Chapter 10

Testing the Emergency Operations Plan

Exercises, formerly referred to by The Joint Commission as drills, are an integral element of an effective emergency operations plan (EOP). Periodically testing the plan enables organizations to assess the plan’s appropriateness and adequacy and the effectiveness of logistics, human resources, training, policies, procedures, and protocols. The basic goal is to assess preparedness capabilities and performance when systems are stressed during an actual emergency. If those tests sufficiently stress the organization’s processes, the exercise reveals the strengths and weaknesses of the plan and leads to improvements.

This chapter discusses the use of regular, planned exercises to help troubleshoot weaknesses in EOPs and includes a number of checklists, strategies, tools, and case examples that health care organizations can use to help ensure that their EOPs are as complete as possible. See Sidebar 10-1 (page 132) for the Joint Commission’s requirements related to testing the EOP.

Testing EOPs
The standard is designed to assist health care organizations to test their EOP, identify deficiencies, and take corrective actions to continuously improve the effectiveness of their EOP. Only a thorough and objective evaluation of performance during an emergency management event or planned exercise will demonstrate how effective the organization’s planning efforts have been.

Periodic testing of an EOP enables organizations to assess the plan’s appropriateness and adequacy, as well as the effectiveness of logistics, human resources, training, policies, procedures, and protocols. Exercises should stress the limits of the organization’s emergency management system. The goal of this testing is to assess the organization’s preparedness capabilities and performance when systems are stressed during an actual emergency.

Exercises should be developed using plausible scenarios that are realistic and relevant to the organizations. Events should be based on each organization’s hazard vulnerability analysis (HVA). Exercises should also validate the effectiveness of the plan and identify opportunities to improve.

It is important to communicate the strengths and weaknesses of the performance revealed by the exercise to all levels of the organization, including administration, clinical staff, governing body, and those responsible for managing the patient safety program. Sidebar 10-2 (page 133) examines research by the Agency for Healthcare Research and Quality (AHRQ) regarding lessons learned during exercises.

Conducting Exercises
Organizations are expected to test their EOP twice a year, either in response to an actual emergency or in a planned exercise. The timing of the two exercises is left up to each

BE PREPARED TIP
Staying Current
Emergency management exercises should be based on the high-priority hazard identified in an organization’s hazard vulnerability analysis (HVA); however, organizations should not consider the HVA to be a static document. Just as that document should be revised regularly to reflect the current threats an organization faces, the types of exercises conducted should also change according to the most current kinds of hazards that could affect the organization.
Sidebar 10-1.
Applicable Emergency Management Standard

The organization regularly tests the emergency operations plan.

This standard requires the following:

**Number and Types of Exercises**
- The organization tests its emergency operations plan twice a year, either in response to an actual emergency or in a planned exercise. Note that staff in freestanding buildings classified as a business occupancy (as defined by the Life Safety Code*) that does not offer emergency services and is not community-designated as a disaster-receiving station need to conduct only one emergency preparedness exercise annually. Also note that tabletop sessions, though useful, are not acceptable substitutes for exercises.
- In the cases of critical access hospitals and long term care institutions, organizations that offer emergency services or are community-designated disaster receiving stations conduct at least one exercise a year that includes an influx of actual or simulated patients.
- At least one exercise a year is escalated to evaluate how effectively the organization performs when it cannot be supported by the local community. Note that tabletop sessions are acceptable in meeting the community portion of this exercise.

Organizations that have a defined role in the community-wide emergency management program participate in at least one community-wide exercise a year. Community-wide may range from a contiguous geographic area served by the same health care providers to a large borough, town, city, or region. Also note that the exercises for the aforementioned requirements may be conducted separately or simultaneously. And again, tabletop sessions are acceptable in meeting the community portion of this exercise.

**Scope of Exercises**
- Planned exercise scenarios are realistic and related to the priority emergencies identified in the organization’s hazard vulnerability analysis.
- During planned exercises, an individual whose sole responsibility is to monitor performance (and who is knowledgeable in the goals and expectations of the exercise) documents opportunities for improvement. (This individual may be a staff member of the organization who is not participating in the exercise.)
- During planned exercises, the organization monitors, at a minimum, the following six critical areas:
  1. Communication, including the effectiveness of communication both within the organization as well as with response entities outside of the organization, such as local government leadership, police, fire, public health, and other health care organizations within the community
  2. Resources and assets, including responders, equipment, supplies, personal protective equipment, and transportation
  3. Safety and security
  4. Staff roles and responsibilities
  5. Utilities management
  6. Patient clinical and support activities
- Exercises are critiqued to identify deficiencies and opportunities for improvement based on monitoring activities and observations during the exercise.
- Completed exercises are critiqued through a multidisciplinary process that includes administration and clinical steps. In the cases of critical access hospitals and long term care organizations, this includes physicians and support staff.
- The organization modifies its emergency operations plan in response to critiques of exercises.
- Planned exercises evaluate the effectiveness of improvements that were made in response to critiques of the previous exercise. Note that when improvements require substantive resources that cannot be accomplished by the next planned exercise, interim improvements must be put in place until final resolution.
- The strengths and weaknesses identified during exercises are communicated to the multidisciplinary improvement team responsible for monitoring environment-of-care issues.

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Sidebar 10-2.
Lessons Learned in Disaster Drills

To find out more about what organizations are learning from their disaster drills, the Agency for Healthcare Research and Quality conducted a review of the current literature. Because the drills varied in terms of targeted staff, learning objectives, identified outcomes, and evaluation methods, it was difficult to draw definitive conclusions about the most effective approaches for training hospital staff to respond to a disaster. However, researchers uncovered some interesting lessons:

- Internal and external communications were key to effective disaster response.
- Having a well-defined incident command center reduced confusion.
- Conducting conference calls was an inefficient way to manage disaster response.
- Having accurate phone numbers for key players was vital, and regular updating was necessary.
- Conducting disaster drills appeared to be an effective way to improve clinicians’ knowledge of hospital disaster procedures.
- Computer simulation might be an economical method to educate key hospital decision makers and improve hospital disaster preparedness before implementation to a full-scale drill.
- A tabletop exercise can help motivate hospital staff to learn more about disaster preparedness and can help teach staff about aspects of disaster-related patient care in a way that simulates the practice setting.
- Conducting a regional exercise involving top government officials can help increase awareness of the need for better disaster-response planning.
- Video demonstrations might be an inexpensive, convenient way to educate a large number of staff about disaster procedures and equipment use in a short time.


BE PREPARED TIP
Injecting “Reality”

To inject as much “reality” into the exercise as possible, consider the exercise’s duration, complexity, and resource utilization when planning it. For example, organizations might want to conduct an exercise in the evening or at night when there are fewer staff members working. If the exercise occurs during off-peak hours, then off-peak staffing should respond. The organization cannot assume that it will be able to get its day-shift staff to return to work that evening.

organization. For long term care organizations and critical access hospitals that offer emergency services or are community-designated disaster receiving stations, at least one exercise a year must include an influx of actual or simulated patients. Organizations can determine the particular emergency scenario for the influx of volunteers or simulated patients, as well as the escalating exercise.

Volunteers are just that—usually community members who have been recruited to represent emergency victims. Simulated patients, sometimes known as “paper patients,” are usually cards with symptoms written on them. If simulated care recipients are used, they must be triaged, put on gurneys or in wheelchairs, and transported through the system as if they were actually receiving care at the organization. Regardless of whether volunteers or simulated patients are used, organizations should apply a realistic time line, and utilization of the six critical areas of emergency management should mirror a real event.

Because mass-casualty events can generate hundreds or thousands of victims, an exercise should reflect that scenario and simulate the challenges that accompany a surge of individuals seeking care. Among those questions are, How would the organization triage hundreds of patients at one time? Where would the organization isolate or decontaminate them if either were necessary? Does the organization have enough pharmaceuticals to treat them? Does it have enough food and water to feed them?
The second required drill per year may be another external emergency. However, it is recommended that organizations use the opportunity to test some portion of the internal EOP. For example, weather emergencies or utility failures might be the focus of the exercise. The checklist contained in Table 10-1 (at right) offers a starting point for organizations seeking to test an EOP.

### Escalating the Exercise

As previously mentioned, organizations are required to conduct at least one exercise a year that is escalated so that the organization can determine how it will cope without the support of the local community. Conducting exercises involving multiple elements of an emergency at one time, such as a large influx of patients and a simultaneous loss of power, makes the drill more realistic. For example, a hurricane could cause an organization to lose power for two weeks, could contaminate its water supply, could prevent some staff members from arriving at the facility due to flooded roads, and could also prevent food supplies from reaching the organization. The events of September 11, 2001, when the World Trade Center towers collapsed, also show how emergencies can escalate. On that day, there were plane crashes, major fires, two building collapses, mass casualties, a public health emergency, and loss of utilities.

Unless the exercise stresses the system, it will not provide insight into strengths and weaknesses. To accomplish this, the exercise should not only require using additional supplies and equipment, but it should also drain on-hand inventory to test organization processes for obtaining more equipment, medical supplies, pharmaceuticals, food, water, linens, and so forth. Exercises should push participants to explore existing agreements with suppliers and to investigate new ones. For example, the organization might have a designated individual call vendors to explain that an exercise is in progress and to ask how long it would take to deliver the supplies. This tests the ability to reach suppliers and see how quickly they can deliver the needed supplies and equipment.

The exercise should also push staffing to its limits. A designated individual on each unit should make calls to see which staff members can report to work and how long it will take them to get there. This will ensure that call lists are current. If the telephones are not working, the organization must use its communications backup systems to contact staff. If staff members are unable to get to the organization because of inclement weather, then the organization should consider its transportation options for picking them up. If staff members will not report to work because of fears of contamination or other related fears of personal safety, then the organization should practice during its exercise how to obtain additional staff, such as volunteers or staff from other organizations. If staff members cannot be present because they are caring for their families, the organization should consider including in an exercise the establishment of an area as a shelter for the staff’s family members.

### Other Considerations

Exercises are integral to the process of troubleshooting weaknesses in EOPs. When setting up an EOP exercise, organizations should carefully decide on its components. It is also important to note that the standard now requires organizations...
to monitor the six critical areas of emergency management (communication, resources and assets, safety and security, staff roles and responsibilities, utilities management, and patient clinical and support activities) during planned exercises.

Organizations can consider the following questions to make the exercises meaningful:

- **What will the emergency be?** This should be as specific as possible to offer the most realistic test of the plan. For example, a mock disaster involving bioterrorism should be specific, as clinical treatments vary, depending on the problem.
- **Which departments in the organization will be involved?** For example, it makes sense to go beyond the emergency department (ED) in a hospital or clinical care areas in a nursing home to reach into other areas that would be called upon during an emergency. For example, will pharmacy or the laboratory be included?
- **Will the exercise run across multiple shifts?**
- **How can the exercise be conducted without disrupting normal care provided?**
- **How will patients and the community be made aware of the exercise so that it is not mistaken for a real crisis?**
- **How can the exercise be made scalable?** In other words, how can the exercise be escalated or contracted?
- **What supplies and equipment will be included in the exercise?**
- **How will communication, including the effectiveness of communication both within the organization and with those in the community, be maintained and monitored?**
- **What provisions will need to be made for safety and security during the simulated emergency?**

The organization must also determine how and when the exercise will end: Will it be completed at a certain time of day or when a particular outcome is achieved? Either way, the end of the exercise should be specific and tightly controlled, with a detailed plan for returning to normal activity in a way that minimizes confusion and disorder and ensures that useful information is not lost in the shuffle. Often, exercises are concluded too early. It is not until systems break down that real learning occurs. Escalating the exercise, as now required, shows organizations how “drilling to failure” is the best means to identify systems and processes that are at risk.

Organizations might also wish to consider conducting exercises for emergencies that extend past a few hours or days. Staff might be able to respond to an immediate emergency, but what happens beyond a few days, weeks, or even months as was the case with the 2003 severe acute respiratory syndrome (SARS) epidemic in Toronto? How will the organization continue to maintain a sufficient number and mix of staff over time? How will it rotate staff? How will staff members balance their professional responsibilities with their personal needs to take care of family members or deal with losing their home due to natural disasters? Sidebar 10-3 (above) provides a list of issues to consider when testing the EOP.

### Communitywide Exercises

The standard regarding EOP testing also requires participation in at least one communitywide emergency management exercise a year. Communitywide might range from a contiguous geographic area served by the same health care providers to a large borough, town, city, or region. The drill should be relevant...
vant to potential threats identified in the HVA and should assess the communication, coordination, and effectiveness of both the organization’s and the community’s command structures. All major emergency response participants should be included. Among them are the health care organization(s), local leaders, public health authorities, emergency medical services, fire department, police department, local businesses, and volunteer patients. Alternative care sites should be included because testing increases communitywide awareness of the existence, location, strengths, and challenges of such facilities. It also encourages face-to-face interactions so that responders become familiar with one another.

**BE PREPARED TIP**

**Testing Personal Protective Equipment**

When conducting an exercise, hospitals should require health care workers to put on and remove personal protective equipment. This will enable health care workers to experience conditions that simulate some of the physical and mental challenges of conducting patient care tasks while wearing biosuits. The ability of workers to don and remove isolation garments without contaminating themselves should also be tested.

**Monitoring the Six Critical Areas**

One of the new requirements related to the standard is carefully monitoring the six critical areas of emergency management—communication, resources and assets, safety and security, staff responsibilities, utilities management, and patient clinical and support activities. If, during an emergency or a planned exercise, an organization cannot handle one or more of these critical areas—because of the nature of the emergency and situation—the organization might need to consider evacuating to another location. Ideally, an organization should be able to manage these six areas during an emergency, but if it cannot, it is important to identify weaknesses and improvement opportunities through exercises. Identifying those weaknesses and understanding what improvements have been made will help organizations ensure that they do not wait until it is too late to evacuate.

**Next Steps**

Following an emergency and implementation of the EOP, health care organizations should conduct a technical debriefing or evaluation. Organization performance must be monitored during planned exercises by an individual whose sole responsibility is to do just that. This individual can get the evaluation process started. The evaluation should be a candid, closed-door meeting that analyzes the organization’s effectiveness in dealing with the emergency. Key staff members from all departments should be included. Questions for the sessions include, among others: Did the plan function the way it should have? What failed? What worked? How many patients were treated? What categories of patients were treated? How many discharges, admissions, deaths, and transfers occurred? How were departments staffed? Was staffing appropriate? Was equipment provided as needed? How might communications systems have been improved? Were other utility systems adequate, and if not, how might they be improved?

There are two ways to think about the timing of critiques, and both approaches have merit. One method is to give managers and supervisors at least two days’ advance notice of any post-emergency debriefing or evaluation. This helps ensure that they can obtain staff input prior to the meeting. Another approach is to schedule the critique immediately following the exercise because individuals’ memories of what happened can fade quickly. Ask what worked well and what did not, and decide what to do about the latter. In either approach, it is important to consider what can be done about areas for improvement or else the organization does not benefit from the full value of the exercise. Table 10-2 (page 137) provides a checklist that could be used for evaluating exercises through a group debriefing.

It is also important, though, that the monitoring of the exercises and subsequent analysis focus on measurable objectives. EOPs and their implementation lack meaning without performance measures, which offer a way to measure whether and how well the organization implemented its plans. Agreeing on what constitutes success and identifying performance measures during the emergency management planning stages (discussed in Chapters 2 and 3) will help determine the exercise’s effectiveness and contribute to improved future performance. For example, an acute care hospital conducting a bioterrorist exercise involving smallpox identified four objectives:

- Discuss the use of smallpox as a biological weapon.
- Demonstrate the disease’s epidemic potential.
- Identify staffing impact.
- Discuss the process of networking with local, state, and federal agencies.
Table 10-2. Group Debriefing Checklist

This checklist is based on the Agency for Healthcare Research and Quality’s module-based approach for evaluating disaster exercises. The following questions are relevant to every zone involved in the exercise. When responding to the questions, the debriefing participants should state their zone.

- **Did you feel you were notified of the disaster in a timely fashion?**
- **Did the incident command center work effectively?**
- **Did any zone receive incorrect information from the incident command center? If not correct, what specifics do you recall about incorrect information?**
- **Was the information from the incident command center received by other zones in a timely way? Did the hospital experience problems with information flow?**
- **Were memorandums of understanding with outside agencies (such as police) activated? Were they functional?**
- **Did nurses and physicians respond quickly to the disaster call?**
- **Was the zone set up when the first mock victim arrived?**
- **Was security in place before the first mock victim arrived?**
- **Did people have a good understanding of their roles, as defined in the disaster plan?**
- **Did the decontamination system work effectively?**
- **Did you have any problems with the decontamination equipment? Functioning properly? Adequate number of units? Participants used it correctly?**
- **Were there delays in decontamination? If so, what triggered these delays?**
- **Did the triage system work effectively?**
- **Were there delays in triage? If so, what triggered these delays?**
- **Did the treatment system work effectively?**
- **Were there delays in treatment? If so, what triggered these delays?**
- **Was personal protective equipment (PPE) used correctly?**
- **Were you able to function in the PPE?**
- **Were you rotated adequately when wearing the PPE?**
- **Was security adequate?**
- **Was staffing adequate?**
- **Were supplies adequate?**
- **Was the equipment adequate? If not, what equipment was not adequate (give specifics)?**
- **Were there problems with transporting patients?**
- **Were there problems with communication devices (such as equipment failure)?**
- **Did the hospital appear to work well with city and/or regional disaster agencies?**
- **Were there problems with information flow between the hospital and outside agencies? If yes, which agencies?**
- **Were there bottlenecks?**
- **Was workspace adequate?**
- **Did you feel you could accomplish what you were assigned to do during the exercise?**
- **What did you learn from participating in the exercise?**
- **Overall, what parts of the exercise went well?**
- **What could have been done differently to make the exercise run better?**

The collection and analysis of data relevant to answering such questions are key to performance improvement. EOPs and their implementation lack meaning without performance measures—a way to measure whether and how well the organization implemented its plans. A performance measure is used to determine whether a process, function, or service is actually performing according to identified expectations. During the planning stages, organization leaders must ensure that staff define appropriate performance measures. These could be related to such key areas as staff knowledge and skills, implementation of established procedures, provision of needed equipment, and so forth. The measures might address any one or more of the nine dimensions of performance—efficacy, appropriateness, availability, timeliness, effectiveness, continuity, safety, efficiency, and respect and caring. Good measures move organizations toward improvement by enabling them to evaluate the effectiveness of their emergency management plans.

Lessons learned from an evaluation of performance measurement data can then be applied to revise the plan. Whether it was an actual event or a planned exercise, it is important that the critique, corrective action plans, and other appropriate documentation be made available in a written report to those responsible for safety considerations to make sure corrective actions are carried out. Health care organizations throughout the United States are being challenged to respond and improve their readiness to respond effectively to many types of emergencies. A thorough review by each health care organization of its emergency management plan is critical, and such reviews must be regular and ongoing. The all-hazards approach to emergency management planning and implementation recommended by The Joint Commission will go a long way toward ensuring that health care organizations don’t have to reinvent the wheel with each new emergency. Table 10-3 (above) provides a checklist that organizations could use as a starting point for testing and revising the EOP.

**Table 10-3. Checklist for Testing and Revising the Emergency Operations Plan**

- The organization regularly conducts emergency exercises (either in response to an actual emergency or in planned exercises).
- Health care workers are required to don and remove personal protective equipment during exercises.
- The exercises use measurable objectives.
- The organization conducts exercises that simulate an influx of patients, using volunteers or simulated patients.
- The organization conducts communitywide practice exercises.
- The organization conducts tabletop exercises.
- The exercises address the six critical aspects of emergency management—communication, resources and assets, safety and security, staff responsibilities, utilities management, and patient clinical and support activities.
- The organization critiques its exercises to improve preparedness and response capabilities.
- External observers are recruited to critique exercises.
- The organization reviews the emergency operations plan on an annual basis and reprioritizes hazards as necessary.
- Information obtained from tests, exercises, and after-action reports is used to improve preparedness and response plans.

**BE PREPARED TIP**

**Recruit External Observers**

One way to enhance objectivity during a critique is to recruit external observers. The organization should train the observers to ensure that they know what to look for. Provide them with written criteria to guide their evaluations and station them in strategic areas or zones.

**BE PREPARED TIP**

**Soliciting Input**

Consider getting comments from both nonlicensed and licensed staff about the exercise’s effectiveness. Also, request comments from other organizations, such as emergency medical services, that participated in the tests.
Coordinating with the Media
All local media should be contacted when an organization tests its emergency operations plan. This prevents misunderstandings about whether the event is a real emergency and provides an opportunity to share with the public how the organization strives to be ready to serve the community during a variety of emergency scenarios. Members of the media might also ask to report on the exercises, which offers a chance to test how the organization would make accommodations for the media during a real emergency.

CASE EXAMPLE:
EVALUATING A REAL-LIFE EMERGENCY

The critique of a real-life emergency in which a man drove his car through the main entrance of 700-bed St. Vincent Hospital in Indianapolis, resulting in a fire, was conducted the following week and attended by the hospital’s vice president of clinical and nonclinical support services, director of facility services, manager of security services, the security team leader, director of emergency services, fire alarm technicians, director of nursing administration, and manager of health and safety, as well as personnel from the township fire department. Among the postincident changes made to the hospital’s emergency management plan were retraining regarding the emergency code and the importance of implementing the disaster plan; training leadership, which had recently undergone high turnover; revising the security plan to include placing personnel to restrict access to scene areas; establishing additional cells to extend the range of the telephone system; revising the radio system for a greater range of operation; placing radios in more convenient areas; scheduling regular maintenance of radios to ensure that they are functioning at all times; having the fire department be responsible for transporting injured patients; and working with the sheriff and fire department to ensure better communication.

Reference

Sidebar 10-4.
Conducting Exercises

Why does the standard require health care organizations (HCOs) to conduct regular emergency management exercises? And why does The Joint Commission stress the interaction of the organization and the community it serves as part of these exercises? The simple answer is that by conducting exercises, organizations test their ability to respond to emergencies. Exercises allow an organization to see the interaction of staff, supplies, equipment, and patients under the realistic scenarios the organization has designed based on what it knows about its own vulnerabilities. And if those scenarios sufficiently stress the organization’s processes, the exercise reveals the strengths and weaknesses of the emergency operation plan (EOP) and leads to improvements.

Says Joe Cappiello, former Joint Commission vice president of Accreditation Field Operations, “In an uncertain world, performing effective drills are part of fulfilling your mission to the community and ensuring your survival as a health care entity.” And, adds John Fishbeck, associate director, Division of Standards and Survey Methods, The Joint Commission, “Drilling offers an HCO the opportunity to form relationships with people in the community that it may need during a real emergency.”

(continued)
Building on the Day-to-Day

No one could dispute the importance of preparedness, but designing and implementing good exercises requires time and energy. By nature, exercises are disruptive. But the impact of a real-time mass emergency on the organization and its community can be so overwhelming that the investment in drilling is well worth the effort. And that's precisely the point: to prepare leaders and staff to respond to significant disruptions.

Susan Goodwin, director, Quality Standards, Hospital Corporation of America (HCA), and a member of the Joint Commission’s Committee on Healthcare Safety, fears that some facilities do not get that point: “HCOs need to go back to the EC standards and read the definition of emergency, which is, ‘a natural or man-made event that significantly disrupts the environment of care or the organization’s ability to provide care and treatment—or that significantly increases the demand for service.’”

In the most effective scenarios, Goodwin says, multiple systems should fail: “During the 9/11 response, hospitals reported that their water systems shut down. Also, air quality problems in New York disrupted ventilation systems. In real mass emergencies, the staff faces far more than a busy, stressful day.”

On the other hand, say Cappiello and Fishbeck, HCOs already have an infrastructure for responding to unexpected events. “Joint Commission standards give guidance for dealing with daily emergencies,” Cappiello says. “Because [HCO] staff know how to manage those incidents, we and they make assumptions that they are equipped to expand to large-scale events. Drilling is the proof of that assumption.”

Fishbeck gives the example of staffing issues. All hospitals have staffing systems for codes—call lists and so on. In a drill or real mass emergency, they build on that basic structure. The same is true of supplies: They’re needed every day, and every hospital has systems for ordering, tracking, and managing them. In an exercise, staff expand and flex that existing supply system.

Exploring the “What If” and the “How”

Constructing an effective exercise is a thinking process. It flows from the hazard vulnerability analysis (HVA) that organizations conduct to identify the emergencies they are most likely to face. Some are obvious—hurricanes in Florida, earthquakes in California. In most cases, natural disasters are higher-priority threats than terrorism. But, Goodwin cautions, an HVA should never be done in isolation. HCOs need lots of community input to identify the most pressing issues. And these issues shape the scenarios, as should the following guidelines.

Stress the System

Most HCOs have been exposed to short-term emergencies, lasting a few hours or days. Thus, their scenarios often address only immediate responses—for example, checking to see how many beds can be made available immediately or how many staff members can come in now. However, as Goodwin says, HCOs should plan as far as they can foresee—for weeks or even months of interrupted services.

“You might be able to get almost 100% of staff in for the immediate response, but what happens beyond that first day? How will you rotate staff? How will staff balance their professional responsibilities with their personal needs—for example, if they, too, have lost homes or loved ones?”

Executing the exercise means immersing everyone in the “how to” of responding to an emergency. And the “how to” lessons don’t only come at the front end of the emergency (admissions). They focus on many other problems as well: how to get patients out of a facility; how to get employees, supplies, food, and water into it if the roads are jammed. Unless an exercise stresses the system, an HCO won’t learn sufficient lessons.

Sidebar 10-4, continued

Conducting Exercises

Building on the Day-to-Day

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(continued)
Chapter 10: Testing the Emergency Operations Plan

Sidebar 10-4, continued
Conducting Exercises

Goodwin suggests that planners play the “what if” game: “What if we had a hurricane and lost power for two weeks, our water was contaminated, our food suppliers couldn’t get through, and our staff had their own personal troubles to deal with? What if we had thousands of dead bodies?”

Involve Multiple Levels
According to Judith Edwards, director of Emergency Preparedness for HCA and commander of a federal disaster medical assistance team, even since 9/11, many hospitals still haven’t established adequate relationships with local, state, or federal emergency responders. Thus, scenarios should require participants to interact with others throughout the community—for example, working between alternative care sites, which encourages face-to-face interaction so that responders get to know each other. To stage an exercise of this magnitude, however, drill organizers must think creatively. Some use tabletop exercises, which are acceptable for the communitywide component of testing the EOP.

Set Specific Goals
Some organizations approach exercises with the goal of demonstrating how well their EOP works. However, Fishbeck and Cappiello caution, the real reward is finding out what you didn’t know. It’s discovering when, how, and why systems break down. Both Goodwin and Edwards emphasize the importance of going into an exercise knowing what you want to determine, and with specific goals for each department.

Says Edwards, “You may just focus on how you would move hundreds of patients through the system—from triage through discharge. Of course, that includes everything that goes with it: supplies, staff, transportation. Or a drill could emphasize decontamination, in which case you might be more concerned with equipment, training, and use of personal protective equipment.” Or your exercise might focus on a total evacuation, in which case the crucial issues are where everyone would go (particularly if no other hospitals could take patients), how patients would be transported (particularly if no ambulances were available), and how staff would communicate between locations.

At one hospital where Edwards worked, the staff needed a smallpox response plan to prevent the spread of infection. Which doors would the infected patients use to enter the facility? Where would the infected patients be housed? Where would staff get extra supplies? Staff used the drill to answer their questions, to discover what worked and what didn’t.

Test Multiple Aspects
An incident command system provides an organized response to an emergency—and a structure under which a facility’s emergency plans can function—by designating responsibility and reporting relationships. Many hospitals are familiar with the Hospital Incident Command System (HICS) (formerly called the Hospital Emergency Incident Command System), which is focused on health care. HICS is flexible enough to fit organizations of all sizes and emergencies of all types, scopes, and time lines. It also provides a common vocabulary to ease coordination between emergency responders. Other models are available. The key is to discern how well the structure works in your community with various disaster scenarios.

Consider the following questions:

Is it flexible enough?
An all-hazards command structure—one that can apply to all scenarios—is preferable because it allows for flexibility and decision making during incidents.

(continued)
Sidebar 10-4, continued
Conducting Exercises

Does it provide a system for initiating and launching the emergency plan?
As Edwards explains, “Emergencies often happen on off-shifts, when administrators aren’t there, so a nursing supervisor
may have to make the determination about opening the command center.” Some hospitals have a complexity analysis tool
that allows a supervisor to score five areas and make a decision based on the composite score. The purpose is to assist per-
sonnel in determining whether the command center needs to be activated for any type of situation. “Activating a command
center is expensive, so it’s important to be able to justify the decision” notes Edwards.

Does it provide a system for notifying and coordinating the important players?
These include external authorities, such as local and state public health agencies, police and fire departments, and the
Federal Emergency Management Agency, as well as hospital personnel.

Source: Adapted from Joint Commission Resources: How to conduct an EM drill. Environment of Care News 8:1, Jan. 2005.

CASE EXAMPLE:
MASS VACCINATION DRILL HELPS ORGANIZATION PREPARE FOR POSSIBLE
PANDEMIC

Many scientists believe that it is just a matter of time before an influenza pandemic occurs. A pandemic can happen when
the physical makeup of a virus changes and humans have no immunity to the altered virus. In that scenario, everyone
could be vulnerable to the altered virus, and the consequences would be dire. Unfortunately, the nature of biology is such
that it’s very hard, if not impossible, to predict if and when a pandemic could occur. The reality is that a virus could mutate
tomorrow and become a pandemic virus, or it might never mutate. It’s important that health care organizations and the com-
munities they serve stay prepared and recognize that pandemics are as possible as earthquakes and hurricanes.

In 2006 Kayenta Health Center participated in a mass vaccination drill to help fine-tune its pandemic response efforts.
Kayenta Health Center, an ambulatory care facility, is a service unit in the Navajo Area Indian Health Service (NAIHS)—
a division of the Department of Health and Human Services. NAIHS is responsible for the delivery of health services to
Native Americans in portions of Arizona, New Mexico, Utah, and, to a lesser degree, Colorado. Kayenta Health Center’s
service area is spread across a remote and sparsely populated area and is in a traditional part of the Navajo reservation in
northeast Arizona.

The idea to conduct a mass vaccination drill came from NAIHS, which required the service units within its jurisdiction to
conduct such a drill on a specified day in November. Community members within the Navajo region were invited to par-
ticipate and receive flu vaccinations at 11 service sites. The goal of the drill was to test how quickly and efficiently the dif-
f erent service units could vaccinate the entire community. To help its service units prepare, NAIHS created a template for
a mass vaccination that each service unit could customize for its specific needs.

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A Coordinated Effort

“Our organization uses the Hospital Incident Command System (HICS) and the National Incident Management System (NIMS) for emergency management,” says Sherry Killingsworth, R.N., C.E.N., C.I.N.C., director of quality management, Kayenta Health Center. To prepare for its drill, Kayenta pulled together its incident commander; safety officer; public information officer; liaison officer; and planning, operations, logistics, communications, and finance chiefs (NIMS terminology) to begin discussions about how to structure the drill. The group convened weekly for planning sessions with local agencies and community members, including the fire and police departments. Within the planning sessions, each participant was assigned roles and responsibilities to be completed by the next planning session. The planning, operations, logistics, and communications chiefs met outside the weekly planning sessions with their assigned staff to ensure that adequate staffing, safety, supplies, and equipment were in place for the drill. The incident command team also met with the schools in the area to discuss their role in the pandemic drill.

Kayenta also communicated with other service units in the NAIHS region that were preparing for their mass vaccination drills. “We were able to participate in conference calls with these other sites and share information,” says Killingsworth. “For example, the public information officer participated in conference calls with other public information officers to discuss how to effectively communicate the nature of the drill to the public and enlist their participation.”

Addressing Snags Along the Way

As Kayenta was making final preparations for its drill, the organization ran into a problem. The local high school was designated through a memorandum of understanding (MOU) to be an alternative site for Kayenta Health Center in case of an emergency. Kayenta wanted to conduct its mass vaccination drill within this alternative site, to test how staff and the public would perform in a different location. “Usually when people want a flu shot, they come to the health center to get one. Staff and the public are familiar with the health center and the vaccination process there. We wanted to have the drill at a different site to test how staff and the public would function in an unfamiliar environment,” says Killingsworth. Unfortunately, shortly before the designated date for the drill, the acting superintendent of the high school voiced concerns about using the high school as a designated alternative site. “We had to find an alternate location at the last minute,” says Killingsworth. Kayenta met with the township and chapter (a Navajo Nation government entity), and they determined that the Kayenta Recreation Center—a boys’ and girls’ club—would be an appropriate location for the drill. “We needed a large space to conduct the drill because we were expecting more than 5,000 people to participate,” says Killingsworth.

Another snag occurred when Killingsworth—the designated incident commander for Kayenta—became ill and was unable to fulfill her role. Kenneth Black, director of safety and security, for Kayenta, assumed the role of incident commander. “I was completely out of commission,” says Killingsworth. “Ken stepped in and made a seamless transition to his new role.”

Coping with a Mass Influx

Prior to the drill, Kayenta had requested that the local schools stagger the arrival of busloads of students to the recreation center to receive vaccinations. However, on the day of the drill, several busloads arrived at the same time, causing a mass influx of individuals into the site. “We had to restructure the flow to accommodate the mass influx. Although we didn’t plan it that way, it did help test our capabilities to cope with a large number of individuals,” says Black. “At our maximum throughput, we were vaccinating 1,200 people per hour.”

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Addressing Logistics
On the morning of the drill, all Kayenta staff reported to the recreation center at 5:00 A.M. to complete the setup for the drill, sign in, and receive assignments. The communications chief oversaw the setup of computers for patient registration, coding, and data entry. Drill evaluators were assigned to roam throughout the facility, monitoring and evaluating the drill. The drill lasted nine hours. During the course of the day, Kayenta vaccinated nearly 6,000 individuals.

Within the drill, Kayenta randomly designated 1 out of every 20 individuals entering the facility to be “sick” and proceed to the quarantine area for evaluation. “Also during the drill, we discovered some individuals who were actually sick or could become sick due to the vaccination. We quarantined those individuals as well,” says Black. “We wanted to test our quarantine ability as well as our ability to distinguish between healthy and sick patients.”

Learning from the Experience
A week after the drill, Kayenta held a debriefing in which it solicited feedback from external agencies as well as internal sources. After the debriefing, the incident command team, along with the planning, operations, logistics, communications, and finance chiefs, met and used information from the debriefing to create an executive summary of the event, which described what happened as well as what went well and what didn’t. The summary also included an estimate of how much the drill cost, so that the organization could know the financial impact of a real mass vaccination situation.

One of the biggest lessons Kayenta learned in the course of the drill was the importance of emergency management training. “During the drill, we realized that not every organization leader participating in the drill had experienced HICS or NIMS training, so they were not familiar with how those systems worked. It would have been helpful if everyone had been trained on HICS and NIMS so that they could have understood more quickly their role in the emergency management process,” says Killingsworth.

Kayenta also learned the importance of communication. “Because of our location, cell phone usage is spotty. Radio communication and phone lines were also limited in outlying areas. We found it difficult to inform people in some locations about the drill. We used pagers and messengers but plan to improve communication infrastructure in the near future,” says Black.

Kayenta planned to use the lessons learned from this drill in its next scheduled drill to improve its emergency response efforts. Likewise, it planned to use the successes achieved in the mass vaccination drill to help frame subsequent drills.

References

For Additional Assistance
The Agency for Healthcare Quality and Research (AHRQ) has released a tool designed to evaluate hospital disaster exercises using evaluation modules and addenda. The modules assess the incident command, decontamination, triage, and treatment zones.

The zone modules address time points, zone description, personnel, zone operations, communication, information flow, security, victim documentation and tracking, victim flow, personal protective equipment and safety, equipment and supplies, staff rotation, and zone disruption. The tool also includes a module for per-exercise assessment and debriefing. The addenda address biological incidents, radiological incidents, general observation and documentation, and victim tracking. *The Evaluation of Hospital Disaster Drills: A Module-Based Approach*, which was designed by the Johns Hopkins University Evidence-Based Practice Center, can be downloaded from AHRQ’s Web site at http://www.ahrq.gov/research/hospdrills/hospdrill.htm.

Other resources for additional assistance include the following:
• Disaster Planning Drills and Readiness Assessment, AHRQ: http://www.ahrq.gov/news/ulp/btbriefs/btbrief2.htm
• Bioterrorism Tabletop Exercise, National Association of County & City Health Officials: http://www.nacchol.org/bttoolbox

References