HOW TO DEVELOP A FUNCTIONAL EARTHQUAKE EXERCISE

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What are the Advantages of Earthquake Exercises?

• Meet Accreditation Requirements
• Meet Regulatory Requirements
• Comply with Grant Requirements
• Assess and Improve Emergency Preparedness for Earthquakes
What do you want to improve?

• Look at earthquake on your Hazard Vulnerability Analysis

• Test recent earthquake training or evacuation equipment

• Look at staff, patient and visitor safety

• Communication
Exercise Tools for Healthcare Facilities

- ICS, Nursing Home Incident Command System (NHICS) and Hospital Incident Command System (HICS) Tools
  - Earthquake Incident Response Guide and Planning Guide
  - Job Action Sheets
  - ICS Forms
- CMS Emergency Preparedness Rule
- The Joint Commission Six Critical Elements
- National Incident Management System (NIMS) Objectives for Healthcare

Available at [https://emsa.ca.gov](https://emsa.ca.gov), [https://www.cahfdisasterprep.com/nhics](https://www.cahfdisasterprep.com/nhics) and [www.calhospitalprepare.org](http://www.calhospitalprepare.org)
Exercise Design & Development

Identify the Planning Team

The list will vary significantly according to the exercise

YOU may be the entire Planning Team
Exercise Design & Development

What do you want to test?

These become the objectives

Objectives (SMART)

- Specific
- Measurable
- Achievable
- Relevant
- Time-bound
Objectives – Example: If the facility needs to test sharing status with the government point-of-contact, the objective may be:

- The Liaison Officer will notify the government point of contact using two or more communication tools (e.g., include Ham Radio, landline telephone, cell phone, ReddiNet or 800 MHz radio) during the exercise of their facility status.
Exercise Design & Development

Objectives
Become familiar with developing objectives for your facility and staff needs

Instructions
1. Write an objective for use in your earthquake exercise for your facility
   • Remember to think about who and what you want to test
   • Remember to use SMART objectives

• Specific
• Measurable
• Achievable
• Relevant
• Time-bound
Exercise Design & Development

Decide Earthquake Exercise Type:

• **Discussion-Based**
  ✓ Seminar
  ✓ Workshop
  ✓ Tabletop

• **Operations-Based**
  ✓ Drills
  ✓ Functional
  ✓ Full Scale
Objectives:
For Example

If the facility needs to test physical protective actions of employees during an earthquake, the objective may be:

• Test staff Response to overhead announcement to Drop! Cover! and Hold On!
Earthquake Experience

- If you have experienced an earthquake, what was it like?

- What do we normally do at work for earthquake drills?

- Why is practicing for earthquakes and other emergencies important?

- What can we do before earthquakes to be prepared?
Global Earthquakes
U.S. Earthquake Shaking Hazards
Earthquakes may happen anytime and almost anywhere.
Most injuries caused by earthquakes are from falling or flying objects.
It is important to practice how to be safe!

Today we are joining millions of people who are practicing earthquake safety!
Decide Earthquake Scenario based on the objectives:

Sets the scene so the exercise can begin

✓ How big?
✓ How far from the Epicenter?
✓ Any damage?
✓ Participants?
✓ Documentation?
Building the Scenario: How Big is the Earthquake?

Earthquake magnitude, energy release, and shaking intensity are all related measurements of an earthquake.

Michigan Tech put together this scale:

### Earthquake Magnitude Scale

<table>
<thead>
<tr>
<th>Magnitude</th>
<th>Earthquake Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5 or less</td>
<td>Usually not felt, but can be recorded by seismograph.</td>
</tr>
<tr>
<td>2.5 to 5.4</td>
<td>Often felt, but only causes minor damage.</td>
</tr>
<tr>
<td>5.5 to 6.0</td>
<td>Slight damage to buildings and other structures.</td>
</tr>
<tr>
<td>6.1 to 6.9</td>
<td>May cause a lot of damage in very populated areas.</td>
</tr>
<tr>
<td>7.0 to 7.9</td>
<td>Major earthquake. Serious damage.</td>
</tr>
<tr>
<td>8.0 or greater</td>
<td>Great earthquake. Can totally destroy communities near the epicenter.</td>
</tr>
</tbody>
</table>

More information can be found at: [www.usgs.gov](http://www.usgs.gov)
Building the Scenario: How Far is Your Facility From the Epicenter?

You can use existing fault lines or create your own fictional one for the exercise.
Building the Scenario: How Much Damage from the Earthquake?

• Structural Damage
• Loss of Utilities
  ✓ Water
  ✓ Gas
  ✓ Medical Gas
  ✓ Electricity
• Transportation
• Injuries
• Telephone and Cell Towers
• The list goes on and on
Building the Scenario: Who is participating?

- A SINGLE UNIT
- THE ENTIRE FACILITY
- OTHER LOCAL FACILITIES
Take the pieces you just gathered and put them together for your scenario:

- What are you trying to test
  - Objectives
- What is the scope
  - How big?
  - How far from the Epicenter?
  - Any damage?
  - Who is included

Additional information on earthquake scenarios is available at: https://earthquake.usgs.gov/scenarios/
Building the Scenario: Documentation

Choose Documentation
There are basics to the documentation, but can vary based on the exercise type and scope. For a functional exercise some documents you can use are:

• Exercise Plan
• Controller and Evaluator Handbook
• Master Scenario Events List
• Exercise Evaluation Guides
Exercise Plan (used for Functional and Full-Scale Exercises) provides a synopsis of the exercise

- Exercise scope and objectives
- Roles and responsibilities
- Rules of conduct and safety
- Logistics/security/site access
- Communications
- Date and time
# Exercise Overview

<table>
<thead>
<tr>
<th>Exercise Name</th>
<th>Name of Exercise (could be a fun name or just generic, e.g., Active Shooter, Cyber, etc.) and Exercise Type (choose from the exercise types here)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercise Date</td>
<td>Insert Date Here</td>
</tr>
</tbody>
</table>
| Scope         | - This exercise is a **Exercise Type** planned for **##** hours at **Location**. Exercise play is limited to **these agencies**...
- Plans/Procedures being tested: **Include the name of all plans being tested here.** |
| Mission Area(s) | Please choose from the following 5 mission areas based on the core capabilities that you are testing: Prevention, Protection, Mitigation, Response and Recovery |
| Core Capabilities | Choose from the **core capabilities listed here**. List the chosen Core Capabilities here. (Two to three are sufficient.) |
| Objectives | 1. What are you wanting to test? Please limit this to between 1-3 items to allow for the exercise to remain measurable. |
| Threat or Hazard | Choose from Natural, Technological, Human-Caused. **List the type here:** |
| Scenario | Your scenario will go here. |
| Sponsor | Put your agency name here. |
| Participating Organizations | Approximately **##** of individuals will play in this exercise from these agencies... (List facility agencies, jurisdictions, or other entities here) |
| Point of Contact | List Contact Information for the person responsible for this exercise
Name - Title
Department - Division
Full Address, Phone Number, Email Address |
Controller and Evaluator Handbook

• The Controller and Evaluator Handbook supplements the Exercise Plan, with detailed information about the scenario and exercise controllers’ and evaluators’ roles and responsibilities.
Exercise Documentation: Master Scenario Events List (MSEL)

• A chronological timeline of actions and scripted events to be inserted into the exercise by controllers to prompt player activity. It ensures necessary events happen so exercise objectives are met.
• An example is to provide activity that would have gone on in a full-scale exercise such as arriving patients, or the set up of a triage area.
• By providing these “injects” in a MSEL, the Command Center can make decisions according to what is happening in other areas of the facility that are not activated in a Functional Exercise.
Master Scenario Events List (MSEL)

A MSEL generates *injects* that include:

- Designated *scenario* time
- Event synopsis
- Controller responsible for delivering injects
- Expected action
- Intended player
# Master Scenario Events List (MSEL)

<table>
<thead>
<tr>
<th>Inject Time Proj/Actual</th>
<th>Objective</th>
<th>Message No.</th>
<th>Message Type</th>
<th>From</th>
<th>To</th>
<th>Message</th>
<th>Expected Outcomes/Actions</th>
<th>Observed Outcome/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0945</td>
<td>1</td>
<td>1</td>
<td>Overhead Page</td>
<td>PBX</td>
<td>Operator</td>
<td>County Emergency Operations Center (EOC)</td>
<td>This is the Operator (make sure you announce all with “this is an exercise” there has been an early warning for an earthquake. DROP/COVER/HOLD ON.</td>
<td>Staff will drop/cover and hold on</td>
</tr>
<tr>
<td>0957</td>
<td>2</td>
<td>2</td>
<td>Phone</td>
<td>County EOC</td>
<td>Facility Liaison</td>
<td></td>
<td>Provide situational status of your facility to the government point of contact</td>
<td>A situational status is provided to the</td>
</tr>
<tr>
<td>1011</td>
<td>3</td>
<td>3</td>
<td>Runner</td>
<td>Unit I</td>
<td>Command Center</td>
<td></td>
<td>Should we evacuate?</td>
<td>(This will depend on your scenario)</td>
</tr>
</tbody>
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Message Key: P=Phone Call; F=Fax; W=Written; R=Radio; V=Verbal; Vi=Visual (e.g., media, map)
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Exercise Documentation: Player Handout

- A Player Handout is a 1-2 page document, handed out at the start of an exercise, which provide a quick reference for exercise players on safety procedures, logistical considerations, exercise schedule, and other key factors and information.
Exercise Documentation: Exercise Evaluation Guide (EEGs)

- EEGs help evaluators collect and interpret exercise observations.
- EEGs provide evaluators with information on what tasks they should expect accomplished during an exercise, space to record observations, and questions to address after the exercise.
Exercise Design & Development

Back to the Initial Planning Meeting

You have chosen:

- Objectives
- Scenario
- Documents
- Timeline (or MSEL)

Next step...
Exercise Design & Development

Choose Participants

• Exercise Participants
• Evaluators
• Support Staff
• Location and set-up
Conducting an Exercise

• *The day finally arrives...*
Site Set-Up

Check-In and Registration
- Sign-In Sheets
- Badges

Exercise Briefing
- Schedule
- Objectives
- Venues and Areas of Play
- Safety Concerns
Exercise Evaluation

How did you do?
• Conduct a “hotwash” with participants and evaluators
• Record information for the After Action Report
References

- www.aspertracie.hhs.gov
- www.cahf.org
- www.calhospitalprepare.org
- www.earthquakecountry.org
- www.emsa.ca.gov
- www.fema.gov
- www.nlm.nih.gov/dimrc/disasterinfo.html
- www.ready.gov
- www.shakeout.org
- www.usgs.gov
Review: How to Set-Up a Functional Earthquake Exercise

- **Review**: Review preparedness needs for Earthquakes
- **Identify**: Identify the Planning Team (It may just be you)
- **Set Up**: Identify Objectives
  - Exercise Type
  - Earthquake Scenario
- **Evaluate**: Hotwash to gather information for the After Action and Improvement Plans
Summary

There are a multitude of reasons for exercises to prepare for an earthquake – and another million ways of meeting the needs.

This course helps pull many of them together into one plan.
QUESTIONS

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