storage options such as refrigerators or coolers in the warehouse as well. Of note, CDC will ship most SNS products requiring cold chain management in Endurotherm boxes.

Describe the purpose and goals of the pharmaceutical stockpile in your planning documents.

Describing the purpose and goal of the pharmaceuticals in the stockpile assists in identifying what pharmaceuticals to include and how much. Common strategies include complementing the 12-hour Push Package from the SNS, identifying a specific population such as first responders, or applying a percentage to the overall population. Both the CDC City Readiness Initiative and *Receiving Distributing and Dispensing Strategic National Stockpile Assets A Guide to Preparedness Version 11* acknowledge stockpiling for first responders as a viable option. IMS should also pre-designate possible categories and scenarios for activation of certain pharmaceuticals (e.g., shelter activations, wildfire response, flooding, pandemic, etc.).

2–5-year stock rotation plans can be expensive and challenging, consider engaging in a stock rotation contract.

Maintaining a pharmaceutical stockpile can be expensive and challenging because of the quick expiration and frequency of use. In addition, partnering with small pharmacies is a challenge because of the large quantities of pharmaceuticals in a stockpile will likely exceed the turn rates of the pharmacy. One common suggestion is to engage a pharmaceutical distributor or wholesaler in a stock rotation contract. Then medications within the stockpile nearing expiration would be rotated out and new medications would then replace the older ones. Without this or similar procedure in place, expired medications will simply have to be discarded and new ones will need to be re-purchased. If a stock rotation contract is not possible then a contract should be in place for destruction of pharmaceuticals. Occasionally, reverse distributors can reimburse the jurisdiction for certain pharmaceuticals. One suggestion worth exploring more in depth would be to engage a wholesaler in a cache/stockpile maintained by the wholesaler with quick distribution to the jurisdiction during an emergency.

The Emergency Prescription Assistance Program (EPAP) can alleviate some pressure on stockpiles to have commonly prescribed pharmaceuticals for citizens.

During the 2018 Camp Fire in Butte County, medical infrastructure was destroyed including pharmacies and the capability to write prescriptions. In extreme situations such as the Camp Fire, the federal government has the EPAP to assist citizens in getting access to their needed pharmaceuticals. This will likely alleviate some of the need for stockpiling of common pharmaceuticals in local warehouses. In addition, some notable practices during the fire were

having the County Health Officer review and write prescriptions and having standing orders for certain medicines where nurses could write prescriptions.

Conclusion

The notable practices and lessons learned were gathered from local, state, and federal sources; four SME interviews, and the COVID-19 AAR small group interview. Within the practices there were many common threads such as having a flexible plan, creating redundancies, training, and practicing stockpile and warehouse operations. Although further study and longer-term application is needed to label these as best practices, the pandemic further emphasized these practices as many agencies were forced to create new plans, rely on different systems, and faced the challenges of scare resources. As stated by one SME, “plans will be important, but the actual demands of the response will dictate significant adjustments to pre-disaster plans, so collaborative problem solving and willingness to act based on less than full information is as important as plans.”

Attachment 8: Resource Typing Guidance Disaster Mental/Behavioral Health and Spiritual Care

The following is a reproduction of introduction to California Emergency Medical Services Authority (Cal EMS) created "Resource Typing Guidance – Disaster Mental/Behavioral Health and Spiritual Care." The full content can be found here: https://emsa.ca.gov/wp-content/uploads/sites/71/2018/11/EOM-Disaster-Behavioral-Health-Resource-Typing-Aides-10-25-2018.pdf

Introduction

The **California Public Health and Medical Emergency Operations Manual** (EOM) Workgroup has developed two tools to support the ability of an impacted jurisdiction to assess its needs relative to disaster behavioral health, identify resource shortfalls, and request the appropriate types and numbers of assisting personnel.

The first tool provides valuable information on the types of resources, along with numbers and ratios, which support certain disaster missions. The second tool provides greater detail regarding the specific types of personnel that may be suitable for deployment.

We recommend the following for all disaster missions:

- The requesting jurisdiction should specify the qualifications of the Behavioral Health (BH) and Disaster Spiritual Care (DSC) staff they are requesting.
- The sending jurisdiction should match the request to the qualifications of their staff offered for deployment.
- For resource requests for BH and DSC staff resources from out-of-county, consider a *minimum* of a 7-day disaster assignment (5 days working, 2 days travel).
- Statewide training/credentialing standards for Disaster BH and DSC have not yet been established. Therefore, staff offered for deployment should be vetted and trained in Disaster BH or DSC response *per the requirements of the sending organization*.

By Specific Resource Type (Tool 1)

Description from Framework authors: The first tool of this resource is a chart linking resource type to eligibility category, CA Licensing Board/Association, source of the resource, and mission/task.

By Disaster Mission (Tool 2)

Description from Framework authors: The second tool of this resource is a chart linking mission type to resource type, suggested staffing ratio, source of the resource, and notes.

Attachment 9: Disaster Available Supplies in Hospitals (DASH) Tool

The following is a reproduction of the home page for the DASH tool. The full resource and interactive component of the tool can be accessed here: https://dashtool.org.

Welcome

Disaster Available Supplies in Hospitals (DASH) is an interactive tool that can help hospital emergency planners and supply chain staff estimate supplies that may need to be immediately available during various mass casualty incidents (MCI) and infectious disease emergencies based on hospital characteristics. DASH recommends average par levels for specific supplies that acute care hospitals may need to have on hand to respond to a disaster in their community until resupplied. Recommendations are based on user inputs about the size of the hospital, risks in the community, regional role/designation of the hospital, and other factors.

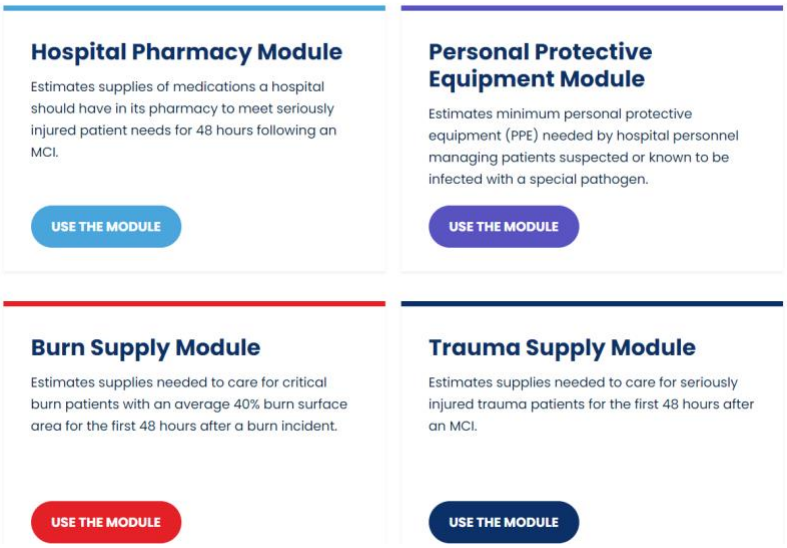

Image 1: DASH's Dashboard Landing Page

DASH is comprised of several modules which, taken together, can provide hospitals a holistic view of the supplies needed to address various types of incidents. Each module also incorporates pediatric sizes and specific medication needs as appropriate to the incident. Most users will elect to complete one module or a segment of the module per sitting as inputs cannot be saved in the tool. Please read the instructions and refer to them as you complete each module.

NOTE: User inputs cannot be saved in the DASH tool. Please remember to download or share as described in the Instructions frequently to save your inputs as you work in DASH.

The U.S. Department of Health and Human Services' (HHS) Administration for Strategic Preparedness and Response (ASPR)'s Technical Resources, Assistance Center, and Information Exchange (TRACIE) and Healthcare Ready developed DASH in collaboration with: ASPR TRACIE Senior Editor, John Hick, MD, Hennepin Healthcare; the Health Industry Distributors Association (HIDA); and the Region VII Disaster Health Response Ecosystem. This project was funded by the U.S. HHS, Administration for Strategic Preparedness and Response.

Attachment 10: Cal OES Inclusive Planning Blueprint for Addressing Access and Functional Needs at Mass Testing/Vaccination Sites

The following is a reproduction of content from the "Inclusive Planning Blueprint for Addressing Access and Functional Needs at Mass Testing/Vaccination Sites" document.

Blueprint Overview

This Blueprint is written for emergency planners of governmental, private sector, and Community-Based Organizations (CBOs). The Blueprint provides a comprehensive list of lessons learned and guidance that can be used to integrate access and functional needs-related considerations when creating mass testing or vaccination plans at the state, regional, tribal, territorial, or local levels.

The Blueprint is based on:

- Access and functional needs-related lessons learned from 2020-2021 COVID-19 testing and vaccination activities
- Interviews with stakeholders in California's access and functional needs community
- Conversations with the Cal OES Office of Access and Functional Needs Community Advisory Committee
- Reference materials listed in 'Appendix B'

The Blueprint is organized by the following areas of focus:

Communications

Effective ways to communicate with and reach the whole community.

Physical Access

Steps to ensure sites are physically and programmatically accessible.

User Experience

Ways to provide the best overall experience during communicable disease testing and vaccination for people with disabilities and individuals with access and/or functional needs.

Community Engagement

Effective practices to engage people with disabilities and individuals with access and/or functional needs, and the organizations that serve them, during the planning and implementation of testing/vaccination sites.

Note from Framework authors: Included within this document is "Appendix C: Blueprint for Success Actions Self-Assessment Form" which provides a summary of actions in the form of a self-assessment checklist table.

Appendix B: Acronyms

Acronym	Definition
AAR	After Action Report
ABAHO	Association of Bay Area Health Officials
AFN	Individuals with access and functional needs
ASPR	Office of the Assistant Secretary for Preparedness and Response
BA UASI	Bay Area Urban Areas Security Initiative
BARHII	Bay Area Regional Health Inequities Initiative
BH	Behavioral Health
Cal OES	California Governor's Office of Emergency Services
CBO	Community-Based Organization
CDC	Centers for Disease Control and Prevention
CDPH	California Department of Public Health
COAD	Community-based Organizations Active in Disaster
CONSTANT	Constant Associates, Inc.
COOP	Continuity of Operations
COVID-19	Coronavirus Disease 2019
DASH	Disaster Available Supplies in Hospitals Tool
DOC	Department Operations Center
DSC	Disaster Spiritual Care
DSW	Disaster Service Worker
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EOM	Emergency Operations Manual
FBO	Faith-Based Organization
FEMA	Federal Emergency Management Agency
HCP	Healthcare Personnel
HHS	United States Department of Health and Human Services
HIDA	Health Industry Distributors Association
HPP	Hospital Preparedness Program
ICS	Incident Command System
IMS	Inventory Management System
JIS	Joint Information System
MAC	Multi-Agency Coordination
MCI	Mass Casualty Incident
MOU	Memorandum of Understanding
NIMS	National Incident Management System
NIOSH	National Institute for Occupational Safety & Health

OAR	Operational Assessment Report
OSHA	Occupational Safety and Health Administration
PIO	Public Information Officer
POD	Point of Dispensing Site
PPE	Personal Protective Equipment
SLTT	State, Local, Tribal, and Territorial Government
SNS	Strategic National Stockpile
TRACIE	Technical Resources, Assistance Center, and Information Exchange
VOAD	Voluntary Organizations Active in Disaster