



Supply Chain Disaster Preparedness Manual



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

Oak Ridge Associated Universities (ORAU) is a university consortium leveraging the scientific strength of major research institutions to advance science and education by partnering with national laboratories, government agencies, and private industry. ORAU manages the Oak Ridge Institute for Science and Education for the U.S. Department of Energy (DOE).

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¹ At the time this document was created HPRT was known as the Healthcare Preparedness Activity (HPA) and was located in the Division of the Strategic National Stockpile. HPRT is currently located in the Capacity Building Branch, Division of State and Local Readiness, Division of State and Local Readiness, Office of Public Health Preparedness and Response.

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Michael Duke

Senior Director
Supply Chain Management Networks

Beverly Slate

Director, Supply Chain Operations, East
Southeast Division
CHI Integrated Supply Chain

Howard Mann

Vice President, Supply Chain Management
Cardiovascular Care Group

Mickey Sparrow

Materiel Manager
Palmetto Health Tuomey

Chris Mitchell

Onward Innovation

The following Centers for Disease Control and Prevention (CDC) Healthcare Preparedness and Response Team (HPRT) and Oak Ridge Associated Universities staff contributed to the production of this tool.

Sherline Lee

Kelly Dickinson

Dahna Batts

Will Artley

Betsy Smither

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Table of Contents

Chapter 1 – Introduction	1
Disaster	1
Overview	1
Why This Manual is Needed	2
Background	2
Target Audience	2
Purpose	3
Guiding Principle	3
Assumptions.....	3
Barriers/Issues to Consider	3
Questions to Consider.....	4
Final Thought	5
Chapter 2 – Getting Started: Identifying Your Planning Partners.....	6
Overview	6
Key Point of This Chapter.....	6
What This Chapter Covers	6
Internal Planning Team	6
Overview	6
Team Makeup	7
Environment of Care Committee.....	8
Overview	8
Committee Makeup	9
Questions to Consider.....	10
Conclusion.....	10
Chapter 3 – Understanding Your Facility's or System's Framework for Disaster Preparedness and Response	12
Overview	12
Key Points of This Chapter	13

What This Chapter Covers	13
Plan Ownership	13
How to Approach the Task of Reviewing Plans	14
Plan Review	15
Hazard Vulnerability Analysis.....	15
Continuity of Operations Plan.....	18
Emergency Operations Plan.....	24
Environment of Care Management Plans.....	26
Summarization	29
Issues with Planning.....	29
Issues with Vendors	30
Last Steps	30
Putting it All Together	30
Looking Ahead.....	31
Questions to Consider.....	32
Conclusion	32
Chapter 4 – Reaching Out to External Partners.....	38
Overview	38
Key Point of This Chapter.....	38
What This Chapter Covers	38
Community Healthcare Coalition.....	38
Coalition Makeup.....	39
Your Community's Healthcare Coalition.....	39
Local, State, and Federal Disaster Resources	39
The process for reaching out to external partners.....	48
Federal Emergency Response Overview.....	48
State Emergency Response Overview	48
Questions to Consider.....	49
Conclusion	50

Chapter 5 – Engaging Healthcare Facility/System Leadership	54
Overview	54
Key Point of This Chapter.....	54
What This Chapter Covers	54
Meet with Key Stakeholders	54
Postmeeting Activities	59
Brief the Environment of Care Committee.....	60
Meet with Leadership	60
Postmeeting Activities	61
Questions to Consider.....	61
Conclusion.....	62
Chapter 6 – Developing an All-Hazards Cache.....	64
Overview	64
Key Point of This Chapter.....	64
What This Chapter Covers	64
Develop Short Scenarios	64
Gather Information about Supply Needs.....	65
Meet with Primary Staff.....	65
Meet with Ancillary Staff	76
Compare Supply Needs.....	77
Account for Special Supply Requirements.....	77
Determine if You Can Stockpile These Supplies	78
List Additional Needed Supplies	82
Account for Special Supply Requirements.....	82
Determine if You Can Stockpile These Supplies	82
Develop Your All-Hazards Cache.....	86
Questions to Consider.....	86
Conclusion.....	87
Chapter 7 – Conclusion	88

What to Do Next	88
Appendix A – Sample Scenarios.....	90
Overview	90
No-Notice Scenario 1 – Chemical Spill.....	92
No-Notice Scenario 2 – Earthquake.....	94
No-Notice Scenario 3 – Large-Scale Fire.....	96
No-Notice Scenario 4 – Mass-Casualty Incident.....	98
No-Notice Scenario 5 – Unknown, Novel, Highly Pathogenic Disease	100
No-Notice Scenario 5 – Tornado.....	102
With-Notice Scenario 1 – Blizzard/Snow Storm	104
With-Notice Scenario 2 – Flood	106
With-Notice Scenario 3 – Hurricane	108
With-Notice Scenario 4 – Influenza Pandemic	110
Appendix B – Abbreviations and Acronyms.....	112
Preparedness Acronyms	112
Organizational Acronyms.....	113

Chapter 1 – Introduction

DISASTER

1. *A sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community's or society's ability to cope using its own resources²*
2. *When the destructive effects of natural or man-made forces overwhelm the ability of a given area or community to meet the demand for healthcare³*



Hospital damaged by the Moore, Oklahoma tornado in 2013

OVERVIEW

Disaster. That is the operative word for this manual. *Disaster preparedness.* That is its focus.

Preparing for disasters is a much more difficult task than preparing for the day-to-day emergencies that a healthcare facility or system faces. Disaster preparation goes beyond the healthcare facility walls. It involves coordination with community partners and federal and state responders. Disaster preparation calls for everyone to work together for a common goal: to meet the needs of the community in a time of extreme devastation. This manual provides a framework for preparing for such a coordinated and collaborative response to a disaster.

² International Federation of Red Cross and Red Crescent Societies, <http://www.ifrc.org/en/what-we-do/disaster-management/about-disasters/what-is-a-disaster/>

³ American College of Emergency Physicians, <http://www.acep.org/>

WHY THIS MANUAL IS NEEDED

In late 2013, the Association for Healthcare Resources and Materials Management (AHRMM) surveyed its membership to assess their level of readiness for a disaster. While the survey responses did indicate a high level of disaster planning, survey respondents identified topics they would like to see addressed further in a manual or other format, such as coordinating with local or state governments during a disaster and determining the roles the federal government will play in a disaster, among other things. These topics were not covered thoroughly in AHRMM's *Disaster Preparedness Manual for Healthcare Materials Management Professionals* (2007). As a result, these topics helped to inform the content of this manual.

BACKGROUND

The AHRMM membership survey resulted from a meeting with the Centers for Disease Control and Prevention (CDC) Healthcare Preparedness and Response Team (HPRT)⁴ and the Oak Ridge Associated Universities (ORAU) Oak Ridge Institute for Science and Education (ORISE) in February 2012. At the meeting, federal partners and private sector experts discussed current gaps in knowledge about the U.S. healthcare system's supply chain and obstacles that inhibit effective response to an influenza pandemic or other large-scale infectious disease event.

In early 2013, CDC staff engaged the AHRMM Board of Directors to update them on the progress of post meeting activities. The board agreed to the concept of a joint effort to produce a newer, up-to-date disaster preparedness manual and later agreed to make the manual freely available on their website and CDC's website.

TARGET AUDIENCE

Healthcare supply chain managers are the primary target audience for this manual. Healthcare (facility) emergency managers are the secondary audience. Other users of the manual could include healthcare supply distributors, healthcare administrators, clinicians, and government and nonprofit professionals involved in disaster planning and response.

⁴ At the time this meeting was convened, HPRT was known as the Healthcare Preparedness Activity (HPA) and was located in the Division of the Strategic National Stockpile. HPRT is currently located in the Capacity Building Branch, Division of State and Local Readiness, Division of State and Local Readiness, Office of Public Health Preparedness and Response. HPA resides within the Office of Public Health Preparedness and Response, Division of State and Local Readiness at CDC.

PURPOSE

The purpose of this manual is to help healthcare supply chain managers prepare for disasters by showing how disaster preparation is a whole-community, coordinated effort. The purpose of this manual also is to help supply chain managers become more familiar with the hazard scenarios likely to impact their facility or system as well as their community, develop supply chain-related plans to help respond to these scenarios, and if possible, begin developing an all-hazards cache of medical supplies to ensure a hospital or healthcare system is prepared for these hazard scenarios.

GUIDING PRINCIPLE

Perhaps the most important point to make before beginning a planning effort is that planning should be a community-wide effort. Planning cannot be undertaken by a single individual. Instead, development of a disaster plan should include expertise and input from many partners within a healthcare facility or system and the community, either on a planning team, a coalition, or both. Bringing these people together is crucial to the success of a planning effort, as will be shown in later chapters of this manual.

ASSUMPTIONS

- An internal planning team has been or will be established in the healthcare facility or system to help the supply chain manager work through this manual. (See Chapter 2 for more information about this team.)
- The various planning elements in this manual can be completed individually, but should be coordinated with the planning team or other community partners (i.e., the supply chain manager should not feel compelled to work alone on this manual and should use the planning team or other subject matter experts [SMEs] for feedback).

BARRIERS/ISSUES TO CONSIDER

- Supply chain department managers will need to work with many other hospital and nonhospital partners to determine what supplies will be needed in an emergency.
- Supply chain managers need input from many sources to determine the critical supplies that are needed during a disaster. Sometimes they do not get all of the input they need or they do not receive it in a useful way.

- Implementing the recommendations made in this manual will be dependent on vendor compliance, market availability of critical supplies, and availability of financial resources.
- Regulatory or legal directives may be barriers to implementing some of the recommendations made in this manual.
- Preparing for some disasters is difficult because of a lack of knowledge in the community about how to specifically respond to the disaster (e.g., a radiological incident).

QUESTIONS TO CONSIDER

Answering these questions may be helpful in preparing you for the next chapter.

Questions	Response Complete?
Do you know what types of disasters or emergencies your healthcare facility or system has experienced in the past?	Yes <input type="checkbox"/> No <input type="checkbox"/>
- If not, do you know who has this information?	
In terms of the supply chain, do you know what lessons were learned? What worked well? What did not?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Are you currently involved in your facility's or system's emergency preparedness/planning activities?	Yes <input type="checkbox"/> No <input type="checkbox"/>
- If not, can you become involved in these activities?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Do you work with others in your facility or system on these emergency preparedness/planning activities?	Yes <input type="checkbox"/> No <input type="checkbox"/>
- If not, do you know who you could work with in your facility or system on these emergency preparedness/planning activities?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Are you currently involved in your community's emergency preparedness/planning activities (e.g., drills, exercises, meetings)?	Yes <input type="checkbox"/> No <input type="checkbox"/>
- If not, can you become involved in these activities?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Do you work with others in your community to help plan these emergency preparedness/planning activities?	Yes <input type="checkbox"/> No <input type="checkbox"/>
- If not, do you know who you could work with in your community on these emergency preparedness/planning activities?	Yes <input type="checkbox"/> No <input type="checkbox"/>

FINAL THOUGHT

CDC would appreciate your feedback on this document. You may provide this feedback by sending it to healthcareprepared@cdc.gov.

Chapter 2 – Getting Started: Identifying Your Planning Partners

OVERVIEW

Before you begin reading through this manual and working through the tasks outlined within it, you need to understand that you should not feel pressured to undertake these tasks on your own. As pointed out in the guiding principle in the previous chapter, planning or preparing for a disaster is an effort that involves many partners either within your healthcare facility or system or within your community. In order for you to be better prepared for a disaster as a supply chain manager, you need to leverage the knowledge and expertise of these partners. Moreover, you need to allow them to leverage your knowledge and expertise. This collaborative relationship will result in enhanced disaster preparedness for your healthcare facility or system as well as for your community.

KEY POINT OF THIS CHAPTER

Planning and preparedness activities are a group effort. No one should feel compelled to undertake them alone.

WHAT THIS CHAPTER COVERS

This chapter provides an overview of two internal partner groups you can leverage to enhance your healthcare facility's or system's and your community's preparedness for a disaster. These two groups are

- Internal planning team
- Environment of Care Committee

INTERNAL PLANNING TEAM

Overview

The focus of this team is not just on planning as being a group of consultants to which you can turn for answers to questions you may have or for explanations of internal protocols or processes related to emergency preparedness and response.

Team Makeup

Your internal planning team should be a small group composed of your facility's emergency manager and people from within your supply chain department⁵. Below is a suggested list of people to include on your planning team:

- Emergency/disaster manager or planner
- A clinical products specialist from within your supply chain department
- A small number of inventory staff and receiving/distribution staff from within your supply chain department or throughout the facility or system
- A small number of purchasing or supply ordering staff from major support services divisions, such as facility maintenance/operations, food services, and sanitation because the supply chain department most likely will be called upon to support them during a disaster.

As stated above, you want to limit your planning team to a small group of people while still encompassing the major supply chain activities. Use the worksheet below to identify these team members.

My Internal Planning Team

Name	Title	Contact Information

⁵ Some healthcare facilities or systems use the term "materials department" instead of "supply chain department." The authors of this manual consider the two terms to be interchangeable.

You also may want to consider keeping the following people informed of the work you do as outlined in this manual because these people are involved in preparedness activities and can be an information resource for you:

- Safety manager
- Security manager
- Risk manager
- Relevant clinical representatives who can help you determine their supply needs during a disaster

Use the worksheet below to identify these people.

My Resource Contacts

Name	Title	Contact Information

ENVIRONMENT OF CARE COMMITTEE

Overview

The Joint Commission's Environment of Care standards require organizations to develop management plans in six functional areas⁶, noting that "management plans should not detail how things are done, but should provide assurance that processes are in place to respond to risk." The six functional areas are safety, security, hazardous materials and waste, fire safety, medical equipment, and utilities.

⁶ From *Clarifications and Expectations, Environment of Care Management Plans, Making Sure Your Plans Get the Job Done* by The Joint Commission, which is available at <http://www.jointcommission.org/assets/1/6/EOCManagementPlans.pdf>.

To meet this Joint Commission requirement, your healthcare facility or system has developed management plans in these six functional areas and has assigned ownership of each plan to one or more representatives from your healthcare facility or system. These representatives make up what is known as your facility's or system's Environment of Care Committee.

With regard to your task of working through this manual, your Environment of Care Committee also can be consultants to whom you can turn for answers to questions or for explanations of internal protocols or processes related to emergency preparedness and response. Additionally, this committee could tell you what they need from you in terms of supplies for each of these six functional areas for a given disaster scenario.

Committee Makeup

It is likely that your healthcare facility's or system's Environment of Care Committee already has been assembled; therefore, its makeup has been predetermined. However, you need to ask them to identify pertinent people within the committee or a subcommittee, such as the preparedness subcommittee, who can help you as you work through this manual. To do this, approach the Environment of Care Committee and tell them that you are trying to prepare your facility's or system's supply chain for disasters. They will then connect you with the appropriate people.

Use the worksheet below to identify relevant members of your healthcare facility's or system's Environment of Care Committee who can help you as you work through this manual.

Environment of Care Committee

Name	Title	Contact Information

QUESTIONS TO CONSIDER

Before you move on to the next chapter, please consider these important questions.

Questions	Response Complete?
Have you determined a regular, recurring time for the planning team to meet?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Did you seek input from your planning team members about other people who should be involved in helping you to complete the tasks outlined in this manual?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Have you determined who will take meeting notes and who will track progress on task completion?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Have you discussed roles and responsibilities with Environment of Care Committee members?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Have you informed your healthcare facility or system leadership of the work you are undertaking for this project?	Yes <input type="checkbox"/> No <input type="checkbox"/>

CONCLUSION

Identifying your planning partners is the first step in gaining the foundational knowledge you need to work through the tasks outlined in this manual. The next step is to, with the help of your planning partners, understand your healthcare facility's or system's framework for disaster preparedness and response. This topic is addressed in the next chapter.

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Chapter 3 – Understanding Your Facility's or System's Framework for Preparedness and Response

Most hospitals throughout the United States have a disaster plan as a requirement of state licensure and to comply with an accrediting organization. The key question still remains . . . do plans meet the needs of the facility and the community? Often they still do not.⁷

OVERVIEW

As the title suggests, this chapter focuses on your healthcare facility's or system's disaster preparedness and response frameworks. Specifically, you want to look at your facility's or system's level of preparedness for a disaster and, more importantly, your role as a supply chain manager in these plans. The particular plans you will need to review are described below.

- Hazard vulnerability analysis (HVA) – The HVA provides a systematic approach to recognizing hazards that may affect demand for a hospital's services or its ability to provide those services. The risks associated with each hazard are analyzed to prioritize planning, mitigation, response, and recovery activities. The HVA serves as a needs assessment for the emergency management program. This process should involve community partners and be communicated to community emergency response agencies.⁸
- Continuity of operations plan (COOP) – The COOP describes how your healthcare facility's or system's essential functions and operations will be maintained during a disaster. As explained later in this chapter, the COOP has 10 components, which may or may not include the supply chain department.
- Emergency operations plan (EOP) – Your healthcare facility's or system's HVA and other preparedness plans are combined to create an all-hazards EOP.
- Environment of care management plans – The Joint Commission's Environment of Care standards require organizations to develop management plans in six functional areas: safety, security, hazardous materials and waste, fire safety, medical equipment, and utilities.

⁷ From *Hospital Disaster Preparedness, Meeting a Requirement or Preparing for the Worst? An Update (Eleven Years After)*, American Society for Healthcare Engineering, which is available at http://www.ashe.org/management_monographs/mg2009richter.shtml.

⁸ From *Emergency Preparedness, Preparing Hospitals for Disasters – Hazards Vulnerability Analysis*, California Hospital Association, which is available at <http://www.calhospitalprepare.org/hazard-vulnerability-analysis>.

KEY POINTS OF THIS CHAPTER

- You need to approach your review of your facility's or system's plans with a high degree of curiosity. Do not assume that your needs as a supply chain manager will be addressed within the scope of your facility's or system's existing plans. You need to look at these plans to find out for yourself.
- Many plans (e.g., HVA, COOP) roll up into your facility's or system's EOP. You need to consider all of these plans—not just the EOP—when you try to determine your level of preparedness for a disaster.
- Your review of your facility's or system's plans will help you to determine where you fit (or need to fit) into the preparedness spectrum within your facility or system.
- Your review of your facility's or system's plans will help you to identify areas in your supply distribution management plan or other supply-related plans that need to be updated.
- The internal teams you identified while working through Chapter 2 of this manual should be used to help you review existing plans and identify gaps in planning or areas for improvement.

WHAT THIS CHAPTER COVERS

This chapter provides a method for gauging your facility's or system's level of disaster preparedness as it relates to supply chain issues by reviewing the following assessments and plans: HVA, COOP, EOP, and environment of care management plans.

PLAN OWNERSHIP

Each of the plans listed above has an "owner"—a person within your healthcare facility or system who is responsible for maintaining and updating the plan. These "owners" are the people with whom you are going to talk to in order to gain a better understanding of the content of the plans and how you, as a supply chain manager, fit into the plan. If you are not sure where to find these plans or who maintains them, ask your emergency manager or relevant member of your Environment of Care Committee. You will need this "owner" information before getting started on this chapter of the manual. Use the worksheet on the next page to capture this information.

Plan Ownership Worksheet

Plan Name	Owner	Telephone	E-Mail	Plan Last Updated
HVA				
COOP				
EOP				
Safety Management Plan				
Security Management Plan				
Hazardous Materials And Waste Management Plan				
Fire Safety Management Plan				
Medical Equipment Management Plan				
Utilities Management Plan				
Other plan: _____				
Other plan: _____				

HOW TO APPROACH THE TASK OF REVIEWING PLANS

The key point of Chapter 2 was that planning and preparedness activities are a group effort; therefore, you should keep this point in mind as you work through this chapter. You will rely heavily on your internal planning team and your relevant Environment of Care Committee members to help guide you through the process of reviewing existing plans. The approach you should take when reviewing these plans is

- Contact the owner of the plan to start a collaborative process⁹ for reviewing the plan and to secure a copy of the plan to review before proceeding with the next step.

⁹ Assure the owner of the plan that you are not auditing the plan. Your focus is on whether supply chain operations are adequately addressed in the plan. You will collaborate with the owner of the plan to strengthen areas of the plan where supply chain operations are not adequately addressed.

- Meet with or contact your internal planning team or relevant Environment of Care Committee members to inform them of the plan(s) you will be reviewing and to get their insights and opinions on the plan(s).
- Use the discussion questions provided in this chapter as a guide to enhance the collaborative process.
- Using discussion results and your observations from reviewing the plan, identify gaps in planning or issues that need to be addressed.
- Meet with your internal planning team and the owner of the plan to review these gaps or issues, prioritize those that should be addressed, and determine a path forward for addressing them.

PLAN REVIEW

Hazard Vulnerability Analysis

The HVA identifies the hazard scenarios likely to impact your healthcare facility or system as well as your community. The purpose of your review of the HVA is to familiarize yourself with these hazard scenarios so that you can determine your role as a supply chain manager in the response to them.

Before the Discussion

Prior to meeting with the owner of your healthcare facility's or system's HVA, you should meet with your internal planning team and relevant members of your Environment of Care Committee (either in person or by telephone) to review the discussion topics and questions (on the next page) to see if any other topics or questions need to be added. You also want to determine if other facility or system representatives should attend the meeting with the owner of the HVA. For example, with regard to patient needs for each hazard scenario, the owner of the HVA will not be able to answer the questions associated with this topic area. Therefore, a person with a clinical background should attend the meeting so that all parties understand patient needs for a given scenario. The same could apply to other topic areas. The point is to get all relevant parties together to discuss the HVA and to understand each other's needs as it relates to the HVA.

The Discussion

Use the discussion topics and potential questions on the next page as a guide to help you collaborate with the owner of your healthcare facility's or system's HVA to determine if supply chain operations are adequately addressed in it. Please note that these discussion topics and

questions are not all encompassing of the subject matter. Answers to questions you may ask about a certain topic may prod you to ask more questions in order to fully understand the complexities of the HVA. Please also note that you are not required to cover all of these topics or ask these questions (i.e., if you think a question does not need to be asked, then do not ask it). They are provided as a guide.

As you work through each question set, make note of any issues or areas of concern that you may have either using your own notebook or the optional Issue Documentation Form provided at the end of this chapter. If you choose to do so, you will address these issues or areas of concern with the plan owner during the wrap up of your discussion.

HVA Discussion Topics and Potential Questions

Topic	Potential Questions
General information	<ul style="list-style-type: none"> • What was the process of conducting the HVA? What was the process for updating it? When was it last updated? Who was involved? Is it under revision? • What hazards were identified? Which ones are considered to be most likely to impact us? • Do we need to consider any other hazards? If so, what are they?
Patient needs for each hazard scenario	<ul style="list-style-type: none"> • For _____ (hazard scenario), what kind of patients are we going to see? For example, are we going to see people with comorbidities? Are we going to see an influx of vulnerable populations? Are we going to see trauma victims? Are we going to see people with out-of-the-ordinary symptoms? Are we going to get greater numbers of patients than we normally do? • What kind of support are these patients going to need? • What supplies do I need to stockpile for these patients? <ul style="list-style-type: none"> ○ Make note of supplies that you do not normally stock or that require extra storage space or a controlled environment.
Staff needs for each hazard scenario	<ul style="list-style-type: none"> • What about our staff? What support do they need for this hazard scenario? • What supplies do I need to stockpile for our staff? <ul style="list-style-type: none"> ○ Make note of supplies that you do not normally stock or require extra storage space or a controlled environment (e.g., personal supplies, housing, childcare, pet care, laundry, food, and water).
Extra staff needs for each hazard scenario	<ul style="list-style-type: none"> • Does the response to this hazard scenario require the employment of extra staff? If yes, who are the extra staff?

Topic	Potential Questions
	<ul style="list-style-type: none"> ○ If yes, are personal supplies, housing, childcare, pet care, laundry, food, and water needed for these additional staff? Who is going to provide these supplies? ● Are additional supplies required to ensure the safety of the facility/system staff (e.g., personal protective equipment [PPE])? If so, what are these supplies?
Surge planning	<ul style="list-style-type: none"> ● Does the HVA account for patient surge? If so, what departments will be impacted? What supplies will they need? ● Will any departments have to relocate because of patient surge? If so, where will they relocate? What supplies will have to be relocated? How will they be relocated?
Storage needs	<ul style="list-style-type: none"> ● Are any storage spaces for our supplies vulnerable (i.e., might be ruined) in this hazard scenario? Will we lose these supplies? ● Do we need extra storage space for some of these supplies? If so, has that been addressed in the HVA? If not, how should we address this need? ● Do we need a controlled environment beyond our capabilities for these supplies? If so, has that been addressed in the HVA? If not, how should we address this need? ● Do we need supplies that we normally do not stock? If so, has that been addressed in the HVA? If not, how should we address this need?
Supply Vendors	<ul style="list-style-type: none"> ● How will this hazard scenario impact our vendors' ability to provide the supplies needed for our patients and staff? <ul style="list-style-type: none"> ○ Will we need to sign agreements or contracts with other vendors in order to maintain supplies during this hazard scenario? ● Can our vendors provide the supplies that we do not currently stockpile? <ul style="list-style-type: none"> ○ Can they provide them in a timely manner during this hazard scenario? ● Will our vendors be willing to sign an agreement stating that our healthcare facility or system will have priority for the supplies needed for our patients and staff during this hazard scenario?
Issues/areas of concern	<ul style="list-style-type: none"> ● Here are the issues or areas of concern I have identified from our discussion. (This information comes from your notes or the Issue Identification Form that you filled out.) <ul style="list-style-type: none"> ○ How can we work together to address these issues or areas of concern? ○ What steps do we need to take? ○ Who do we need to involve?

Topic	Potential Questions
Wrap-up questions	<ul style="list-style-type: none"> • What do you need from me as the supply chain manager for our facility or system in terms of preparing for these hazard scenarios? • How can we work together to enhance our facility's or system's preparedness for all of the hazards identified in the HVA? • What do we need to do to improve our facility's or system's HVA so that supply chain operations are adequately addressed?

After the Discussion

The answers to the issues/areas of concern questions and the wrap-up questions will guide your next steps with regard to your facility's or system's HVA. As mentioned earlier in this chapter, your work with the owner of the HVA should be an ongoing, collaborative process; therefore, you and the owner should work together to make the necessary improvements to the HVA. You also can appoint a member of your planning team to work with the owner of the HVA. Just make sure that you clearly identify the work to be done and a timeline for completing it. An optional Issue Resolution Form is provided at the end of this chapter to help you document and track this task.

Continuity of Operations Plan¹⁰

Sometimes referred to as a Business Continuity Plan, a COOP ensures that a healthcare facility's or system's critical business functions and essential services continue during an emergency or a disaster. The elements of a COOP vary from organization to organization, but 10 common components can be found in most COOPs:

1. Essential Functions – The most critical functions that must be continued under all circumstances
2. Lines of Succession – An order of succession of leadership positions in your facility or system

¹⁰ The content in this section was adapted from *X Hospital Continuity of Operations Plan Guidance Document* by the Kansas Department of Health and Environment (http://www.kdheks.gov/cphp/download/Hospital_COOP_Guidance_Document.doc) and *Louisiana DHH OPH Continuity of Operations Plan* by the State of Louisiana Department of Health and Hospitals Office of Public Health (http://dhh.louisiana.gov/assets/oph/Center-CP/emergprep/COOP_OPH_Central_Office_Annex9_February2011.pdf).

3. Delegation of Authority – Positions that have the legal authority to carry out particular duties for your facility or system
4. Alternate Facilities or Sites – Facilities or sites other than your primary facility in which your system can carry out its essential functions
5. Vital Records, Systems, and Equipment – Records, databases, systems, and equipment needed to support your facility's or system's essential functions
6. Interoperable Communications – Communications to be used during an emergency as well as applicable contact lists, call down rosters, and logs of trainings and drills
7. Human Capital Management – How employees will be trained on your facility's or systems COOP and how you will communicate with them during a COOP event as well as other programs available for home and family preparedness, if applicable
8. Testing and Exercising – How staff will be tested on the COOP and how the COOP will be evaluated
9. Devolution – How your agency will deal with a catastrophic event that wipes out your primary facility and most, if not all, of your employees. This can be done through using other facilities and their staff members to carry out the essential functions of your agency, training them, exercising with them, and allowing access to the vital systems, records, databases and equipment they would need to fulfill those functions
10. Restoration and Recovery – Actions and resources needed to restore essential functions; vital records, systems, and equipment; and communication systems to pre-emergency operating conditions

Before the Discussion

Prior to meeting with the owner of your healthcare facility's or system's COOP, you should meet with your internal planning team (either in person or by telephone) to review the discussion topics and questions (on the next page) to see if any other topics or questions need to be added.

The Discussion

Use the discussion topics and potential questions on the next page to help you to collaborate with the owner of your healthcare facility's or system's COOP to determine if the supply chain operations are adequately addressed in it. As you work through each question set, make note

of any issues or areas of concern that you may have either using your own notebook or the optional Issue Documentation Form provided at the end of this chapter.

NOTE: As you review the COOP, think about how you will have to support the organizational (facility or system) COOP as well as the supply chain department COOP. The COOP is not just for the hospital or the supply chain department, rather the COOP will involve both. As a result, some of these questions pertain to supply chain department personnel, but the owner of the COOP needs to be a part of the discussion so that all parties understand their roles and responsibilities in the COOP.

COOP Discussion Topics and Potential Questions

Topic	Potential Questions
General information	<ul style="list-style-type: none"> What was the process for updating our facility's or system's COOP? When was it last updated? Who was involved?
Essential functions	<ul style="list-style-type: none"> Is supply chain department management listed as an essential function? If not, why not?
Lines of succession	<ul style="list-style-type: none"> Are lines of succession in the supply chain department management clearly defined in the COOP? Have these lines of succession been communicated to supply chain department personnel? Have these lines of succession been communicated to vendors and other stakeholders?
Delegation of authority	<ul style="list-style-type: none"> Have the positions that have the legal authority to carry out particular duties related to supply chain department management been identified in the COOP? Have these authoritative positions been communicated to supply chain department personnel? Have these authoritative positions been communicated to vendors and other stakeholders?
Alternate facilities or sites	<ul style="list-style-type: none"> Are alternate facilities or sites readily accessible for the transfer and storage of supplies? Do these alternate facilities or sites provide acceptable space for storage of supplies? Do these alternate facilities or sites provide adequate security for storage of supplies? Do these alternate facilities or sites provide adequate temperature controls for stored supplies?
Vital records, systems, and equipment	<ul style="list-style-type: none"> Have the records vital to the supply chain department been identified in the COOP? Have the systems vital to the supply chain department been identified in the COOP? Has the equipment vital to the supply chain department been identified in the COOP?

Topic	Potential Questions
	<ul style="list-style-type: none"> • Have provisions been made or is infrastructure in place to support back-up systems?
Interoperable communications	<ul style="list-style-type: none"> • Does the COOP identify how supply chain department personnel will communicate with other facility or system staff during a disaster? • Does the COOP identify how supply chain department personnel will communicate with vendors and other stakeholders during a disaster?
Human capital management	<ul style="list-style-type: none"> • Does the COOP provide for cross-trained staff to assist in the supply chain department? • Does the COOP provide for external entities to assist in the supply chain department?
Testing, training, and exercising	<ul style="list-style-type: none"> • Does the COOP provide for testing and training of supply chain department staff on pertinent components of the COOP? • Does the COOP provide for exercising and evaluating areas of the COOP related to the supply chain department?
Devolution	<ul style="list-style-type: none"> • What will be the process to demobilize and or return supplies and equipment to pre-event status? • How will we collect and evaluate supplies for return? • Who will be responsible for the reverse distribution of equipment and supplies? • When we close down and redeploy from alternate sites, what role will the supply chain department play?
Restoration and recovery	<ul style="list-style-type: none"> • Does the COOP describe how essential functions related to the supply chain department will be restored to pre-emergency operating conditions? • Does the COOP describe how vital records related to the supply chain department will be restored to pre-emergency operating conditions? • Does the COOP describe how vital systems related to the supply chain department will be restored to pre-emergency operating conditions? • Does the COOP describe how vital equipment related to the supply chain department will be restored to pre-emergency operating conditions? • Does the COOP describe how communication systems related to the supply chain department will be restored to pre-emergency operating conditions?

Topic	Potential Questions
Supply Vendors	<ul style="list-style-type: none"> • Does the COOP provide for alternate methods for obtaining supplies should one or more of our current vendors be unable to fulfill our supply needs?
Issues/areas of concern	<ul style="list-style-type: none"> • Here are the issues or areas of concern I have identified from our discussion. (This information comes from your notes or the Issue Identification Form that you filled out.) <ul style="list-style-type: none"> ○ How can we work together to address these issues or areas of concern? ○ What steps do we need to take? ○ Who do we need to involve?
Wrap-up questions	<ul style="list-style-type: none"> • What do you need from me as the supply chain manager for our facility or system to help ensure that our critical business functions and essential services continue during an emergency or even a disaster? • How can we work together to make sure our facility or system maintains its essential functions during a disaster? • What do we need to do to improve our facility's or system's COOP so that supply chain operations are adequately addressed?

After the Discussion

As was the case with the HVA, the answers to the issues/areas of concern questions and the wrap-up questions will guide your next steps with regard to your facility's or system's COOP. As mentioned earlier in this chapter, your work with the owner of the COOP should be a collaborative process; therefore, you and the owner should work together to make the necessary improvements to the COOP. You also can appoint a member of your planning team to work with the owner of the COOP. Just make sure that you clearly identify the work to be done and a timeline for completing it. An optional Issue Resolution Form is provided at the end of this chapter to help you document and track this task.

Emergency Operations Plan¹¹

Hospitals are required to have an EOP that describes how a facility will respond to and recover from all hazards. It is inclusive of the six critical elements within *The Joint Commission's Emergency Management Standards*:

1. Communication
2. Resources and assets
3. Safety and security
4. Staff responsibilities
5. Utilities management
6. Patient clinical and support activities

The EOP's "all-hazards" approach enhances the facility's or system's ability to respond to a range of emergencies varying in scale, duration, and cause.

Before the Discussion

Prior to meeting with the owner of your healthcare facility's or system's EOP, you should meet with your internal planning team (either in person or by telephone) to review the discussion topics and questions (on the next page) to see if any other topics or questions need to be added.

The Discussion

Use the discussion topics and potential questions below to help you to collaborate with the owner of your healthcare facility's or system's EOP to determine if supply chain operations are adequately addressed in it. As you work through each question set, make note of any issues or areas of concern that you may have either using your own notebook or the optional Issue Documentation Form provided at the end of this chapter.

¹¹ Adapted from *Emergency Preparedness, Preparing Hospitals for Disasters – Emergency Operations Plan (EOP)*, California Hospital Association, which is available at <http://www.calhospitalprepare.org/emergency-operations-plan>.

EOP Discussion Topics and Potential Questions

Topic	Potential Questions
Communication	<ul style="list-style-type: none"> Does the EOP indicate when and how supply chain department personnel should communicate with the Hospital Incident Command System (HICS)? Does the EOP provide a process for communicating with vendors and other external stakeholders?
Resources and assets	<ul style="list-style-type: none"> Does the EOP provide for an adequate supply of resources needed to respond to all scenarios identified in the HVA? Does the EOP identify a process for acquiring additional supplies in a timely manner?
Safety and security	<ul style="list-style-type: none"> Does the EOP provide for the safety of supply chain department personnel? Does the EOP provide for security of stored supplies?
Staff responsibilities	<ul style="list-style-type: none"> Does the EOP identify roles and responsibilities of supply chain department personnel during a disaster? Does the EOP identify roles and responsibilities of HICS staff with regard to supply chain department management?
Utilities management	<ul style="list-style-type: none"> Does the EOP provide for self-sufficiency of the hospital for 96 hours? Does the EOP provide for back-up utilities for supply chain department operations?
Patient and critical support activities	<ul style="list-style-type: none"> Does the EOP outline what functions, activities, departments, or clinical processes will be increased or shut down in the event of emergency? <ul style="list-style-type: none"> Can any of the supplies from closed departments be used by the supply chain department?
Supply Vendors	<ul style="list-style-type: none"> Does the EOP have contingencies for obtaining supplies should one or more of our current vendors be unable to fulfill our supply needs?
Issues/areas of concern	<ul style="list-style-type: none"> Here are the issues or areas of concern I have identified from our discussion. (This information comes from your notes or the Issue Identification Form that you filled out.) <ul style="list-style-type: none"> How can we work together to address these issues or areas of concern? What steps do we need to take? Who do we need to involve?

Topic	Potential Questions
Wrap-up questions	<ul style="list-style-type: none"> • What do you need from me as the supply chain manager for our facility or system to help ensure that we meet the clinical, administrative, facility, staff, and other needs for the organization? • How can we work together to make sure our facility or system has plans, contracts, memoranda of understanding, and other agreements in place to ensure it meets the needs for the hazard scenarios discussed in the EOP? • What do we need to do to improve our facility's or system's EOP so that supply chain operations are adequately addressed?

After the Discussion

As was the case with the HVA and the COOP, the answers to the issues/areas of concern questions and the wrap-up questions will guide your next steps with regard to your facility's or system's EOP. As mentioned earlier in this chapter, your work with the owner of the EOP should be a collaborative process; therefore, you and the owner should work together to make the necessary improvements to the EOP. You also can appoint a member of your planning team to work with the owner of the EOP. Just make sure that you clearly identify the work to be done and a timeline for completing it. An optional Issue Resolution Form is provided at the end of this chapter to help you document and track this task.

Environment of Care Management Plans

As mentioned in Chapter 2 of this manual, The Joint Commission's Environment of Care standards require organizations to develop management plans in six functional areas¹²:

1. Safety
2. Security
3. Hazardous materials and waste
4. Fire safety
5. Medical equipment

¹² From *Clarifications and Expectations, Environment of Care Management Plans, Making Sure Your Plans Get the Job Done* by The Joint Commission, which is available at <http://www.jointcommission.org/assets/1/6/EOCManagementPlans.pdf>.

6. Utilities

To meet this Joint Commission requirement, your healthcare facility or system has developed management plans in these six functional areas and has assigned ownership of each plan to one or more representatives of your healthcare facility or system. These representatives make up what is known as your facility's or system's Environment of Care Committee.

Before the Discussion

Prior to meeting with the owner(s) of your healthcare facility's or system's environment of care management plans, you should meet with your internal planning team (either in person or by telephone) to review the discussion topics and questions (on the next page) to see if any other topics or questions need to be added.

The Discussion¹³

Use the discussion topics and potential questions below to help you to collaborate with the owner(s) of your healthcare facility's or system's environment of care management plans to determine if supply chain operations are adequately addressed in them. As you work through each question set, make note of any issues or areas of concern that you may have either using your own notebook or the optional Issue Documentation Form provided at the end of this chapter.

Environment of Care Management Plans Interview Guide

Topic	Potential Questions
Safety	<ul style="list-style-type: none"> • What supplies or resources do you need in order to maintain safety during each hazard scenario identified in the HVA? • Does the plan identify from where these supplies or resources will come? • Does the plan identify how you will acquire these supplies or resources?
Security	<ul style="list-style-type: none"> • What supplies or resources do you need to maintain security during each hazard scenario identified in the HVA? • Does the plan identify from where these supplies or resources will come? • Does the plan identify how you will acquire these supplies or resources?

¹³ **Note:** Since the Environment of Care Committee is most familiar with your healthcare facility's or system's environment of care management plans for the six functional areas, you should try to meet with the entire committee to conduct your interview or, at least, with those members who are most familiar with these management plans. Otherwise, you will need to conduct up to six separate interviews.

Topic	Potential Questions
Hazardous materials and waste	<ul style="list-style-type: none"> • What supplies or resources do you need to manage hazardous materials and waste during each hazard scenario identified in the HVA? • Does the plan identify from where these supplies or resources will come? • Does the plan identify how you will acquire these supplies or resources?
Fire safety	<ul style="list-style-type: none"> • What supplies or resources do you need to maintain fire safety during each hazard scenario identified in the HVA? • Does the plan identify from where these supplies or resources will come? • Does the plan identify how you will acquire these supplies or resources?
Medical equipment	<ul style="list-style-type: none"> • What supplies or resources do you need to maintain medical equipment during each hazard scenario identified in the HVA? • Does the plan identify from where these supplies or resources will come? • Does the plan identify how you will acquire these supplies or resources?
Utilities	<ul style="list-style-type: none"> • What supplies or resources do you need to maintain utilities during each hazard scenario identified in the HVA? • Does the plan identify from where these supplies or resources will come? • Does the plan identify how you will acquire these supplies or resources?
Supply Vendors	<ul style="list-style-type: none"> • Do our vendors currently stockpile the supplies or resources identified in the topics above? <ul style="list-style-type: none"> ○ If they do not stockpile some or all of these supplies, can they stockpile them? ○ If they do not stockpile them, are other vendors available that do stockpile these supplies or resources?
Issues/areas of concern	<ul style="list-style-type: none"> • Here are the issues or areas of concern I have identified from our discussion. (This information comes from your notes or the Issue Identification Form that you filled out.) <ul style="list-style-type: none"> ○ How can we work together to address these issues or areas of concern? ○ What steps do we need to take? ○ Who do we need to involve?
Wrap-up questions	<ul style="list-style-type: none"> • What do you need from me as the supply chain manager for our facility or system to help ensure that we have the equipment and supplies needed to respond to each of the scenarios in the plan?

Topic	Potential Questions
	<ul style="list-style-type: none"> • How can we work together to make sure our facility or system is prepared for each of these scenarios? • What do we need to do to improve our facility's or system's Environment of Care Management Plans so that supply chain operations are adequately addressed?

After the Discussion

As was the case with the HVA, COOP, and EOP, the answers to the issues/areas of concern questions and the wrap-up questions will guide your next steps with regard to your facility's or system's environment of care management plans. As mentioned earlier in this chapter, your work with the owner(s) of the environment of care management plans should be a collaborative process; therefore, you and the owner should work together to make the necessary improvements to the environment of care management plans. You also can appoint a member of your planning team to work with the owner of the environment of care management plans. Just make sure that you clearly identify the work to be done and a timeline for completing it. An optional Issue Resolution Form is provided at the end of this chapter to help you document and track this task.

SUMMARIZATION

Issues with Planning

After you have reviewed and discussed your healthcare facility's or system's HVA, COOP, EOP, and environment of care management plans, you may have found that one plan might contain information that conflicts with other plans. For example, one plan may list an alternate facility or site that is not listed in other plans. You should document these conflicts using the optional Issue Documentation Form at the end of this chapter or another form of your choosing.

In addition to conflicts in planning, you may have discovered that a planning gap is consistently seen across most, if not all, of the plans you have reviewed. These consistent gaps should take priority in terms of resolution over other planning gaps. You also should document these consistent gaps using the optional Issue Documentation Form at the end of this chapter or another form of your choosing.

After you have documented these conflicts in planning and consistent planning gaps, you should meet with your planning team to strategize how best to address them. One of your strategies may involve the owner(s) of the plans that have conflicts or gaps. As with the plans

you reviewed, you should make sure that you clearly identify the work to be done and a timeline for completing it. An optional Issue Resolution Form is provided at the end of this chapter to help you document and track this task.

Issues with Vendors

Your plan review may have highlighted areas where vendors might be unable to provide needed supplies in a timely manner or might not be able to provide them at all. This revelation may lead you to discussing your concerns with your current vendors or initiating agreements or contracts with other vendors to replace any shortfalls that may have been identified. You can use the optional Issue Resolution Form at the end of this chapter to help you document and track this task.

Last Steps

Although you or a member of your planning team will identify who should address conflicts or gaps in planning and when they should address them, do not assume that the work will be accomplished or completed on time. You need to consider what next steps you will take if one or more of your concerns are not addressed.

PUTTING IT ALL TOGETHER

Below are some tips to help you and your planning team members process the information you gathered from your plan reviews:

- Summarize the information from each plan review with your team.
- Determine what events will directly impact the supply chain department (e.g., building destruction, relocation).
- Determine what events will require the supply chain department to directly support impacted departments (e.g., clinical, facility).
- Determine what events will indirectly impact the supply chain department (e.g., computer failure affecting electronic data interchange).
- Determine what needs to be done in the supply chain department to prepare for these events.

LOOKING AHEAD

The purpose of this chapter was for you to look at specific emergency preparedness plans in your facility or system to gauge your facility's or system's level of preparedness for a disaster. Now that you have looked at these plans, you should have an idea of the level of preparedness with regard to your supply chain department. You also should know what will be the areas of biggest concern when responding to each of the disaster scenarios identified in your HVA. However, one topic that was not touched upon in this chapter is where, when, and why you will need assistance from external entities (i.e., those who are not connected to or contracted with your healthcare facility or system) when responding to a disaster. This topic will be addressed in the following chapters.

Thinking about your gaps in planning and your biggest areas of concern, try to identify external assistance that could help to resolve these gaps or concerns. Enter this information in the appropriate column on the Issue Resolution Form at the end of this chapter.

QUESTIONS TO CONSIDER

Before you move on to the next chapter, please consider the questions listed in the table below.

Questions	Response Complete?
Have you identified the types of supplies <u>and services</u> your facility's or system's clinical, ancillary, and support departments will need to respond to the events outlined in the HVA?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Have you identified the types of supplies <u>and services</u> your facility's or system's clinical, ancillary, and support departments will need to maintain their critical functionality as outlined in their various plans and the COOP?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Have you flagged any scenarios/situations that are not addressed in the supply chain department COOP, such as power outages?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Do you understand the role of the supply chain department in the facility's EOP?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Have you identified the strengths/shortcomings that you see in this role?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Have you identified the supplies and services that are lacking in each of the plans or in the supply chain department functions/responsibilities outlined in the plans?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Have you identified the most dangerous event for your facility and the supply chain department?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Have you identified the most likely event to occur for your facility and the supply chain department?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Do you know how your department will respond to each?	Yes <input type="checkbox"/> No <input type="checkbox"/>

CONCLUSION

Healthcare facilities or systems can plan as best as possible for the worst of conditions but, as you probably have deduced from your plan review, outside assistance will be needed to help with the response to disasters. This point is made above in this question posed to you: where, when, and why will you need assistance from external entities? Now that you have answered this question, you are prepared to move on to the next chapter, which addresses external partners that can be of assistance to you in a disaster situation.

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Issue Documentation Form

Plan Name/Plan Component Name: _____

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Issue Resolution Form

Plan Name/Plan Component Name: _____

/Concern	Priority	Person(s) to Address It	External Assistance Needed	Timeframe for Resolution

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Chapter 4 – Reaching Out to External Partners

OVERVIEW

One of the conclusions made in the previous chapter was that your healthcare facility's or system's response to a disaster will require the assistance of external partners. Some of this assistance may come from within your community, some may come from your state, and some may come from the federal government. This chapter focuses on these three types of partners and finishes with a discussion of the process for reaching out to them.

KEY POINT OF THIS CHAPTER

Your understanding of the local, state, and federal resources available to assist with a disaster and the protocols for requesting them will enhance your healthcare facility's or system's preparedness and responsiveness to a major disaster.

WHAT THIS CHAPTER COVERS

This chapter covers the following topics:

- Community healthcare coalition
- Local, state, and federal disaster resources
- The process for reaching out to external partners

COMMUNITY HEALTHCARE COALITION

Healthcare coalitions are defined as a "single functional entity" of healthcare facilities and other healthcare assets organized to implement the mitigation, preparedness, response, and recovery actions of medical and healthcare providers in a jurisdiction's healthcare system¹⁴. Healthcare coalitions consist of community partners who have a vested interest in improving the ability of the healthcare system to respond to and recover from emergencies and disasters. Your community probably has a healthcare coalition.

Whereas your internal planning team and your Environment of Care Committee are intended to help you prepare from a facility- or system-based perspective, the purpose of involving your community's healthcare coalition in your preparedness efforts is focused on the whole-

¹⁴ Adapted from *Hospitals to Healthcare Coalitions: Transforming Health Preparedness and Response in Our Communities*, U.S. Department of Health and Human Services, which is available at <http://www.phe.gov/Preparedness/planning/hpp/Documents/hpp-healthcare-coalitions.pdf>.

community perspective. They will help you to understand where you fit into their preparedness and response framework. Likewise, you will come to understand where they fit into your healthcare facility's or system's preparedness and response framework, which could include sharing resources and supplies they have on hand during a disaster.

Coalition Makeup

Just as was the case with your Environment of Care Committee, your community coalition already has been assembled; therefore, its makeup has been predetermined.

Your Community's Healthcare Coalition

Use the worksheet below to identify the key players in your community's healthcare coalition, such as the chairperson, resource or supply managers, Strategic National Stockpile (SNS) coordinators, public health representatives, and emergency management representatives.

Community Healthcare Coalition

Name	Agency or Organization	Role	Contact Information

LOCAL, STATE, AND FEDERAL DISASTER RESOURCES

The tables on the following pages list the local¹⁵, state, and federal resources that could be deployed to assist your healthcare facility or system during a disaster. Please note that some of

¹⁵ For the purposes of this chapter, the term *local resources* encompasses community, city, county, or regional resources.

these resources may be organized or administered at the national level, but involve personnel or other resources deployed at the local level.

While you, as a supply chain manager, may not think you will ever need one or more of these resources or partners, you still should consider these key questions for your planning and preparedness efforts as you look through the list of resources:

- Who are your external points of contact for this partner?
- Who in your healthcare facility or system is delegated responsibility for coordinating with this partner?
- What is the importance of this partner to your planning? What do you need to know?
- Under what circumstances will this partner become available to your healthcare facility or system? What type of resources will become available? When will they become available?
- How will you integrate (i.e., train) personnel associated with this partner into your response to a disaster? What responsibilities might you assign to personnel associated with this partner (if relevant)?
- What relevant work has your community's healthcare coalition done with regard to coordinating the request for this partner and its resources? How can/does your facility or system fit into this planning?
- What is the process for requesting this partner? Who within your healthcare facility or system makes the request? Who do they contact to make the request?

Use the External Partner/Resource Planning Worksheet at the end of this chapter to capture relevant information resulting from these questions.

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Local Disaster Resources

Resource	Description	What is Provided
LPHD	Your local public health department (LPHD) may be able to provide medical countermeasures (MCMs) or other medical supplies during a disaster.	MCMs, medical supplies
EOC	Emergency Support Function ¹⁶ (ESF) 8 – Public Health and Medical Services will reside in your community's emergency operations center (EOC) with a representative of your LPHD acting as the lead with regard to the distribution of MCMs.	Coordination of requests and distribution of supplies and human resources – EOC personnel will coordinate requests for supplies with your facility's or system's HICS personnel.
CERT	The Community Emergency Response Team (CERT) Program educates people about disaster preparedness for hazards that may impact their area and trains them in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations.	Human resources – CERT members may be the first response personnel at your healthcare facility; therefore, you may need to turn to them to help you manage your supplies at hand.
MRC	The Medical Reserve Corps (MRC) is a national network of volunteers, organized locally to improve community health and safety. MRC units engage these volunteers to prepare for and respond to natural disasters (e.g., wildfires, hurricanes, tornadoes, blizzards, floods) as well as other emergencies affecting public health (e.g., disease outbreaks).	Human resources – Your local MRC may be able to provide you with volunteers to assist you with your supply chain management. As a result, you need to know who to contact and how to contact them to request MRC assistance.
NVOAD	Many member organizations of the National Voluntary Organizations Active in Disasters (NVOAD), such as the American Red Cross and the United Way of America, have local chapters in your community that assist in the response to a disaster.	Human resources, equipment and supplies – NVOAD members can provide your healthcare facility or system with basic necessities after a disaster and can help with family assistance, family reunification, and reconfiguration of facility space to meet the needs of disaster victims. You need to know which organizations in your communities are members of NVOAD, how they can help you, and how to request their assistance during a disaster.

¹⁶ An Emergency Support Function is the grouping of governmental and certain private sector capabilities into an organizational structure to provide support, resources, program implementation, and services that are most likely needed to save lives, protect property and the environment, restore essential services and critical infrastructure, and help victims and communities return to normal following domestic incidents.

State Disaster Resources

Resource	Description	What is Provided
SPHD	Like your LPHD, your state public health department (SPHD) may be able to provide MCMs or other medical supplies during a disaster.	MCMs, medical supplies
EMAC	The Emergency Management Assistance Compact (EMAC) offers assistance during governor-declared states of emergency through a responsive, straightforward system that allows states to send personnel, equipment, and commodities to help disaster relief efforts in other states. Through EMAC, states also can transfer services, such as shipping newborn blood from a disaster-impacted lab to a lab in another state.	Human resources, equipment, commodities – During a disaster, you may need to request supplies from a neighboring state. The EMAC process is designed to facilitate such requests. Therefore, you should become familiar with the EMAC personnel structure and the process for making requests.
ESAR-VHP	The Emergency System for Advance Registration of Volunteer Health Professionals (ESAR-VHP) is a federal program administered at the state level that verifies health professionals' identification and credentials so that they can respond more quickly when disaster strikes. By registering through ESAR-VHP, volunteers' identities, licenses, credentials, accreditations, and hospital privileges are all verified in advance, saving valuable time in emergency situations.	Human resources – You may need to supplement your supply chain department staff during a disaster. ESAR-VHP can help to provide pre-credentialed volunteers to help you. As a result, you need to know who to contact and how to contact them to request volunteer assistance.

Federal Disaster Resources

Resource	Description	What is Provided
SNS	CDC's Strategic National Stockpile (SNS) has large quantities of medicine and medical supplies to protect the American public if a public health emergency (e.g., terrorist attack, flu outbreak, or earthquake) occurs that is severe enough to cause local supplies to run out. Once federal and local authorities agree that the SNS is needed, medicines will be delivered to any state in the country in time (within 12 hours) for them to be effective. Each state has plans to receive and distribute SNS medicine and medical supplies to local communities as quickly as possible. These medicines and supplies are free, and CDC has stockpiled enough of them to protect people in several large cities at the same time.	MCMs, equipment associated with MCMs – You may need to request SNS assets through the proper channels during an emergency. You need to understand the overall importance of SNS to your planning efforts and how to request SNS assets. You also need to understand what supplies come with SNS and the timeframe you can expect to receive them so that you can factor this information into determining your shortfalls during a disaster (i.e., what your facility will have to supply).
CHEMPACK	Under its mandate, SNS has a maximum 12-hour response time, but this response time is inadequate for a nerve agent event because treatment must be accomplished quickly in order to save as many lives as possible. As a result, CDC established a voluntary participation project (CHEMPACK) for the "forward" placement of sustainable repositories of nerve agent antidotes in numerous locations throughout the United States, so that they can be immediately accessible for the treatment of affected persons.	Nerve agent antidotes – Your healthcare facility or system may experience an unexplained surge of patients seeking treatment for symptoms indicating nerve agent exposure. As a result, you will need to know if your hospital already has CHEMPACK assets or, if not, how to quickly request CHEMPACK assets. You will need to know how to make this request through the proper channels.
FMS	The Federal Medical Station (FMS) was designed by the U.S. Department of Health and Human Services (HHS) for deployment anywhere in the United States when communities experience a widespread terrorism incident or a large-scale natural disaster that incapacitates or overwhelms the affected area's medical care delivery system. A team of approximately 100 personnel is needed to staff an FMS, with personnel provided primarily by the U.S. Public Health Service. Each FMS contains a 3-day supply of medical and pharmaceutical resources to sustain from 50 to 250 stable, primary care-based patients who require bedding services.	Medical and pharmaceutical resources – An FMS may be set up in your community and you may be asked to support it. You need to recognize that the operation of an FMS has limitations, including complete dependence on the host agency (federal, state, or local) for service support, including staffing, since it does not deploy with power, water and food sources, or waste removal capabilities.

Resource	Description	What is Provided
NDMS	The National Disaster Medical System (NDMS) is a federally coordinated medical response system that augments state and local emergency resources during disasters or major emergencies. NDMS also provides supplemental medical support to the U.S. Department of Veteran's Affairs (VA). NDMS resources come from federal, state, and local governments, the private sector, and civilian volunteers. NDMS Response Teams include the Disaster Medical Assistance Team (DMAT), the Disaster Mortuary Operational Response Team (DMORT), and the National Veterinary Response Team (NVRT).	Human resources – NDMS personnel may be stationed in your healthcare facility or system during a disaster. You need to understand what resources the federal government will provide them and what resources you will be expected to provide them.
DMAT	A DMAT is a group of professional and paraprofessional medical personnel (supported by a cadre of logistical and administrative staff) designed to provide medical care during a disaster or other event. DMATs are designed to be a rapid-response element to supplement local medical care until other federal or contract resources can be mobilized, or the situation is resolved. DMATs deploy to disaster sites with sufficient supplies and equipment to sustain themselves for a period of 72 hours while providing medical care at a fixed or temporary medical care site. The personnel are activated for a period of 2 weeks. In mass casualty incidents, their responsibilities may include triaging patients, providing high-quality medical care despite the adverse and austere environment often found at a disaster site, patient reception at staging facilities, and preparing patients for evacuation.	See above
DMORT	A DMORT is composed of private citizens, each with a particular field of expertise, who are activated in the event of a disaster. During an emergency response, DMORTs work under the guidance of local authorities by providing technical assistance and personnel to identify and process deceased victims. Teams are composed of funeral directors, medical examiners, coroners, pathologists, forensic anthropologists, medical records technicians and transcribers, finger print specialists, forensic odontologists, dental assistants, x-ray technicians, mental health specialists, computer professionals, administrative support staff, and security and investigative personnel.	See above

Resource	Description	What is Provided
NVRT	The NVRT is a cadre of individuals within NDMS who have professional expertise in areas of veterinary medicine, public health, and research. NVRT is the primary federal resource for the treatment of injured or ill animals affected by disasters. NVRT members are private citizens who have been hired as intermittent federal employees and activated in the event of a disaster. As intermittent federal employees when personnel are activated, during the length of a deployment, their licensure is recognized by the state(s) requesting assistance.	See above
Healthcare Ready	Healthcare Ready (formerly Rx Response) helps to strengthen healthcare supply chains through collaboration with public health and private sectors by addressing pressing issues before, during, and after disasters.	Membership is required to access Healthcare Ready resources. For more information, see http://www.healthcareready.org/join-us .

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THE PROCESS FOR REACHING OUT TO EXTERNAL PARTNERS

If a devastating tornado or flood severely damages your facility and your surrounding community, the immediate response to the incident will come from your local emergency responders. Depending on the scope of the devastation, response assets from the region, the state, or even the federal government will be called in to offer assistance. Examples of past disasters where this tiered response was observed are Hurricanes Katrina (2005) and Sandy (2012) and the Joplin, Missouri (2011) and Moore, Oklahoma (2013) tornadoes.

While the response to an incident may begin locally, a structured framework for a tiered response involving local, state, and federal assets has been developed by the federal government.

Federal Emergency Response Overview

Federal Emergency Management Agency and Declared Disasters

The U.S. Department of Homeland Security (DHS) is the federal agency responsible for domestic incident management, usually through the Federal Emergency Management Agency (FEMA). When an incident cannot be managed with the combined response capabilities of state and local governments, the governor(s) of the impacted state(s) may request federal assistance under the Stafford Act. The request is made by the state governor(s) through a FEMA regional office to the head of FEMA to the Secretary of DHS to the President of the United States, who ultimately makes the decision to declare an emergency.

The Public Health Emergency Response Framework

Several federal departments and agencies have authorities to respond to and declare specific types of disasters or emergencies apart from the Stafford Act. Of particular note is the fact that the Secretary of HHS has the authority to declare a public health emergency through the Public Health Service Act. Like the Stafford Act, this declaration allows for the activation of federal assets, such as SNS.

State Emergency Response Overview

As noted in the National Response Framework¹⁷, "Most incidents begin and end locally and are managed at the local level. These incidents typically require a unified response from local agencies, the private sector, and nongovernmental organizations. Some may require additional support from neighboring jurisdictions or state governments." When these incidents are of

¹⁷ Available at [FEMA National Response Framework](#) .

disastrous proportions, the governor of the state can declare a state of emergency to enhance the response to the disaster.

QUESTIONS TO CONSIDER

Before you move on to the next chapter, please consider the questions listed in the table below.

Questions	Response Complete?
Do you know how you will order, track, inventory, and distribute the medical supplies received from the different resources mentioned in this chapter?	Yes <input type="checkbox"/> No <input type="checkbox"/>
- Have you considered that medical supplies may be from different manufacturers, have differing units of measure, and be different sizes from what you currently have?	Yes <input type="checkbox"/> No <input type="checkbox"/>
- Have you considered that your Inventory Management System (IMS)/perpetual inventory systems may not interface with the different agencies from which you need supplies?	Yes <input type="checkbox"/> No <input type="checkbox"/>
- Have you considered that your warehouse clinical staff will be unaccustomed to the supplies received?	Yes <input type="checkbox"/> No <input type="checkbox"/>
- Have you considered that some of the peripheral supplies (e.g., pulse-ox) may not be compatible with your equipment?	Yes <input type="checkbox"/> No <input type="checkbox"/>
- Have you considered that you will have to maintain storage and possibly separate the supplies you receive from those you normally carry?	Yes <input type="checkbox"/> No <input type="checkbox"/>
- Have you considered that you may have to track and report usage on the different supplies to various response infrastructures?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Do you know how you will receive orders from, fulfill requests for, and support the different (non-MCM) response organizations that work with your hospital?	Yes <input type="checkbox"/> No <input type="checkbox"/>
- Do you know how you will ensure the response infrastructure/incident command levels is/are all kept informed about demand and supplies fulfilled?	Yes <input type="checkbox"/> No <input type="checkbox"/>
- Do you know how you will deliver to agencies that do not have the logistical ability to pick up supplies from you?	Yes <input type="checkbox"/> No <input type="checkbox"/>
- How will you provide staff to ensure you are able to support the different resources mentioned in this chapter, your organization, and other needs, including when your staff are affected by the incident (i.e., reduced staffing)?	Yes <input type="checkbox"/> No <input type="checkbox"/>

CONCLUSION

At this point, you and your planning team should have identified the following:

- Internal and external partners with whom you need to collaborate to enhance existing plans
- The disaster scenarios most likely to impact your healthcare facility or system
- External partners who can be sources for disaster materiel

All of this information has provided you with the foundation to begin planning for a disaster, which is covered in the remaining chapters of this manual.

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External Partner/Resource Planning Worksheet

Partner/Resource Name: _____

Contact Information

Name	Phone	E-mail

Planning Considerations

This image shows a single sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There is a vertical red margin line on the left side, creating a narrow left margin. The paper appears to be from a notebook or a standard ruled sheet of paper.

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Chapter 5 – Engaging Healthcare Facility/System Leadership

OVERVIEW

As a supply chain manager, planning for a disaster requires the support of your healthcare facility's or system's leadership. This chapter describes a process for engaging your leadership to help them to understand the scope of your planning efforts and to get their support for the tasks you need to undertake to ensure your healthcare facility or system is prepared for a disaster.

KEY POINT OF THIS CHAPTER

The more your healthcare facility's or system's leadership understands in advance of a disaster event the facility's or system's capacity to respond to the event, the more support he or she will provide to plan for the response. To help your facility's or system's leadership gain this understanding, you will need to synthesize the information you collected in the previous chapters to inform your leadership of (1) the main hazards likely to impact your facility or system with regard to the supply chain and (2) the current state of facility or system planning with regard to the supply chain.

WHAT THIS CHAPTER COVERS

This chapter covers the following topics:

- Meeting with key stakeholders to summarize the findings of the previous chapters in this manual
- Briefing the Environment of Care Committee on the outcomes of the meeting with these key stakeholders
- Meeting with leadership to inform them of the main hazards likely to impact the facility or system with regard to the supply chain and the current state of facility or system planning with regard to the supply chain

MEET WITH KEY STAKEHOLDERS

In Chapter 3, you met with the owner of your healthcare facility's or system's HVA to, among other things, gain an understanding of the hazard scenarios most likely to impact your facility or system. Now, you need to meet with your facility's or system's key stakeholders to discuss these hazard scenarios and determine how they will impact the acquisition and stockpile of supplies needed for the response to the hazard. Key stakeholders to engage are

- Internal planning team members
- Safety manager
- Security manager
- Risk manager
- Relevant clinical representatives who can help you determine their supply needs during a disaster
- Others who you think should be involved in the process

Use the worksheet on the next page to guide you through the discussion of each hazard scenario you identified as likely to impact your facility or system and to document your discussion with your key stakeholders because next you will meet with your facility's or system's Environment of Care Committee to brief them on what you have learned.

NOTE: The goal of your discussion with your key stakeholders is to capture the information needed to brief your healthcare facility's or system's leadership. Once your leadership has agreed with your assessments and approved your path forward, you can delve deeper into your supply needs, which is covered in the next chapter.

Key Stakeholder Discussion Guide	
Hazard scenario _____	
Do we agree that this is a hazard scenario for which we should prepare? If not, why?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Do we understand what we need in terms of supplies for this hazard? If not, why?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Have we stockpiled the supplies needed for the response to this hazard? If yes, where is this stockpile? If not, why?	Yes <input type="checkbox"/> No <input type="checkbox"/>
How long can our stockpile of supplies meet the needs of those impacted by this hazard?	
If we do not currently stockpile the supplies needed for the response to this hazard, what additional supplies do we need?	

Key Stakeholder Discussion Guide	
Do our satellite facilities (e.g., outpatient facilities, urgent care facilities) have supplies we can use for the response to this hazard? What are these supplies?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Do our satellite facilities expect us to provide supplies to them for the response to this hazard? What supplies are they expecting?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Will our vendors be able to provide us with the supplies we need during this hazard? If not, how will we get the supplies we need?	Yes <input type="checkbox"/> No <input type="checkbox"/>
What external partners do we need to engage in the response to this hazard?	

Key Stakeholder Discussion Guide
<i>After discussing and answering the above questions, you should use this next set of questions to guide further discussion.</i>
<p>If we cannot stockpile all of the supplies needed for the response to this scenario, what supplies must be on hand at the outset of the response (i.e., what supplies have top priority)?</p>
<p>What issues did we identify in our discussions?</p>
<p>What actions do we need to take to address these issues?</p>
<p>How much time is needed to address these issues?</p>
<p>Notes</p>

POST MEETING ACTIVITIES

After your meeting with your key stakeholders, you and your planning team need to regroup to address the questions posed below for each hazard scenario and identify any issues that need to be resolved by your facility's or system's Environment of Care Committee.

Post Meeting Discussion Guide	
Hazard scenario _____	
If we were able to stockpile all of the supplies needed for the response to this scenario, how much time will be required to stockpile these supplies?	
For the supplies that we cannot stockpile, what memoranda of agreement (MOAs) or understanding (MOUs) do we need to initiate and with whom?	
What are our processes for accessing supplies through our community EOC?	
Do we have adequate and appropriate space to stockpile these supplies?	Yes <input type="checkbox"/> No <input type="checkbox"/>
If yes, where is this space? If no, where can we find space?	
Can we estimate whether the cost of these supplies is within our budget?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Do any of these supplies have a high cost? If so, what are these supplies?	

BRIEF THE ENVIRONMENT OF CARE COMMITTEE

The purpose of your meeting with your Environment of Care Committee is to confirm the results of your meeting with your key stakeholders. Another purpose of the meeting is to identify any political issues that may arise as a result of the meeting with your healthcare system's or facility's leadership. Suggested topics to cover in the meeting are provided in a checklist format below.

Topic	Covered?
The three hazard scenarios most likely to impact the facility or system	<input type="checkbox"/>
The main concerns about the supplies on hand needed for the response to each hazard scenario (e.g., only enough supplies available for a few days of the response, overall cost)	<input type="checkbox"/>
Concerns about expectations of satellite facilities	<input type="checkbox"/>
The plan for addressing identified concerns	<input type="checkbox"/>
Concerns about expectations of supply vendors	<input type="checkbox"/>
The plan for addressing identified concerns	<input type="checkbox"/>
External partners that need to be engaged in responding to the hazard scenario	<input type="checkbox"/>
The plan for engaging external partners	<input type="checkbox"/>
Your plan for meeting with your facility's or system's leadership	<input type="checkbox"/>

With regard to the last topic above, your facility's or system's Environment of Care Committee may tell you not to proceed with the meeting because they may want you to do more research on the issues you identified¹⁸ or address particular issues before meeting with leadership.

MEET WITH LEADERSHIP

The meeting with your healthcare facility's or system's leadership should be short. As stated earlier, the purpose of this meeting is to help leadership understand in advance of a disaster event the facility's or system's capacity to respond to the event and to gain leadership's buy-in to the planning efforts necessary for an effective response to the event. The worksheet on the next page provides a list of topics that should be covered in the meeting.

¹⁸ See Issue Resolution Form on page 35.

Topic	Covered?
Provide a summary of the work performed to date in this manual	<input type="checkbox"/>
Present the top three hazard scenarios identified as likely to impact the facility or system while also explaining the level of preparedness for each hazard with regard to the supply chain (i.e., prepared or not prepared)	<input type="checkbox"/>
Describe your plan for addressing concerns about the supplies on hand needed for the response to each hazard or about expectations of satellite facilities	<input type="checkbox"/>
Describe your plan for addressing concerns about the ability of supply vendors to provide needed supplies in a timely manner	<input type="checkbox"/>
Identify the external partners that need to be engaged in responding to each hazard scenario	<input type="checkbox"/>
Describe your plan for engaging external partners	<input type="checkbox"/>
Present what you propose to do and how long it will take	<input type="checkbox"/>
Ask if leadership has any questions or feedback	<input type="checkbox"/>
Provide a summary of the meeting (i.e., here is what you need from me and here is what I need from you)	<input type="checkbox"/>

POST MEETING ACTIVITIES

The ultimate goal of your work in this chapter is to have your healthcare facility's or system's leadership agree with your assessments and approve your path forward in developing an all-hazards cache, which is covered in the next chapter. However, if your leadership does not agree with your assessments or suggests a different path forward, you will need to resolve these differences before you proceed to the next chapter.

QUESTIONS TO CONSIDER

Before you move on to the next chapter, please consider the questions listed in the table below.

Questions	Response Complete?
Did you encounter differences between what the key stakeholders, Environment of Care Committee, and hospital/system leadership identified as the top three hazards for which to prepare? If so, how can you address these differences to help your planning and preparedness activities?	Yes <input type="checkbox"/> No <input type="checkbox"/>

Questions	Response Complete?
Did you encounter differences between what the key stakeholders, Environment of Care Committee, and hospital/system leadership identified as the biggest supply chain concerns (e.g., money, storage, need, availability, supply vendors)? If so, how can you address these differences to help your planning and preparedness activities?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Following these meetings, what additional information or other meetings did the key stakeholders, Environment of Care Committee, and hospital/system leadership request? What actions will you take to fulfill these requests?	Yes <input type="checkbox"/> No <input type="checkbox"/>
What is your plan to address each of these action items? Who will help you and what support will you need?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Would external expertise or support (e.g., government partners, consultants) help you with these planning and preparedness activities? If so, who would you ask to help you?	Yes <input type="checkbox"/> No <input type="checkbox"/>

CONCLUSION

Now that your healthcare facility's or system's leadership has provided you the support you need to move forward in planning for a disaster, you can begin the actual task of doing more detailed planning. That work begins in the next chapter.

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Chapter 6 – Developing an All-Hazards Cache

OVERVIEW

In the last chapter, you met with your healthcare facility's or system's key stakeholders, Environment of Care Committee, and, most importantly, leadership to get their support for the steps you need to take to prepare for a disaster. Now comes the point where you actually take steps toward developing an all-hazards cache.

KEY POINT OF THIS CHAPTER

The best approach to building an all-hazards cache is to identify necessary resources and supplies to support the provision of care during your priority disaster scenarios. In this chapter, you will make use of discussion-based meetings with the people who will provide support during a disaster scenario. These meetings will help you determine their needs and the needs of those in the community they would be treating.

WHAT THIS CHAPTER COVERS

This chapter covers the following topics:

- Developing short scenarios for each of the hazards identified as most likely to impact the facility or system to help generate discussion
- Gathering information about resource and supply needs during each of your top three hazard situations
- Comparing the resource and supply needs for each hazard scenario to identify commonalities
- Procuring the needed resources and supplies based on the list of common items and those needed for specific hazards

DEVELOP SHORT SCENARIOS

In order to conduct a discussion-based meeting, you need a scenario to guide discussion. The scenario only needs to be long enough to identify the hazard, how it has impacted the community infrastructure (if applicable), and how it has impacted the citizens of the community in terms of their health and medical needs.

Sample scenarios for the hazards listed below are provided in Appendix A on page 89.

List of Hazard Scenarios with No Notice and with Notice

Hazard – With No Notice	Hazard – With Notice
Chemical spill	Blizzard/snow storm
Earthquake	Flood
Large-scale fire	Hurricane
Mass-casualty incident	Influenza pandemic
Tornado/derecho	
Novel, highly pathogenic disease	

You and your planning team can use these scenarios as templates to build a scenario more applicable to your healthcare facility or system and your community. If one or more of your priority hazards is not covered in the appendix, you and your planning team will need to develop those scenarios. If you think others within the facility or system need to be involved in the development process, then include them as well.

GATHER INFORMATION ABOUT SUPPLY NEEDS

Meet with Primary Staff

Once you have developed your scenarios, you and your planning team are ready to meet with primary staff who will be impacted by the hazard to discuss their needs and the needs of those they will treat. Please note that you may have to engage different staff depending on the hazard scenario. Examples of primary staff to include in your meeting are shown below.

Examples of Primary Staff Positions

Position	Position
Emergency/disaster managers/planner	Emergency department (ED) personnel
HICS personnel	Infection control/prevention personnel
Safety officer	Worker safety/occupational health personnel
Clinical personnel*	Supply chain personnel

* Clinical personnel include staff from the critical care unit (CCU), intensive care unit (ICU), laboratory, operating room (OR), pharmacy, and others as needed.

Ideally, you would want to meet with these people in one large session, but that probably will not be possible. Therefore, you may need to conduct multiple sessions or identify a champion for each group to meet with separately.

The purpose of these sessions will be to

- Clarify where a supply chain manager may need to support the facility's overall response to the hazard scenario. Specifically, you will want to identify new capabilities or resources that you may not usually provide. To help with this identification, you may want to present the information you gathered in previous chapters in which you determined potential impacts a specific hazard scenario would have on your facility or system or you identified concerns or issues you have in terms of planning and preparing for the hazard. Doing so will provide an opportunity to validate this information with primary staff
- Discuss with your clinical SMEs the types of care not normally provided in your facility on a routine basis that would need to be provided during a hazard scenario, changes to existing care (e.g., cancel elective surgeries, increase certain types of care) that would need to be made, and the anticipated increase in the number of medical procedures for people who would need care during a hazard scenario
- Estimate the demand for medical supplies and the timeframe for when they will be needed
- Project possible training needs related to the use of new equipment or supplies
- Validate any prior information gathered from other stakeholders

The following aids are provided to help you facilitate and capture information from these sessions: sample scenarios (Appendix A), a discussion guide with prompting questions (on page 67), and worksheet templates for capturing information discussed in the sessions (included in the discussion guide).¹⁹

¹⁹You also may wish to share resource lists, such as the Association for Healthcare Resource & Materials Management (AHRMM) formulary (available at http://www.ahrmm.org/ahrmm/news_and_issues/issues_and_initiatives/files/disaster_formularies.pdf), to help guide discussion and to ensure that critical supplies (e.g., medical gases) are covered during the discussion.

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Discussion Guide

Hazard Scenario: _____

Instructions

The purpose of this discussion guide is to help a supply chain manager clarify where resources and supplies may be needed to support a hospital's or system's overall response to a given hazard scenario. In particular, the supply chain manager should focus on supplies or logistical issues that are unique to this scenario and may not be addressed in current response plans.

If you are using this guide as part of a series of discussions (i.e., more than one meeting), you may wish to prefill information from earlier sessions on the provided worksheets. This will help other groups more easily provide additional comment and feedback.

Previously Collected Information

Present the information you gathered in previous chapters in which you determined potential impacts, if any, the hazard scenario would have on your facility or system or in which you identified concerns or issues you have in terms of planning and preparing for the hazard. Ask the following questions:

- Do you agree with this list of concerns or issues?
- If not, what is incorrect?
- If not, what is missing?

Notes: _____

Hazard Impact

As a group, read the sample hazard scenario. Select a person to ask the following questions to determine the general impact this scenario will have on the hospital or system:

- Will we need to evacuate or shelter in place?
- Will we lose communication systems, electricity, gas, water, or other utilities?
- Will we need to alter our normal process for receiving medical supplies or medical gases?
- Will we need to provide transportation, family support, or other services for staff?
- Do we have other needs or issues we must cover?

For each of the above questions that are answered "yes," ask the following questions:

- What will be the role of the supply chain manager in helping to address this situation?
- What resources or supplies do you expect the supply chain department to provide to help address the situation?

Use Worksheet 6.1 below to capture this information.

Worksheet 6.1 – Supply Chain Department Roles and Expectations

Situation	Supply Department Role	Expected Resources/Supplies

Clinical/Patient Care

Next, discuss the types of medical care that would need to be provided for patients under this hazard scenario. The focus should be on care that goes beyond what is provided on a day-to-day basis, whether it is the type of care to be provided or an increased volume of a type of care. Ask the following questions to prompt discussion:

- What types of patients (i.e., injuries or illnesses) would you expect to encounter with this hazard?
- How would you treat these injuries or illnesses? What kind of care will they need (e.g., specialized care, burn care)?
- What supplies would need to be on hand to treat impacted people immediately? How much would be needed?
- What out-of-the-ordinary supplies do we need to provide by units (e.g., ED, CCU, ICU) and shifts?

Next, you need to estimate the demand, training needs, and timeframe in which supplies will be needed.

- How many people would you expect to treat within 48 hours? 1 week?
- What supplies would need to be obtained within 24 to 48 hours of the hazard? How much would be needed?
- What supplies not covered above would be needed to sustain a long-term response? How much would be needed? When would it be needed?
- How long will the impact of this hazard last (i.e., how long will we be treating patients)?
- What kind of supplies can we stockpile in anticipation of the event, if possible?
- What additional supplies or additional quantities of the supplies covered above would be needed for training of staff or equipping families or visitors of patients (e.g., PPE)?

Use Worksheet 6.2 on page 71 to help you capture key points from this discussion. (Italicized entries on the worksheet are examples to show you how the worksheet might be completed.)

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Worksheet 6.2 – Clinical Supply Needs for <Hazard Scenario>

Department	Supplies Needed	Quantity Needed	More Than What Is On Hand?	When Will It Be Needed?	What Can Be Stockpiled Prior To Hazard?	What Additional Supplies Are Needed?
ED	<i>PPE for infectious diseases (e.g., respiratory, contact, blood-borne)</i>	<i>Lots. One for every staff member doing work</i>	<i>Yes. We have plenty of PPE, but only two powered air purifying respirators (PAPRS)</i>	<input checked="" type="checkbox"/> Immediately <input type="checkbox"/> 24 to 48 hours <input type="checkbox"/> 48 to 96 hours <input type="checkbox"/> 1 week	<i>One for every staff member for each shift for 3 days, plus any quantities needed for fit testing or training</i>	<i>Supplies for decontamination (e.g., bleach wipes)</i>
CCU				<input type="checkbox"/> Immediately <input type="checkbox"/> 24 to 48 hours <input type="checkbox"/> 48 to 96 hours <input type="checkbox"/> 1 week		
ICU				<input type="checkbox"/> Immediately <input type="checkbox"/> 24 to 48 hours <input type="checkbox"/> 48 to 96 hours <input type="checkbox"/> 1 week		
Laboratory				<input type="checkbox"/> Immediately <input type="checkbox"/> 24 to 48 hours <input type="checkbox"/> 48 to 96 hours <input type="checkbox"/> 1 week		
OR				<input type="checkbox"/> Immediately <input type="checkbox"/> 24 to 48 hours <input type="checkbox"/> 48 to 96 hours <input type="checkbox"/> 1 week		
Pharmacy				<input type="checkbox"/> Immediately <input type="checkbox"/> 24 to 48 hours <input type="checkbox"/> 48 to 96 hours <input type="checkbox"/> 1 week		

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Miscellaneous

One final topic to discuss is the potential for your hospital to become a community gathering place during this hazard scenario as was the case with some hospitals during Hurricane Sandy in 2012. In order to determine how the supply chain department fits into this situation, ask the following questions:

- What is the role of the supply chain department in helping to provide the following resources? What assistance or supplies is the department expected to provide in conjunction with these resources?
 - Shelter
 - Food
 - Family support
 - Pet care
 - Sanitation and comfort care (i.e., additional "creature comforts" that we might not normally have on hand)

Use Worksheet 6.3 below to capture this information.

Worksheet 6.3 – Miscellaneous Supply Needs for <Hazard Scenario>

Logistical Item	Role of Supply Department	Expectations of Supply Department
Shelter		
Food		
Family support		
Pet care		
Sanitation and comfort care		
Other: _____		
Other: _____		
Other: _____		

- End of Discussion Guide -

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Meet with Ancillary Staff

After you have met with your primary staff and collected information on their supply needs during each hazard scenario, you will need to meet with your ancillary staff—the people who provide the support services that allow the healthcare facility or system to function properly—to determine their needs during each hazard scenario. Examples of ancillary staff positions are shown below.

Examples of Ancillary Staff Positions

Position	Position
Facility management	Food services
Safety	Laundry services
Security	Janitorial services

Each of these positions will have special supply needs based on the hazard scenario encountered. Meeting with them as a group or separately will help you to identify these supply needs. You will need to brief them on the information you collected from your discussions with primary staff so that they can understand how the staff they will be supporting will be functioning in the given hazard scenario. After you have briefed them, ask the following questions:

- Have we missed anything in our discussions with primary staff?
- What is the role of the supply chain department in helping you to provide your support services? What assistance or supplies are department personnel expected to provide in conjunction with
 - Facility management?
 - Safety?
 - Security?
 - Food services?
 - Laundry services?
 - Janitorial services?
 - Other support services?

Use Worksheet 6.4 below to capture this information.

Worksheet 6.4 – Support Services Supply Needs for <Hazard Scenario>

Logistical Item	Role of Supply Department	Expectations of Supply Department
Facility Management		
Safety		
Security		
Food services		
Laundry services		
Janitorial services		
Other: _____		
Other: _____		
Other: _____		

COMPARE SUPPLY NEEDS

After you and your planning team have met with primary and ancillary staff, next you need to compare the lists of needed supplies you have compiled for each hazard scenario (using Worksheets 6.2, 6.3, and 6.4). The purpose of this comparison is to identify commonalities among the needed supplies. These common supplies will serve as the core supplies for your hospital's or system's all-hazard cache. Use Worksheet 6.5 on page 79 to list the supplies that are common to all of the hazard scenarios you discussed.

ACCOUNT FOR SPECIAL SUPPLY REQUIREMENTS

Some of the supplies you listed in Worksheet 6.5 may have special storage requirements (e.g., refrigeration) or may have special rotation requirements. You will need to research any special requirements for these supplies and then enter these requirements in the appropriate column on the worksheet.

DETERMINE IF YOU CAN STOCKPILE THESE SUPPLIES

In the appropriate column of Worksheet 6.5 check the box that corresponds to

- Cache? – Is this supply item something that we can actually stockpile?
- Agreement(s) needed? – Is this supply item something that we will need to have agreements in place to obtain during a disaster?

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LIST ADDITIONAL NEEDED SUPPLIES

Upon completion of Worksheet 6.5, you and your planning team should review the three worksheets you completed for each scenario (Worksheets 6.2, 6.3, and 6.4) and scratch off the items you added to the common supplies list. What is left is the additional supplies you need to add to your all-hazards cache. Use Worksheet 6.6 on page 83 to list these additional supplies needed to support the hazard scenarios.

ACCOUNT FOR SPECIAL SUPPLY REQUIREMENTS

As with your list of common supplies, some of the supplies you listed in Worksheet 6.6 may have special storage requirements (e.g., refrigeration) or may have special rotation requirements. You will need to research any special requirements for these supplies and then enter these requirements in the appropriate column on the worksheet.

DETERMINE IF YOU CAN STOCKPILE THESE SUPPLIES

In the appropriate column check the box that corresponds to

- Cache? – Is this supply item something that we can actually stockpile?
- Agreement(s) needed? – Is this supply item something that we will need to have agreements in place to obtain during a disaster?

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Worksheet 6.6 – Additional Supplies for All-Hazards Cache

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DEVELOP YOUR ALL-HAZARDS CACHE

After you have completed Worksheets 6.5 and 6.6, you and your planning team should look at your list of supplies to determine the timeframe for which each supply item is needed. Supplies that will be needed immediately most likely will make up your all-hazards cache. Next you should estimate the amount of each supply item needed. When estimating the amount of supplies needed and when they are needed, take into account these factors for each hazard scenario you discussed:

- Types of patients (i.e., injuries or symptoms) you would expect to encounter
- Number of patients who will need the supplies
- Number of staff who will need supplies
- Duration of each hazard scenario

You and your planning team should document the supplies needed, when they will be needed, and approximately how much will be needed. You will need this information when the time comes for you to procure these supplies or to explain why you are procuring them.

As you are developing your all-hazards cache, you should include your supply vendor representatives in your discussions about needed supplies. Your vendors will be able to tell you what they can provide, how much they can provide, and when they can provide it. Having this information will allow you to initiate agreements or contracts with other vendors to make up for shortfalls or to have a back-up supply channel in place.

QUESTIONS TO CONSIDER

Before you move on to the next chapter, please consider the questions listed in the table below.

Questions	Response Complete?
For purchased cached items, how and when will you acquire them (e.g., in bulk, in phases, end-of-year funding, one-time funding)? How will you fund/maintain this cache of supplies in the long term?	Yes <input type="checkbox"/> No <input type="checkbox"/>
For cached items you will get through agreements, how will you establish and maintain these agreements? How can you ensure a vendor will provide agreed upon services in the event of an emergency?	Yes <input type="checkbox"/> No <input type="checkbox"/>

Questions	Response Complete?
How will you maintain an inventory and rotation schedule for your all-hazards cache to ensure it remains viable whenever it is needed?	Yes <input type="checkbox"/> No <input type="checkbox"/>
How will you integrate your all-hazards cache or external support services (e.g., government resources) into your normal chain department operations during an emergency?	Yes <input type="checkbox"/> No <input type="checkbox"/>
How will you plan, train, and exercise your supply chain department personnel for the general response operations that are common to the hazard scenarios identified as likely to impact your facility or system?	Yes <input type="checkbox"/> No <input type="checkbox"/>
How will you plan, train, and exercise for singular events that will have a unique impact on your supply chain department and your hospital or system?	Yes <input type="checkbox"/> No <input type="checkbox"/>
What will be the availability of the supply chain system to support supply requests during the response to the hazard scenario?	Yes <input type="checkbox"/> No <input type="checkbox"/>
How often will you review your all-hazards cache to ensure it and the supported operations, agreements, and materials stay viable?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Could external expertise or support (e.g., government partners, consultants) help you with these planning and preparedness activities? If so, who would you ask to help you?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Has a protocol been developed for the management and movement of patients if key supplies in your all-hazards cache run out and cannot be replenished in a timely manner?	Yes <input type="checkbox"/> No <input type="checkbox"/>

CONCLUSION

The purpose of this chapter was to provide you with a framework for identifying common resources and supplies among your priority hazard scenarios, which form the basis for your all-hazards cache. Once you and your team have documented the supplies needed for your cache, what do you do next? Turn to the next chapter to find out.

Chapter 7 – Conclusion

WHAT TO DO NEXT

The contents of your all-hazards cache may change based on the outcomes of exercises or drills, events that have occurred in other parts of the country, or to actual hazard scenarios to which your facility or system has to respond. When this happens, you and your planning team will need to conduct an after-action survey with the primary and ancillary staff who helped you to develop the cache in Chapter 6. This will help you to alter or refine your cache, if necessary.

Questions to consider asking primary and ancillary staff are provided in Worksheet 7.1 below.

Worksheet 7.1 – After-Action Survey Questions

Questions	
Did we have any shortages of supplies?	Yes <input type="checkbox"/> No <input type="checkbox"/>
What were these supplies?	
What supplies were needed for the response to this hazard scenario that we did not consider in our previous work?	
What supplies did we overstock (i.e., have much more than expected)?	
What equipment, logistical support, and other management functions were the supply chain manager asked to provide?	
What non-MCM supply chain functions were the supply chain manager asked to perform in addition to obtaining and distributing medical supplies?	
How efficient was supply chain department communication, inventory/task tracking, and other performances during the event?	

Based on the answers to these questions, you should reassess the contents and quantities of your all-hazards cache and make any corrections that you and your team deem necessary. If your facility or system experiences another hazard scenario, then you will need to go through this process again.

Appendix A – Sample Scenarios

OVERVIEW

This appendix contains short narratives of the 10 scenarios listed below. The purpose of these scenarios is to help guide discussion on identifying supplies needed for the response to the three hazard scenarios you and your planning team identified as most likely to impact your healthcare facility or system. You and your planning team can use these scenarios as templates to build a scenario more applicable to your healthcare facility or system and your community. If one or more of your priority hazards is not covered in this appendix, you and your planning team will need to develop those scenarios. If you think others within the facility or system need to be involved in the development process, then include them as well.

List of Scenarios with No Notice and with Notice

Hazard – No Notice	Hazard – With Notice
Chemical spill	Blizzard/snow storm
Earthquake	Flood
Large-scale fire	Hurricane
Mass-casualty incident	Influenza pandemic
Tornado/derecho	
Novel, highly pathogenic disease	

NOTE: References and resources are listed for each scenario in this appendix. However, these lists are not all inclusive and should not be construed to mean that CDC endorses one reference or resource over another. These lists represent just a sampling of useful information available on the Internet that you can use to develop realistic scenarios to benefit your planning and preparedness efforts.

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No-Notice Scenario 1 – Chemical Spill

Situation

A train transporting liquefied chlorine gas derailed near your community during business hours. Approximately 60 tons of liquefied chlorine spill out of a ruptured freight car. The liquefied gas vaporizes rapidly, with volumetric expansion of 450:1. A 15-mile-per-hour wind blows the gas into the community and, in particular, toward your facility.

Impact to Infrastructure

- Damage to rail system
- Possible need to evacuate 40% of your community
- Possible need to evacuate your facility

Impact to Population

- 40% evacuated
- 1% injured
- 1% dead

Types of Injuries/Illnesses

- Respiratory distress from chlorine gas exposure
- Crush injuries, lacerations, punctures, concussions, contusions from the train derailment

Special Considerations

- Your facility could become a public shelter from escaping chlorine gas
- Your facility's employees might be overly concerned about family members and others

References/Resources

- Burgess JL. [Hospital evacuations due to hazardous materials incidents](#). Am J Emerg Med. 17 (1999)
- Greenberg MI, Jurgens SM, Gracely EJ. [Emergency department preparedness for the evaluation and treatment of victims of biological or chemical terrorist attack](#). J Emerg Med. 2002 Apr; 22(3): 273-278. doi:10.1016/S0736-4679(02)00427-4
- Kirk M, Iddins, C. [Resources for Toxicologic and Radiologic Information and Assistance](#). Emerg Med Clin N Am. 2015 Feb; 33(1): 69-88. doi:10.1016/j.emc.2014.09.007
- Murray V, Goodfellow F. [Mass casualty chemical incidents—towards guidance for public health management](#). Public Health. 2002 Jan; 116(1): 2-14
- Runkle JR, Zhang H, Karmaus W, Brock-Martin A, Svendsen ER. [Long-term impact of environmental public health disaster on health system performance: experiences from the Graniteville, South Carolina chlorine spill](#). South Med J. 2013 Jan; 106(1): 74-81. doi: 10.1097/SMJ.0b013e31827c54fc

NO-NOTICE SCENARIO 2 – EARTHQUAKE

Situation

Your community is struck by a magnitude 7.5 earthquake at dawn. The epicenter of the quake is located 20 miles from your community. A magnitude 3.5 aftershock occurs less than 1 hour later.

Impact to Infrastructure

- 50% of buildings in community are damaged or destroyed
- 75% of roads are damaged and impassable
- Communication systems are completely down
- Water and sewer systems are severely damaged

Impact to Population

- 50% displaced
- 35% injured
- 15% dead

Types of Injuries/Illnesses

- Primary – Crush injuries, lacerations, punctures, concussions, contusions
- Secondary – Exposure, infections

Special Considerations

- You may need to evacuate your facility
- Your facility may be asked to take the load of patients from a damaged facility in your community
- Your facility could become a community gathering place

References/Resources

- Arbon P. [Applying lessons learned to the Haiti Earthquake response](#). Aust Emer Nursing J. 2010 May; 13(1-2): 4-6
- Ardagh MW, Richardson SK, Robinson V, Than M, Gee P, Henderson S, et al. [The initial health-system response to the earthquake in Christchurch, New Zealand, in February, 2011](#). The Lancet Inf Dis. 2012 June; 379(9831): 2109-2115
- Bissell RA, Pinet L, Nelson M, Levy M. [Evidence of the effectiveness of health sector preparedness in disaster response: The example of four earthquakes](#). J Health Prom Main. 2004 Jul-Sep; 27(3): 1933-203
- Fariborz Nateghi-Alahi, Yasamin O. Izadkhah, (2004) [Earthquake disaster management planning in health care facilities](#). Dis Prev Mngmt. 13(2): 130-135

NO-NOTICE SCENARIO 3 – LARGE-SCALE FIRE

Situation

A severe drought combined with strong winds in your region has contributed to a wildfire spreading rapidly through fields and forests. The fire is overtaking residential areas in your community, causing the evacuation of those residences. Smoke is blowing into the center of your community, and it gets thicker as time progresses.

Impact to Infrastructure

- Loss of property in the community
- Some roadways blocked or partially blocked, limiting access to critical areas

Impact to Population

- Displacement
- Mental anguish

Types of Injuries/Illnesses

- Primary – Inhalation injuries, burns, heat exhaustion
- Secondary – Fatigue

Special Considerations

- You may need to evacuate your facility
- Your facility may be asked to take the load of patients from a damaged facility in your community
- Community members could lack access to needed medical care
- First responders may require care because of their increased presence

References/Resources

- Barnett J, Dennis-Rouse M, Martinez V. [Wildfire disaster leads to facilities evacuation](#). Orthop Nurs. 2009 Jan-Feb; 28(1): 17-20. doi: 10.1097/01.NOR.0000345849.32424.0a
- Davidson JE, Sekayan A, Agan D, Good L, Shaw D, Smilde R. [Disaster Dilemma: Factors Affecting Decision to Come to Work During a Natural Disaster](#). Adv Emerg Nursing J. 2009 Jul-Sep; 31(3): 248-257
- Hoyt SK, Gerhart AE. [The San Diego County wildfires: perspectives of healthcare](#). Dis Mngmt Resp. 2004 Apr-Jun; 2(2): 46-52.
- Keefe A, Atabaki N, Jenkins P, Rideout K. [Evidence Review: Filtration in institutional settings during wildfire smoke events](#). Disaster Manag Response. 2004; 2: 46-52.
- Kulig JC, Edge D, Smolenski S. [Wildfire disasters: Implications for rural nurses](#). Aust Emerg Nurs J. 2014 Aug; 17(3): 126-134.

NO-NOTICE SCENARIO 4 – MASS-CASUALTY INCIDENT

Situation

An annual festival is held in your community. It draws thousands of people. Many are from outside of your community. Within the span of 60 seconds, three terrorist bombs explode in different sections of the festival. One of those sections is mostly made up of children.

Impact to Infrastructure

- Blocked roads leading into the scene because of chaos
- Blocked roads leading into your facility because of chaos
- Concerns that more bombs may be in the community

Impact to Festival Goers

- 25% injured
- 10% dead
- Mental anguish

Types of Injuries/Illnesses

- Primary – Loss of limb, loss of blood, severe trauma, lacerations, punctures, concussions, contusions
- Secondary – Mental trauma

Special Considerations

- Emergency responders may be delayed getting to the scene and getting to your facility
- Patients may be driven to your facility in private vehicles
- Pediatric providers/specialists and pediatric beds in the immediate area may be limited; regional resources may need to be considered to treat children.
- Parents may show up and demand to see their children

References/Resources

- Augustine J, Schoettmer JT. [Evacuation of a Rural Community Hospital: Lessons Learned From an Unplanned Event](#). Dis Mngmt Resp, 2005 Jul-Sep; 3(3): 68-72
- Farmer JC, Carlton PK. [Providing critical care during a disaster: The interface between disaster response agencies and hospitals](#). Crit Care Med. 2006 Mar; 34(3): 56-59
- [Hospital preparedness for a mass casualty event](#). AORN J. 2014 Sep; 100(3): C9-C10. doi:10.1016/S0001-2092(14)00851-5
- Johnson GA, Calkins A. [Prehospital triage and communication performance in small mass casualty incidents: A gauge for disaster preparedness](#). Am J Emerg Med, 1999 Mar; 17(2): 148-150. doi:10.1016/S0735-6757(99)90048-7

NO-NOTICE SCENARIO 5 – UNKNOWN, NOVEL, HIGHLY PATHOGENIC DISEASE

Situation

A 33-year-old man presents to your facility's emergency department (ED) with a high fever, respiratory distress, and a rash on his arms and legs of unknown origins. Questioning by ED workers reveals that he has just returned from a 2 month stint as a healthcare worker in the jungles of South America where local news media have reported the occurrence of a mysterious, highly infectious disease. He returned to your community 1 week ago. His symptoms first appeared 1 day later. He went to a local walk-in clinic for treatment. Personnel there prescribed an antiviral medication, which has not had an effect on the man's symptoms. In fact, his symptoms have gotten worse.

Impact to Infrastructure

- Primary – Initially, none
- Secondary – Possible limited access to your facility

Impact to Population

- Possible exposure of healthcare workers and the general population to an unknown disease
- Potential for widespread infections and deaths in your facility and in the community
- Potential for quarantine measures to be enacted

Types of Illness

Unknown until more investigative work can be completed

Special Considerations

- You may have to track workers and patients exposed to this patient
- You may have workers who will not want to come to work because they fear being exposed
- Your facility may become known as "that infected hospital"

References/Resources

- Brandeau ML, Hutton DW, Owens DK, Bravata DM. [Planning the bioterrorism response supply chain: learn and live](#). Am J Disaster Med. 2007 Sep-Oct; 2(5): 231-47
- Boin A, Kelle P, Whybark DC. [Resilient supply chains for extreme situations: Outlining a new field of study](#). Int J Production Econ. 2010 Jul; 126(1): 1-6
- Cupp OS, Predmore BG. [Planning for the next influenza pandemic: using the science and art of logistics](#). Am J Disaster Med. 2011 Jul-Aug; 6(4): 243-54
- Hick JL, Hanfling D, Cantrill SV. [Allocating Scarce Resources in Disasters: Emergency Department Principles](#). Ann of Em Med. 2012 Mar; 59(3): 177-187

NO-NOTICE SCENARIO 5 – TORNADO

Situation

An EF5 tornado strikes a heavily populated²⁰ section of your community during business hours. Homes are destroyed. Included in the destruction is an elementary/middle/high school or a college/university²¹.

Impact to Infrastructure

- Roads in and out of the damaged areas are impassable
- Power is out in 50% of the community
- Water and sewer systems have been shut down
- Communication systems are damaged

Impact to Population

- 40% injured in the heavily populated section
- 10% dead in the heavily populated section
- 50% injured in the elementary/middle/high school or college/university
- 15% dead in the elementary/middle/high school or college/university

Types of Injuries/Illnesses

- Primary – Crush injuries, lacerations, punctures, concussions, contusions
- Secondary – Mental trauma, gastro-intestinal illnesses

Special Considerations

- The tornado could hit your facility
- Your facility may be asked to take the load of patients from a damaged facility in your community

²⁰ Choose the most populated section of your community for this scenario. This will help you determine the number of injuries and fatalities.

²¹ Choose the type(s) of school(s) in your community with the most students.

- One or more shifts at your facility could be impacted by the tornado

References/Resources

- Charney R, Rebmann T, Flood RG. [Working after a tornado: a survey of hospital personnel in Joplin, Missouri](#). Biosecur Bioterror. 2014 Jul-Aug; 12(4): 190-200. doi: 10.1089/bsp.2014.0010
- May BM, Hogan DE, Feighner KR. [Impact of a tornado on a community hospital](#). J Am Osteopath Assoc. 2002 Apr; 102(4): 225-8
- Porth L. [Preparedness and Partnerships: Lessons Learned from the Missouri Disasters of 2011](#). Missouri Hospital Association. 2012
- Reynolds, M. [The Joplin Tornado: The Hospital Story and Lessons Learned](#). Mercy Health.
- Smith PW, Denton R, Denton R, Manley D, Smith J, Tinney R, et al. [Joplin: Preparedness Lessons from a Devastating Tornado](#). Dis Prep. 2014 May: 291-309

WITH-NOTICE SCENARIO 1 – BLIZZARD/SNOW STORM

Situation

Meteorologists give you a 3-day notice that a 100-year snow storm will occur in your community. The storm lives up to expectations, dumping over 30" of snow over the region. Gusting winds create blizzard conditions and create high banks of snow. Temperatures are forecasted to remain below freezing for at least 3 weeks. The snow will not be going away soon.

Impact to Infrastructure

- Major roadways in your community are blocked or impassable
- More than 50% of the community has lost power

Impact to Population

- Lack of access to medical care
- Loss of heat in homes

Types of Injuries/Illnesses

- Primary – Normal day-to-day injuries and illnesses; slips, trips, and falls; heart attacks
- Secondary – Frostbite, hypothermia, exacerbated injuries/illnesses because of lack of access to medical care

Special Considerations

- One or more shifts at your facility could be impacted by the blizzard
- Vendors may not be able to make deliveries
- Patients may be driven to your facility in private vehicles or other means of transportation

References/Resources

- Kunkel A, McLay LA. [Determining minimum staffing levels during snowstorms using an integrated simulation, regression, and reliability model.](#) Health Care Manag Sci. 2013 Mar; 16(1): 14-26. doi: 10.1007/s10729-012-9206-y
- Muscatiello NA, Babcock G, Jones R, Horn E, Hwang S. [Hospital Emergency Department Visits for Carbon Monoxide Poisoning Following an October 2006 Snowstorm in Western New York.](#) J of Envir Health. 2010 Jan-Feb; 72(6): 43-48
- Piercefield E, Wendling T, Archer P, Mallonee S. [Winter storm-related injuries in Oklahoma, January 2007.](#) J Safety Res. 2011 Feb; 42(1): 27-32
- Prezant DJ, Clair J; Belyaev S; Allenyne D, Banauch GI, Davitt M, et al. [Effects of the August 2003 blackout on the New York City healthcare delivery system: A lesson for disaster preparedness.](#) Critical Care Med. 2005 Jan; 33(1): 96-101
- Vangerud T. [Emergency preparedness for an extended utility outage.](#) Dis Mngmt Resp. 2003 Oct-Dec; 1(4): 119-121

WITH-NOTICE SCENARIO 2 – FLOOD

Situation

The annual ice/snow melt²² is predicted to be heavier than normal, which will cause the river flowing through your community to exceed flood stage and spill into the community. As predicted, the river rises to over _____ feet (fill in the blank) above flood stage. The water pushes far into the community.

Impact to Infrastructure

- Businesses and homes flooded
- Roads blocked or washed out by flood waters
- Utilities knocked out or taken offline

Impact to Population

- Possible lack of access to medical care
- Mental anguish

Types of Injuries/Illnesses

- Primary – Drownings, increased gastro-intestinal illnesses
- Secondary – Snake bites; mental trauma

Special Considerations

- Your facility could be flooded
- Your facility could become a community gathering place

²² This scenario could be modified to incorporate an impending tropical storm moving into your community.

References/Resources

- Apisarnthanarak A, Mundy LM, Khawcharoenporn T, Glen MC. [Hospital infection prevention and control issues relevant to extensive floods](#). Infect Control Hosp Epidemiol. 2013 Feb; 34(2): 200-6. doi: 10.1086/669094
- Dhanoa T, Fuller H, Herechuk B, Trowbridge S, Raab V, MacDonald AM, et al. [Response to a Serious Flood: The St Joseph's Healthcare Experience](#). Healthc Q. 2014; 17(4): 58-62
- McGlown KJ, Fottler MD. [The impact of flooding on the delivery of hospital services in the southeastern United States](#). Health Care Manage Rev. 1996 Summer; 21(3): 55-71
- Peters MS. [Hospitals respond to water loss during the Midwest floods of 1993: Preparedness and improvisation](#). J Emer Med. 1996 May-Jun; 14(3): 345-350
- Siders C, Jacobson R. [Flood disaster preparedness: a retrospect from Grand Forks, North Dakota](#). J Healthc Risk Manag. 1998 Spring; 18(2): 33-40

WITH-NOTICE SCENARIO 3 – HURRICANE

Situation

The National Oceanic and Atmospheric Administration (NOAA) has been watching a storm forming in the ocean. NOAA initially predicts the storm to reach hurricane status and make landfall within 50 miles of your community. Three days later, it becomes a Category 3 hurricane with 120-mile-per-hour winds and, as it approaches the coast, it appears to be headed directly towards your community. One day later it makes a direct strike on your community during the middle of the night.

Impact to Infrastructure

- Businesses and homes damaged or destroyed
- Roads blocked or destroyed
- Utilities damaged or destroyed

Impact to Population

- 15% injured
- 5% dead
- Possible lack of access to medical care
- Mental anguish

Types of Injuries/Illnesses

- Primary – Blunt-force trauma, crush injuries, lacerations, punctures, concussions, contusions
- Secondary – Mental trauma, gastro-intestinal illnesses

Special Considerations

- Your facility could be severely damaged by the hurricane
- One or more shifts at your facility could be impacted by the hurricane
- Your facility may be asked to take the load of patients from a damaged facility in your community
- Your facility could become a community gathering place

References/Resources

- Lien C, Raimo J, Abramowitz J, Khanijo S, Kritharis A, Mason C, Jarmon CH, Nash IS, Carney MT. [Community healthcare delivery post-Hurricane Sandy: lessons from a mobile health unit](#). J Community Health. 2014 Jun;39(3):599-605. doi: 10.1007/s10900-013-9805-7
- Lin CJ, Pierce LC, Roblin PM, Arquilla B. [Impact of Hurricane Sandy on hospital emergency and dialysis services: a retrospective survey](#). Prehosp Disaster Med. 2014 Aug; 29(4): 374-9. doi: 10.1017/S1049023X14000715
- Sexton KH, Alperin LM, Stobo JD. [Lessons from Hurricane Rita: the University of Texas Medical branch Hospital's evacuation](#). Acad Med. 82 (2007)

WITH-NOTICE SCENARIO 4 – INFLUENZA PANDEMIC

Situation

A novel strain of influenza first appears in Southeast Asia and, within 2 weeks, spreads around the world, upon which time the World Health Organization declares it an influenza pandemic. The disease has now reached your community. It is mostly impacting those under the age of 25 and over the age of 60. No vaccine is available for the virus. The current version of the annual influenza vaccine offers no protection.

Impact to Infrastructure

None

Impact to Population

- 60% of those under the age of 25 and over the age of 60 infected
- 10% of those under the age of 25 and over the age of 60 who are infected die
- 25% of the rest of the community infected
- 5% of the rest of the community who are infected die

Types of Illness

- Primary – Influenza-like illness
- Secondary – The "worried well"

Special Considerations

- An influenza pandemic will result in long-term stress on your employees and the members of your community
- Vendors may run short of needed supplies
- If the pandemic becomes severe enough, your community may need to activate its crisis standards of care plan

References/Resources

- Kanter RK. [Pediatric mass critical care in a pandemic](#). Ped Critical Care Med. 2012 Jan; 13(1): 1-4. doi: 10.1097/PCC.0b013e3181fe390a
- Levin D, Cadigan RO, Biddigner P, Condon S, Howard KK. [Altered Standards of Care During an Influenza Pandemic: Identifying Ethical, Legal, and Practical Principles to Guide Decision Making](#). Dis Med Pub Health Prep. 2009 Dec; 3(2): 132-140
- Levin PJ, Gebbie EN, Qureshi K. [Can the health-care system meet the challenge of pandemic flu? Planning, ethical, and workforce considerations](#). Public Health Rep. 2007 Sep-Oct; 122(5): 573–578

Appendix B – Abbreviations and Acronyms

PREPAREDNESS ACRONYMS

CCU.....	Critical Care Unit
CERT	Community Emergency Response Team
COOP	Continuity of Operations Plan
DMAT	Disaster Medical Assistance Team
DMORT.....	Disaster Mortuary Operational Response Team
ED	Emergency Department
EMAC.....	Emergency Management Assistance Compact
EOC.....	Emergency Operations Center
EOP	Emergency Operations Plan
ESAR-VHP	Emergency System for Advance Registration of Volunteer Health Professionals
ESF.....	Emergency Support Function
FMS	Federal Medical Station
HICS	Hospital Incident Command System
HVA	Hazard Vulnerability Analysis
IC	Incident Commander
ICU.....	Intensive Care Unit
IMS	Inventory Management System
LPHD.....	Local Public Health Department
MCM.....	Medical Countermeasure
MRC.....	Medical Reserve Corps

NDMS	National Disaster Medical System
NVOAD	National Voluntary Organizations Active in Disasters
NVRT.....	National Veterinary Response Team
OR.....	Operating Room
PAPR.....	Powered Air Purifying Respirators
PPE	Personal Protective Equipment
SME	Subject Matter Expert
SNS	Strategic National Stockpile
SPHD.....	State Public Health Department

ORGANIZATIONAL ACRONYMS

AHRMM.....	Association for Healthcare Resources and Materials Management
CDC.....	Centers for Disease Control and Prevention
DHS.....	U.S. Department of Homeland Security
FEMA	Federal Emergency Management Agency
HHS.....	U.S. Department of Health and Human Services
HPRT	Healthcare Preparedness and Response Team
NOAA.....	National Oceanic and Atmospheric Administration
ORAU	Oak Ridge Associated Universities
ORISE	Oak Ridge Institute for Science and Education
VA.....	U.S. Department of Veteran's Affairs