
Introduction

In this unit you will put together all of the skills and knowledge you have learned from previous units and develop a functional exercise. In Unit 4, you learned the eight exercise design steps:

1. Assess needs.
2. Define scope.
3. Write a statement of purpose.
4. Define objectives.
5. Compose a narrative.
6. Write major and detailed events.
7. List expected actions.
8. Prepare messages.

You have already practiced applying each of the design steps individually. Now you will put these steps together in one coordinated process. As an option, you may also develop the four major exercise documents (templates for which are found in the Exercise Design Tool Kit at <http://training.fema.gov/emiweb/IS/is1391st.asp>):

- Exercise Plan
- Control Plan
- Evaluation Plan
- Player Handbook

Unit 10 Objectives

After completing this unit, you should be able to:

- Design a small functional exercise using the eight-step design process.

Select Your Exercise

In Unit 2, you outlined a comprehensive exercise program for your organization. Review that outline now. If you wish to revise or update the outline, you may do so.

Select a small functional exercise from your comprehensive plan. The exercise you choose should be fairly small, for the sake of the time required to complete this course activity. If necessary, you may artificially limit a functional exercise in your plan.

If you used a functional exercise as the basis of your abbreviated design activities in Unit 4, you may either use the same exercise here (and develop it now in depth) or select a new one.

When you have selected your exercise, you may proceed with the design steps, as outlined in the remainder of this unit. As you undertake each design step, feel free to go back to earlier units and review the guidelines and examples that are provided.

Step 1: Assess Needs

The first step in developing any exercise is to assess the needs of your emergency management program. Indicate below the most pressing problem areas in your community or organization. Base your assessment on your review of the emergency plans and procedures and what you have learned from previous exercises or emergencies.

Exercise Needs Assessment

1. Hazards

List the various hazards in your community or organization. What risks are you most likely to face? You can use the following checklist as a starting point. **Note:** If your community has already conducted a hazard analysis, that is the best resource.

- | | |
|--|--|
| <input type="checkbox"/> Airplane crash | <input type="checkbox"/> Sustained power failure |
| <input type="checkbox"/> Dam failure | <input type="checkbox"/> Terrorism |
| <input type="checkbox"/> Drought | <input type="checkbox"/> Tornado |
| <input checked="" type="checkbox"/> Epidemic (biological attack) | <input type="checkbox"/> Train derailment |
| <input type="checkbox"/> Earthquake | <input type="checkbox"/> Tsunami |
| <input type="checkbox"/> Fire/urban conflagration | <input type="checkbox"/> Volcanic eruption |
| <input type="checkbox"/> Flood | <input type="checkbox"/> Wildfire |
| <input type="checkbox"/> Hazardous material spill/release | <input type="checkbox"/> Winter storm |
| <input type="checkbox"/> Hurricane | <input type="checkbox"/> Workplace violence |
| <input type="checkbox"/> Landslide/mudslide | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Mass fatality incident | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Radiological release | <input type="checkbox"/> Other _____ |

Step 1: Assess Needs (Continued)

2. Secondary Hazards

What secondary effects from those hazards are likely to impact your organization?

- Communication system breakdown
 - Power outages
 - Transportation blockages
- Business interruptions
 - Mass evacuations/displaced population
- Overwhelmed medical/mortuary services
 - Other _____
 - Other _____
 - Other _____
 - Other _____
 - Other _____

3. Hazard Priority

What are the highest priority hazards? Consider such factors as:

- Frequency of occurrence.
- Relative likelihood of occurrence.
- Magnitude and intensity.
- Location (affecting critical areas or infrastructure).
- Spatial extent.
- Speed of onset and availability of warning.
- Potential severity of consequences to people, critical facilities, community functions, and property.
- Potential cascading events (e.g., damage to chemical processing plant, dam failure).

**#1 Priority hazard:
Hospital and Clinics overwhelmed**

**#2 Priority hazard:
Severity of disease on public**

**#3 Priority hazard:
Business interruptions due to absentees**

Step 1: Assess Needs (Continued)

4. Area

What geographic area(s) or facility locations are most vulnerable to the high priority hazards?

N/A all areas could be affected

5. Plans and Procedures

What plans and procedures—emergency response plan, contingency plan, operational plan, Standard Operating Procedures (SOPs)— will guide your organization’s response to an emergency?

Local Health Dept. Surveillance and Notifications Plans; Hospital Surveillance Plan
Local Pandemic Plan (Annex)

6. Functions

What emergency management functions are most in need of rehearsal? (e.g., What functions have not been exercised recently? Where have difficulties occurred in the past?) You can use the following checklist as a starting point.

- | | |
|---|---|
| <input checked="" type="checkbox"/> Alert Notification (Emergency Response) | <input type="checkbox"/> Public Safety |
| <input checked="" type="checkbox"/> Warning (Public) | <input type="checkbox"/> Public Works/Engineering |
| <input checked="" type="checkbox"/> Communications | <input type="checkbox"/> Transportation |
| <input checked="" type="checkbox"/> Coordination and Control | <input type="checkbox"/> Resource Management |
| <input checked="" type="checkbox"/> Emergency Public Information | <input type="checkbox"/> Continuity of Government or Operations |
| <input type="checkbox"/> Damage Assessment | <input type="checkbox"/> Other _____ |
| <input checked="" type="checkbox"/> Health and Medical | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Individual/Family Assistance | <input type="checkbox"/> Other _____ |

Step 1: Assess Needs (Continued)

7. Participants

Who (agencies, departments, operational units, personnel) needs to participate in an exercise?
For example:

- Have any entities updated their plans and procedures?
- Have any changed policies or staff?
- Who is designated for emergency management responsibility in your plans and procedures?
- With whom does your organization need to coordinate in an emergency?
- What do your regulatory requirements call for?
- What personnel can you reasonably expect to devote to developing an exercise?

Local Health Dept., Emergency Management Agency, Hospital, Public Information Officers

8. Program Areas

Mark the status of your emergency program in these and other areas to identify those most in need of exercising.

	New	Updated	Exercised	Used in Emergency	N/A
Emergency Plan					
Plan Annex(es) Pandemic	x				
Standard Operating Procedures	x				
Resource List					
Maps, Displays					
Reporting Requirements	x				
Notification Procedures	x				
Mutual Aid Pacts	x				
Policymaking Officials	x				
Coordinating Personnel	x				
Operations Staff	x				
Volunteer Organizations					
EOC/Command Center	x				
Communication Facility	x				
Warning Systems	x				
Utility Emergency Preparedness					

Industrial Emergency Preparedness					
Damage Assessment Techniques					

Step 1: Assess Needs (Continued)**9. Past Exercises**

If your organization has participated in exercises before, what did you learn from them, and what do the results indicate about future exercise needs? For example, consider the following questions:

- Who participated in the exercise, and who did not?
- To what extent were the exercise objectives achieved?
- What lessons were learned?
- What problems were revealed, and what is needed to resolve them?
- What improvements were made following past exercises, and have they been tested?

NA

Step 2: Define the Scope

Working from your needs assessment and the Self-Assessment you completed in Unit 3 about your organization’s readiness for the exercise process, define the scope of the exercise (i.e., draw some meaningful limits). Make decisions according to (a) highest priority and (b) what can be realistically addressed in one exercise. Record your decisions below.

Scope Worksheet

1. Highest priority hazards (major and secondary):
Hospital Emergency Room overwhelmed. Severity of disease in public. Business interruption due to absenteeism.

2. Geographic areas/locations of greatest vulnerability to these hazards:

Area Wide

3. Agencies/departments/organizational units: List below the entities that have a significant role in emergency management/response. Then enter check marks in any columns that apply.

Agency/Organization	Limited experience with major emergencies	New plans, staff, or organizational structure not yet exercised	Problems revealed in prior exercises
Local Health Dept.			
Hospitals			
Emergency Management Agencies			
Public Information Officers			

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Step 2: Define the Scope (Continued)

4. Types/levels of personnel you want to have in the exercise:

- X Policy making (elected officials, chief operating officers, department heads)
- X Coordination (managers, EOC representatives, department deputies)
- X Operations (field personnel, headquarters staff level)
- X Public representatives (media, PIOs, general public)
- Other: _____

5. Types of operations/functions you want participants to engage in (e.g., notification, evacuation):

Surveillance

Notification of elected officials, state health department

Hospital notification of health department

Use of Health Alert Network (HN)

Epidemiologists surveillance of situation

6. Degree of stress, complexity, time pressure the exercise should have:

	High	Mediu m	Low
Stress	<u> x </u>	<u> </u>	<u> </u>
Complexity	<u> </u>	<u> x </u>	<u> </u>
Time pressure	<u> x </u>	<u> </u>	<u> </u>

Step 2: Define the Scope (Continued)

<p>Scope: Discovery and surveillance of the presence of Pandemic flu, followed by the notification of proper officials. Up to the implementation of the Pandemic Flu Plan</p>
<p>Location: Local Health Department.</p>
<p>Functions: Surveillance, notification and implementation.</p>
<p>Organizations and Personnel: Local Health Department, Hospital, Emergency Management, elected officials and state health department</p>
<p>Exercise Type: Table top exercise</p>

Step 3: Write a Statement of Purpose

Develop your statement of purpose using the following template.

Statement of Purpose

The purpose of the proposed emergency management exercise is to improve the following emergency *operations*:

- a. surveillance
- b. notification
- c. implementation

by involving the following *agencies/organizations/departments*:

- a. local health department
- b. state health department
- c. hospitals and healthcare workers
- d. emergency management
- e. elected officials
- f. public information officers

in a tabletop exercise simulating a pandemic influenza outbreak
[type of exercise] *[type of emergency event]*

at a local area in Kansas on (anytime).
[location] *[date]*

Step 4: Define the Objectives

In the space below, write objectives that support the purpose statement you composed in the last step. Remember the SMART system: Simple, Measurable, Achievable, Realistic, Task-oriented. Use extra paper if needed.

Objectives

Obj. No.	Objective	Organization
1.	Test surveillance plan.	All organization
2.	Test notification plan.	Hospitals, local health department, public information officer.
3.	Test the “trigger” to implement plans.	Hospitals, local health department
4.	Test communication strategies.	All organizations
5.	Test the roles that everyone plays, and know who is in control.	All organizations, particularly the local health department.

Step 5: Compose a Narrative

Outline the key points in your narrative using the following worksheet, then compose the script for the initial narrative in your exercise.

Narrative Outline
Event:
How fast, strong, deep, dangerous:
How you found out:
Response made:
Damage reported:
Sequence of events:
Current time:
Advance warning:
Location:

Step 5: Compose a Narrative (Continued)

Relevant weather conditions:

Other factors that would influence emergency procedures:

Predictions:

Step 5: Compose a Narrative (Continued)**Narrative Script**

Pandemic Flu narrative.

On 4-13-2006 twenty patients in a small town called Cherokee from rural Kansas came with cough, flu like illness and difficulty breathing.

They are admitted to Panorama hospital 100 miles east of Shawnee Kansas.

These twenty patients ranged in ages from 5-80 years. Chest X ray revealed a diffuse infiltrate. Laboratory results confirmed H5NI virus.

Out of these 5 died from acute respiratory illness. Most of the dead were elderly.

A team of expert sent to the Cherokee town revealed cases of dead birds a month before, with few more cases of respiratory illness.

The local and State department were alerted with the CDC also informed.

illnesshttp://www.who.int/csr/disease/avian_influenza/guidelines/draftprotocol2006_03_17/en/index.html



Step 6: Write Major and Detailed Events

In the space provided on the following pages, list events that might occur in your emergency scenario. Break down each of the major events into two or three detailed events.

Pandemic Flu Outbreak Emergency Scenario

Major Event: Hospital sees an increased number of patients with flu symptoms.

Detailed events: Hospital personnel responsible for reporting number of patients with flu-like symptoms to the local health department begins reporting.

Major Event: Local Health Department Implements Surveillance Plan

Detailed Events: Local Health Department sees a sharp increase in the number of patients the hospital is receiving that have flu-like symptoms. An increase in a certain number of patients, or an increase from a percent of recorded normal triggers the Epidemiologist to begin surveillance plan.

Epidemiologist alerts Public Information Officer to begin communication with both elected officials and the general public. The Public Information Officer communicates to the public the increase in patients at the hospital with flu-like symptoms, and describes flu-like symptoms. The Public Health Officer communicates to the public to go to the hospital if they are experiencing any of these symptoms. The Public Information Officer communicates to elected officials the increase that has been reported, and will continue to monitor and update them in case quarantine is needed, and government (police, etc.) will need to get involved in case of problems, or to help with the emergency.

Epidemiologist alerts the state health department that they are receiving a rise in patients with flu-like symptoms at the hospital, and reports the numbers they currently have.

Major Event: Hospital Begins to Receive More Patients with flu-like Symptoms than the Hospital has Capacity for.

Detailed Events: Hospital personnel alert local health department that they are receiving more patients with flu-like symptoms than they have capacity for. Local health department personnel implement surge capacity procedures and set up a clinic at a local physician's office. The Epidemiologist notifies the Public Information Officer to update the elected officials and communicate to the public where the additional location to go is. If needed, law enforcement will help with directing traffic and parking at the new site. Epidemiologist reports new status to the state health department and request for assistance for personnel, and testing kits to confirm influenza.

Emergency management is notified of the situation and assistance is requested, especially for those who need assistance getting from their home to the units for care.

Major Event: Patients have Reported to a Care Unit, Assistance has been given and Units See a Decrease in the Amount of New Patients with Flu-Like Symptoms Coming In

Detailed Events: Care is still being given. Each patient is monitored to the best of the ability of the available resources. Decisions are made of who needs to stay in the care units, and who can return to their homes to recover, with instructions on when they need to return for follow-up appointments. Inventories of prescriptions/medications are kept and prescriptions are given to people with the most severe cases of the flu or flu-like symptoms.

Epidemiologist continues to monitor surveillance (over the next few weeks), including number of patients reporting to care units, the number of patients that remain in the care units, the number of patients that have returned for follow-up appointments, and the number and names of medications that have been prescribed/distributed. Epidemiologist reports surveillance to the state health department.

Major Event: Follow-up Meeting after Emergency has Slowed Down or Ceased

Detailed Events: Tabletop meeting to discuss how surveillance plan worked in action. Generalize information the Epidemiologist recorded during event, especially how many patients the hospital and local health department could handle before needing state assistance, and ideas on how to increase this number if it is not deemed sufficient.

Communication breakdowns discussed, including when the communication breakdown happened (if any) and how it could be improved. Determine if there is anything that can be written into the surveillance plan and emergency protocol that would help with either communication, or if an extra step can be added that would eliminate the need for contact of a person before a step in the plan were to occur.

Any other topics that are brought to the table for discussion are discussed.

Step 7: List Expected Actions

For each detailed event, write some actions that you would expect from participants involved in the exercise. Be sure to tie them to specific objectives. (**Note:** You may wish to number the detailed events and expected actions for later reference.)

STEP 7 Expected Actions

In late September an outbreak of severe respiratory illness was noted in southern China. To date there have been 30 cases affecting all age groups; 23 patients have been hospitalized; and six persons have died. Surveillance has been heightened in this region. Viral cultures from patients have tested positive for type A influenza. The CDC has identified a subtype that has never been isolated before in humans, H7N3.

What activities would a community in Kansas engage in related to this information?

Who is in charge at the local level?

By December, human cases are identified in the United States. The CDC reports that the H7N3 virus has been isolated from airline passengers arriving from Hong Kong in Los Angeles, Honolulu, Chicago and New York. State and local agencies have been asked to intensify influenza surveillance. Vaccine manufacturers are working to produce a vaccine to protect against this novel strain of influenza.

What activities would the local health department engage at this point in time?

What responsibilities do hospitals have at this point?

Are there any responsibilities for emergency management or local government?

Who is in charge at the local level?

Who are the key players at this point?

By late December outbreaks have been reported in states along the eastern coast moving inward. Numerous cases have been reported in the states of Illinois, Iowa, Ohio and Missouri. There has been an increase in the number of patients presenting to emergency departments with symptoms consistent with influenza. Residents in Kansas are concerned about an outbreak, national and state news reports that only a very few doses of influenza vaccine are ready for distribution. It is also reported that the supply of vaccine will not be distributed to the general public.

Who is responsible for initiating surveillance in the local community?

How will the reporting of information be managed?

At this time are there any responsibilities for emergency management or local government?

Who are the key players at this point?

Who is in charge at the local level?

STEP 8 - Prepare Messages

<p>Surveillance Exercise Message</p> <p>To: Local Health Department, Emergency Management, Local Hospital</p> <p>Method: Notification sent by e-mail indicating a posting placed on PHIX.</p> <p>From: KDHE</p> <p>Content: Outbreak of severe respiratory illness has been reported in southern China. To date 30 cases have been identified. Persons in all age groups have been affected. 23 patients have been hospitalized and six persons have died. All have tested positive for type A influenza, and a novel strain has been isolated H7N3.</p>	<p>Surveillance Exercise Message</p> <p>To: Local hospital emergency department and local medical practitioners.</p> <p>Method: Memo</p> <p>From: Local health department</p> <p>Content: Severe respiratory illness has been noted in southern China. 30 cases have been identified; 23 patients hospitalized; six deaths reported. All patients have tested positive for type A influenza. A novel strain has been isolated.</p>
<p>Surveillance Exercise Message</p> <p>To: State and local health departments</p> <p>Method: E-mail message and faxed communication.</p> <p>From: CDC</p> <p>Content: H7N3 virus has been isolated from passengers arriving from Hong Kong in Los Angeles, Honolulu, Chicago and New York. State and local health agencies should intensify surveillance for influenza.</p>	<p>Surveillance Exercise Message</p> <p>To: Local Health Departments</p> <p>Method: HAN pager notification, e-mail message and fax.</p> <p>From: KDHE</p> <p>Content: H7N3 virus has been isolated from passengers arriving from Hong Kong in Los Angeles, Honolulu, Chicago and New York. Local surveillance should be initiated. All suspect cases should be tested for influenza type A.</p>

<p>Surveillance Exercise Message</p> <p>To: Local hospital emergency department and local medical practitioners.</p> <p>Method: Phone contact followed by memo.</p> <p>From: Local health department</p> <p>Content: The KDHE as directed by the CDC has requested that local agencies monitor patients for symptoms of influenza. All suspect patients should be tested for influenza. Positive test results should be reported to the local health department for disease investigation.</p>	<p>Surveillance Exercise Message</p> <p>To: Local health department</p> <p>Method: faxed reports</p> <p>From: Local hospital emergency department</p> <p>Content: emergency patient visits, patient who have symptoms of influenza like illness.</p>
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Step 8: Prepare Messages (Continued)

<p style="text-align: center;">Emergency Exercise Message</p> <p>To:</p> <p>Method:</p> <p>From:</p> <p>Content:</p>	<p style="text-align: center;">Emergency Exercise Message</p> <p>To:</p> <p>Method:</p> <p>From:</p> <p>Content:</p>
<p style="text-align: center;">Emergency Exercise Message</p> <p>To:</p> <p>Method:</p> <p>From:</p> <p>Content:</p>	<p style="text-align: center;">Emergency Exercise Message</p> <p>To:</p> <p>Method:</p> <p>From:</p> <p>Content:</p>

Step 8: Prepare Messages (Continued)

<p style="text-align: center;">Emergency Exercise Message</p> <p>To:</p> <p>Method:</p> <p>From:</p> <p>Content:</p>	<p style="text-align: center;">Emergency Exercise Message</p> <p>To:</p> <p>Method:</p> <p>From:</p> <p>Content:</p>
<p style="text-align: center;">Emergency Exercise Message</p> <p>To:</p> <p>Method:</p> <p>From:</p> <p>Content:</p>	<p style="text-align: center;">Emergency Exercise Message</p> <p>To:</p> <p>Method:</p> <p>From:</p> <p>Content:</p>

Step 8: Prepare Messages (Continued)

<p style="text-align: center;">Emergency Exercise Message</p> <p>To:</p> <p>Method:</p> <p>From:</p> <p>Content:</p>	<p style="text-align: center;">Emergency Exercise Message</p> <p>To:</p> <p>Method:</p> <p>From:</p> <p>Content:</p>
<p style="text-align: center;">Emergency Exercise Message</p> <p>To:</p> <p>Method:</p> <p>From:</p> <p>Content:</p>	<p style="text-align: center;">Emergency Exercise Message</p> <p>To:</p> <p>Method:</p> <p>From:</p> <p>Content:</p>

Step 8: Prepare Messages (Continued)

<p style="text-align: center;">Emergency Exercise Message</p> <p>To:</p> <p>Method:</p> <p>From:</p> <p>Content:</p>	<p style="text-align: center;">Emergency Exercise Message</p> <p>To:</p> <p>Method:</p> <p>From:</p> <p>Content:</p>
<p style="text-align: center;">Emergency Exercise Message</p> <p>To:</p> <p>Method:</p> <p>From:</p> <p>Content:</p>	<p style="text-align: center;">Emergency Exercise Message</p> <p>To:</p> <p>Method:</p> <p>From:</p> <p>Content:</p>

Planning the Exercise Enhancements

Using the following form, indicate your plans for facilities, displays, materials, equipment, and other exercise enhancements.

Exercise Enhancements

Communications Equipment:

- Hard-line telephone
- Radio phones
- Hot-line dedicated phones
- Portable/hand-held radios
- Cellular telephones
- Military phone hook-ups
- Citizens' Band (CB)
- Teletype systems
- Fax machines
- Amateur Radio Emergency Service (ARES)
- Radio Amateur Civil Emergency Service (RACES)
- Monitors/scanners
- NOAA Weather Radio
- National Warning System (NAWAS)
- Computerized Radio Packet

Maps:

- City street maps
- County street maps
- Subdivision maps
- Sewer maps (mains/facilities)
- Water maps (mains/facilities)
- Electric maps (lines/facilities)
- Gas maps (lines/facilities)
- Flood plain maps
- Contour maps
- Police and fire district maps
- Center city (downtown) maps
- Facility maps (plant layout, rail yards, etc.)
- Weather maps

Planning the Exercise Enhancements (Continued)

Charts:

- Problem and Event Log
- Damage assessment chart
- Facility charts
- Status boards (specify):

- Organization charts
- Simulation plotting map
- Other:

Other:

- Computer resources
- Videotapes
- Audiotapes
- Slides
- Projector
- Copy machine
- Portable radio
- Pagers and cellular phones
- Public address system
- Pens, pencils, and markers
- Chart paper
- Telephone books and directories
- Local and state contact lists
- EOC phone directory
- List of cellular phone numbers
- Name tags
- Resource lists
- Financial cost report form



Activity

Optional Activity: Exercise Design Documents

Using the templates provided in the Exercise Design Tool Box (see the “Templates” directory), develop the following documents for the functional exercise you have just designed:

- Exercise Plan
- Control Plan
- Evaluation Plan
- Player Handbook

Summary and Transition

Unit 10 provided an opportunity for you to apply the entire exercise design process in developing a functional exercise. Unit 11 will provide a brief course review and the final exam.

