Hospital Evacuation Tabletop Exercise

Master scenario events list (MSEL)

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Emergency Preparedness and Response Exercise Program

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PREFACE

The purpose of the Master Scenario Events List (MSEL) Package is to provide central exercise facilitation team members a complete edition of the MSEL. This includes the summary listing as well as any detailed inject forms that will be delivered to players. The Facilitator and Evaluator (F/E) Handbook should be consulted for more information on MSEL inject procedures. Core control team members, may use this document to track exercise play, manage Simulation Cell (SimCell) functions, and maintain situational awareness for the Exercise Director. Evaluators may also reference individual pieces of the document through teamwork with facilitators.

Exercises are the culmination of training toward a higher level of preparedness. This document was produced with help, advice, and assistance from planning team members from various departments and agencies.
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EXERCISE OBJECTIVES

Overall Objectives

Primary
1. Evaluate and discuss the trigger points and issues related to hospital leadership deciding when to evacuate the facility during full power/HVAC failure in accordance with current plans/policies.
2. Discuss the options and issues with the triage of patients by clinical staff for evacuation in accordance with current plans/policies and best practice guidelines.
3. Discuss and explore the options for the efficient integration of response partners into evacuation operations by all responding hospital staff in alignment with H-ICS/NIMS.
4. Outline the methods and mechanisms used by hospital staff (and co-responders) to support patient needs during the evacuation process based on existing standards of care and with consideration for “crisis standards of care” concepts.
5. Demonstrate and discuss the methods and mechanisms used by hospital staff to perform comprehensive patient tracking during and after the evacuation in accordance with existing policies/procedures.

Secondary
1. Discuss and explore the options for administrative staff to carry out the task of arranging destination facilities for patients during an evacuation.
2. Outline the methods and mechanisms used by administrative and clinical staff to coordinate EMS transport away from the hospital during an evacuation.
3. Discuss and explore the options for communications and information sharing among all responders (internal and external) to the evacuation.
4. Discuss the coordination of public information messaging, including information dissemination for family and visitors, by hospital administration and any relevant response partners.

Summary Narrative

In order to trigger full evacuation of a hospital in a limited time (target time: 4-6 hours), a significant amount of critical infrastructure and/or key resources must be severely compromised. Of the possible infrastructure elements that may fail in a hospital, two of the most destabilizing events that can occur are the prolonged loss of power and/or water. Many of a hospital’s engineering systems obviously rely heavily on power and water, perhaps the most important of these systems is the heating, ventilation and air conditioning (HVAC) system. The mechanisms by which these two elements of critical infrastructure suffer failures vary, but the common end result, irrespective of the mechanism, is a facility that either is, or soon will be, uninhabitable from a patient care perspective.

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For the purposes of the evacuation exercise, the main driver will be a seismic event that manages to rupture/damage water supply lines without causing catastrophic structural damage to the facility. The loss of water, in turn, will cripple the HVAC system(s) and render the facility quickly inhospitable in terms of climate, sanitation, etc. The threat of a deteriorating internal climate (too hot or too cold) will evolve over a period of hours, exacerbated by the exterior weather conditions and forecast.
Scenario

Weather summaries: (to be read as a prelude to the first inject)

For the September and October 5th exercises:

A late-season heat wave is currently affecting the area. After one of the hottest summers on record, the temperatures this week have been unseasonably warm and sunny with highs in the upper 80’s. Forecasts over the next three days call for continued hot conditions with temperatures possibly breeching 95° tomorrow.

For the October 15th and the November exercises:

An early cold snap has gripped your region. Overnight lows last night dipped into the low 20’s and tonight’s forecast calls for temperatures in the teens. In addition, strong NW winds will help cooling, with wind chill values approaching the single digits.
### Event 

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#### Recipient Player(s):  

*Your Hospital*

#### Event Description:

Establishes the starting point related to events that will serve as catalysts for subsequent preparatory/response activities

#### Inject:

Moments ago, the entire building began to vibrate and shake for a period of nearly 20 seconds. Your initial thoughts were of an explosion of some kind, but as a more side-to-side rocking motion became evident you incredulously concluded that it was an earthquake. Around the facility, items have been knocked off shelves and at least a few cracks are visible in the drywall and/or cinder block interior walls. You can hear a mix of alarms sounding, including those of cars outside.

Within the first 25 minutes following the quake, your hospital emergency management team has provided the following preliminary information:

- Twitter feeds suggest that a 5.2 Richter scale temblor has just hit the immediate area.
- You are not currently aware of any major damage to any hospitals in the Region.
- Public safety officials are not immediately reporting large numbers of casualties or catastrophes.
- Your hospital is currently operating at its average daily census, except as below:
  - All your hospital ICU beds are currently full
    - Your emergency department is currently full, with 1 patient requiring an ICU bed and 4 patients boarding in the ED awaiting admission.
  - Grid power is currently offline and the hospital is currently operating on generator power. Generator power is mostly sufficient as planned across the campus; however a few isolated pockets have outages.
  - Much of the campus appears to be without water. Most units report limited or no water pressure. Some leaking/flooding has occurred in several areas including the central pharmacy, partly due to ruptured fire sprinkler lines. You have no estimate yet about when the water service may return.
  - Numerous superficial cracks are evident around the building(s), and facilities staff are awaiting the emergency arrival of consulting expert engineers.
  - Elevators appear to be working.
  - The primary hospital Heating Ventilation and Air Conditioning (HVAC) system is currently offline.
The negative pressure isolation rooms are not functioning properly.

- Internal patient safety and clinical staff are already recommending that the ORs be closed due to the HVAC failure.
  - Your chief of Obstetrics is recommending transfer of all patients from the Labor unit to other hospitals if the ORs are closed because of a lack of ability to perform Caesarian sections. She has also already heard of several patient requests to be transferred away due to anxiety about the structural integrity of the hospital.
- Several patients have left the clinics and the hospital during the shaking and cannot be located. It is unclear whether they have left the hospital campus or not.
- The ED reports only a few patients trickling in with traumatic injuries. The ED is inquiring about the need to declare a “Code Black” to stop ED influx and/or admissions.

**Expected Action(s):**

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<td>Communication of information vertically within each hospital site: key EP, hospital leadership, operations and clinical staff, and some type of communication with patients/visitors. This should begin discussions on the implications of the damage assessment and the potential need to evacuate.</td>
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**Module 1- Initial Decision Making and Incident Management**

**General Discussion Questions**

1. What are your hospital’s initial priorities?
   a. How is a threat/vulnerability assessment being performed?
   b. Who is assessing critical infrastructure and key resources?
   c. Is there a plan for automatically conducting/submitting unit-level situation and/or damage reports? What is the trigger for units to submit such reports? Who is compiling the reports? How long will it take?
   d. How long will it take to perform an assessment of the hospital’s operational capability?
   e. Do any decisions need to be made before a complete assessment is completed?

2. What does your Incident Command structure/organization look like at this point?
   a. How will you rapidly compile, verify and share information/reports?

3. When will you need your first Incident Action Plan (IAP) to be completed?
4. What are the specific trigger points that you will use to decide whether to evacuate the institution?
   a. Are they pre-determined as part of your evacuation plan?
   b. Are there formalized “pre-evacuation” stages of the plan with defined actions? If so, what are those actions?
   c. Are there any alternatives to evacuation that you use as part of your plan?

5. Who has the authority to make evacuation decisions?
   a. In case of a possible immediate life threat (i.e. fire), do staff have the authority to completely vacate an adjacent (unaffected) unit if they perceive an impending threat? If not, whom do they contact? Do they know where to evacuate to? Are multiple units competing for the same destination space?
   b. Is there someone on-site 24/7 who has the authority to order a partial or full evacuation?
   c. Does the CEO/Board of Directors reserve the right to overrule operational decisions?
      i. Will the legal department be consulted? How? (4:00 a.m. protocols?)
   d. What input/influence will outside agencies have on decisions? How would a dispute between the local fire department and hospital administration be resolved if the hospital disagreed with a specific portion of the evacuation order/recommendation?

6. Are there distinct types of evacuation in the hospital plan? (pre-evacuation staging, single unit, multi-unit, single/multiple buildings, entire campus)
   a. If so, how is each stage triggered?

7. When will your organization establish contact with the local public safety incident command system(s) in your community and surrounding communities?
   a. What mechanisms are you using to send/receive information from local public safety and local public health representatives?
   b. What types of information do you need?
   c. What information are you sending them? When are you sending it?

8. Which other response partners are you in communication with at this point?
   a. How are you communicating with them?
   b. What specific information do you need from them?
   c. What information do you need to share with them?
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<tr>
<td>Recipient Player(s):</td>
<td>Your Hospital</td>
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**Event Description:**

More definitive information that should push the hospital towards the evacuation decision.

**Inject:**

- Facility engineers have several damage report updates:
  - The hospital’s HVAC system(s) have apparently sustained very significant damage due to multiple pipe failures. They speculate that a lack of adequate bracing may have allowed for excessive movement of the pipes and junctions. The water feeder lines that tie into the HVAC system appear to have been particularly damaged. The HVAC system is inoperable and preliminary estimates for repair are at least 96 hours. The entire facility is without air circulation capability and internal temperatures are beginning to climb. The facilities staff estimate that the temperature will call for an increase of approximately 3-5 degrees per hour in most areas of the hospital. In 6 hours, internal temperatures may reach the low 90s. (Areas with a large amount of electrical equipment, such as the ICU(s) and IT server rooms are anticipated to get hotter faster.)
  - Water pressure is still minimal around the hospital. Many faucets and toilets are inoperable.
  - Your hospital’s facility engineers report that main grid power is currently offline. Power company officials cannot yet give you a timeline for when external power may be restored. Generator power is currently covering the power needs of the facility, but they recommend aggressive conservation measures including curtailing of normal operations where possible.
  - Structural engineers have concluded that a portion of the hospital’s foundation has likely suffered some degree of structural compromise. They recommend evacuating, but emphasize that the pace of the operation does not need to be immediate and could be done in the next several hours.
- You have consulted with public health and public safety officials and know that your hospital is the only hospital in the Region that will be required to evacuate.
- Local EMS is busy with calls in the area and noting longer transport times since they must travel farther out of their service area to other emergency departments.
- Public health agency in your state is currently performing a statewide hospital bed count.

Based upon the projected rate of rise of temperature inside the hospital, as well as the effects of other damage, your hospital leadership has decided to order an evacuation of the whole facility. They have requested that the evacuation be completed in the next 4-6 hours if at all possible.
Module 2- Operations

Key Issues

- Workforce mobilization is required to execute the operation, including internal staff, off-duty staff and outside responders
- Triage of patients must occur prior to and during the operation
- Patient care and safety must be maintained during the evacuation process
- Patient disposition/destination planning and tracking efforts must be implemented including outright discharge and all levels/types of interfacility transfers.

General Discussion Questions

1. What are your primary operational objectives in conducting a rapid (4-6 hours) hospital evacuation?
   a. How are those objectives communicated to staff?
   b. Which section of your IC structure is primarily responsible for each objective?

2. Which hospital departments are involved in the operation?
   a. What are their respective roles?
   b. Are there roles for departments not directly involved in evacuation?

3. What roles will partner agencies be relied upon for?
   a. What operational support are they to offer?
   b. Have you worked with your partner agencies to discuss specific resource availability?
   c. How soon will external assets be available?

4. What are your primary methods of internal and external communication while conducting the operation?

5. How will you communicate the evacuation decision to staff, patients, families?

6. How will you communicate changes to the plan as they occur?
7. What are the priorities, in order, for hospital security at the outset of evacuation operations?
   a. Do you have adequate resources to maintain security at all operational sites?
   b. Other than local law enforcement, what are additional options for security and crowd control?
   c. How will these resources be accessed and who has authority over them?
   d. How will this be coordinated and supervised?
8. How will the traffic be managed?
   a. Will discharge/egress routes be segregated from transfer departures?
   b. Are there alternate routes for both?
9. How will you maintain security for special patient populations?
   a. Infants?
   b. Children?
   c. Psychiatric patients?
   d. Prisoners?
10. How will you secure the facility (expensive equipment, medications, etc) before evacuating?
11. How will patients be triaged and/or prioritized for evacuation?
   a. Are there uniform and specific standards within the institution?
      i. Are they known to providers?
   b. Does the unit perform a manual patient census prior to evacuation? Do they report that census? To whom? How?
   c. Does evacuation triage prioritize a) acuity, b) mobility status (stretcher-bound/wheelchair/ambulatory), c) location of the unit within the hospital, d) availability of a known transfer destination or e) some combination?
   d. Who (specifically) will be tasked with making triage decisions?
      i. Have they received any formal training in the evacuation plan or evacuation triage?
      ii. Is there an existing framework for ethical decision making related to triage?
      iii. What are the mechanisms for resolving disputes over triage within the facility?
   e. How will the triage information be compiled and incorporated into IAPs?
   f. Is there a mechanism to allow for re-triage and resuscitation if necessary if patients deteriorate during evacuation (or while waiting)?
   g. How would triage tactics change if your elevators were not operational?
12. How is medical equipment prioritized for evacuation?
   a. How does your institution compile a list of the number of available assets (portable cardiac monitors, portable ventilators, oxygen cylinders, suction machines, IV pumps with battery, etc.) and the location of those assets?
   b. How does your institution ensure that the available equipment is matched to the evacuating patients?
   c. Does portable medical equipment ever leave the institution? If so, when?
13. How are patients prepared for transfer?
   a. Do they receive a supply of needed medications for the next 8-12 hours?
   b. Does a copy of the patient’s medical and medication record physically accompany the patient?
   c. Is there a mechanism to instruct EMS and receiving facilities on important therapies the patient may need over the next 8-12 hours?
14. Is there a comprehensive plan for tracking patients (including patient records)?
   a. Does the plan involve multiple check-in/check-out data collection points? If so, how are check-in/out data collected and reported centrally?
   b. How does the plan interface with the existing patient discharge and/or transfer destination systems?
   c. How will tracking information be available to the patient’s treating clinicians?
   d. How will tracking information be available to the patient’s family?
15. Is the patient tracking system adaptable to adverse conditions (i.e. paper-only if there is no electricity)?
   a. Who is responsible for compiling/securing patient records?
16. Does the tracking system used for evacuation integrate into existing EMS patient tracking tools (MCI-based)?
17. How will transfer beds be identified and secured for evacuated patients?
   a. Who will carry out the task of finding beds, apart and separate from patient tracking activities?
   b. How will point-to-point communication occur between hospitals?
      i. Who is expected to be the point of contact at the other hospitals?
      ii. What redundancies exist?
   c. Is there a preference for hospitals within your network (if applicable) when finding patient destinations?
   d. Are the special patient populations in your hospital that need a special type of hospital for transfer (i.e. Level II nursery, burn center, tertiary hospital, etc)?
   e. What is the role of EMS in destination planning?
f. What is the role of local public health in destination planning?
g. What is the role of state public health in destination planning?

18. How will the hospital IC structure coordinate/communicate with the relevant external agencies (DPH, EMS) during the evacuation?

19. If patients must leave the building, but sufficient EMS assets are not yet available, and/or there is no destination hospital available, is there a plan for staging all or a majority of the patients outside of the main hospital building(s)?
   a. Is this staging site usable in all 4 seasons?
   b. Does the staging site have sufficient access to emergency electrical power for medical equipment?
   c. Are there plans to supply the staging area with extra medications (and possibly a pharmacist) if new medical needs arise?
   d. Is there a resuscitation area within the staging location if patients destabilize during transfer?
   e. Is there ready access to medical supplies (i.e. IV fluids) and oxygen for resupply of critical patient care needs at the staging site?

20. How will patients receive ongoing care during evacuation (i.e. medications, fluids, etc)?
   a. What special measures are in place for acute or critically ill patients?
   b. What special measures are in place for pediatric (including neonatal) patients? Is pediatric equipment available?

21. Following primary triage, who determines when, where and how patients are discharged?
   a. How will staff oversee this process (centralized vs. decentralized)?
   b. Where will patients be assembled while awaiting family/transport after discharge?

22. Is there a main assembly point for processing evacuees once they have departed the care units?

23. Is there a plan/mechanism to discharge patients who simply leave the hospital during an evacuation? How are such patients noted?

24. Who will carry out the physical moving of patients from the units to the assembly point/egress?
   a. How will routes be established/mark and monitored for back-ups?
   b. Are there outdoor transit/exposure issues associated with routes?

25. What is the plan if the elevators are not operational?
   a. Do you own special equipment for stair transport of stretcher-bound patients?
   b. Are your staff trained to “package” a patient with all necessary medical equipment for stair transport?
c. Who is expected to manually transport the patients down the stairs? Have they practiced this transport?

d. How long would a full evacuation by stairs take?

26. How will you communicate with the floors to let them know when to evacuate?
   a. Do the floors just leave when possible, or must they wait for a central order?

27. How long do you believe most patients will be in transit from original bed to destination bed?
   a. Will the oxygen, medication, etc. supplies with each patient last for the longest anticipated transit time?

28. Does EMS meet the patient at the curb (or at an assembly point), or is EMS expected to come to the floors to pick up patients?

29. How does EMS know the destination of the patient?

30. Will hospital medical staff (MD, RN, RT, etc) be expected to accompany certain patients to their destinations?
   a. How will they return to the main campus?
   b. Can they practice at other hospitals (pay, liability, etc.)?

31. What additional equipment do you require?
   a. How are resources being tracked and located as they are used?

32. Who is managing the labor pool?
   a. What are the labor needs at this time?
   b. Can you identify staff capable of performing heavy physical labor?

33. What methods of patient transport will be utilized to execute transfers?
   a. With whom are you coordinating regarding the transport of patients (local EMS/Fire)?

34. What, if any, roles will other agencies play in the hospital evacuation?
   a. How will this be coordinated?
   b. Do they have adequate resources available to assist?
   c. What support can they offer?

35. Will your organization have enough resources?
   a. If not, what Mutual Aid Agreements are in place to support this kind of operation?
   b. To whom would you turn for assistance?
   c. Have you coordinated with them about this?

36. How will patient and staff safety be monitored during operations?

37. Who stays behind to secure the hospital?
a. Is there a checklist of items that need to be secured (i.e. pharmacy, utilities, etc)?
   i. What utilities need to be secured before leaving?
   ii. How long does this take?
   iii. What can be done to facilitate a prompt re-opening of the facility when possible?

b. What is the source of the personnel and how long will they be committed?

c. What is the plan to handle shift changes?
Event # | 3  
---|---
Event Time: 11:10 am  
5 days later
Recipient Player(s): | Your Hospital

Event Description:
Resumption of services

Inject:
After five days of steady repair work, the HVAC systems have been fully restored. Complete structural assessments have been made and are functional to permit the facility to reopen.

Expected Action(s):  
Notes

Module 3- Recovery

Key Issues

- The hospital was evacuated successfully and secured.
- Recovery operations are ongoing and include the admission/re-admission of patients.
- The administration is anticipating a temporary workload surge across most departments as the hospital census climbs back to customary levels

General Discussion Questions

1. What are your operational objectives at this point in time?
2. Who has the authority to reopen the facility?
   a. What is the process to make this happen?
   b. Are there defined triggers to reopening?
   c. Who is involved in this process?
3. What process will you use to appraise the status of your hospital?
4. Is it possible to return to the hospital before the facility is fully operational?
   a. What functions must be in place before you can return?
   b. How will you arrange for the return of any equipment that left the building?
   c. Does it need to be re-inspected before use?
5. With whom are you in communication at this point in time?
6. What resources are needed for re-entry efforts?
   a. Are these resources different from response resources?
7. How will hospital staff be notified about the reopening?
8. How will you notify the public that the hospital is reopened for business?
9. What are the recovery priorities?
   a. Who determines them?
10. What process will be followed to reconstitute the local response capability?
11. What role will partner agencies play in repopulating the hospital facility?
12. What security considerations will factor into the decision to reopen the hospital?
13. Will you have enough resources/personnel to assist in the recovery operation?
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