



Module 4: Emergencies: Prevention, Preparedness, Response and Recovery

Part 3: Response

Tamar: This is the third module focused on emergency response.

The objective for this module is to describe the process for emergency response for different scales and types of emergencies, citing specific examples.

In this module, we'll discuss the governmental response chain; surveillance, epidemiology and situational awareness; vulnerable populations; as well as unintended consequences post-emergency, including disease, illness, and the like.

First, let's discuss the governmental response chain. Remember that response agencies include local, state, and federal response agencies. The National Incident Management System is a system to ensure a standardized approach to incident management that is scalable and flexible to ensure that local, state and federal agencies can all work together regardless of the size or type of emergency.

NIMS enhances cooperation and interoperability among responders and response agencies. Its focus is comprehensive all-hazards preparedness, which means preparedness for all types of emergencies including natural and man-made. It also works to ensure efficient resource coordination among jurisdictions or organizations so that two different agencies or organizations are not doing the same thing at the same time. It also reflects best practices and lessons learned from responses to previous emergencies.

NIMS preparedness focuses on the following elements: planning; procedures and protocols; training and exercises; personnel qualifications and certification; and equipment certification.

This allows for a standardized approach to preparedness across different response agencies. Training and exercises are used to make sure that response agencies are prepared to respond to all different kinds of emergencies. There are training programs to ensure personnel qualifications and that personnel are certified to respond to different emergencies as well as equipment certification.

NIMS has enhanced their partnerships at all levels of government, local, state and federal, the private sector, as well as nongovernmental organizations.

NIMS uses a standardized incident command system, which includes an incident command at the top; command staff, which includes a public information officer, safety officer, and liaison officer; and then general staff, which includes an operations section chief, planning section chief, logistics section chief, and a finance/administration section chief.

These can be scaled up or down depending on the kind of emergency, and remember that command staff and general staff can come from various different agencies. The incident



command system allows them to all report back to the incident command center and coordinate the response among all these different stakeholders.

The multi-agency coordination system is a process that allows all levels of government to work together more effectively. It occurs across various disciplines, including fire, police, emergency management, public health, and the like. It can occur on a regular basis whenever personnel from different agencies interact. This could be during a local fire, or it could be in response to a large-scale disaster.

Public information consists of the processes, procedures and systems for communicating information related to an incident. Oftentimes, the focus of this is on getting information from response agencies to the general public.

The public information functions must be coordinated and integrated across jurisdictions and across functional agencies. If you look back to the incident command system that we just showed you a few minutes ago, you'll see that there are various functional agencies and different functions in the incident command center, all of which have to get information to the public. Public information focuses on getting that information via one clear voice to the general public from the incident command structure.

The governmental response chain, as we discussed before, is a local response to an incident. If the incident goes beyond local capacity to respond, then requests can be made to the state for help, and then from the state to the federal government for help.

It's important to remember that all emergencies are local. If local agencies are overwhelmed, they request resources from the state who can then request resources from the federal government.

However, if there's a criminal investigation, federal agencies may come in to respond immediately, agencies such as the FBI. For example, in the case of terrorism, this might occur. You may recall after the 9/11 attacks in 2001, there was an anthrax attack across the country. The Capitol Building was one of the sites of those attacks. Initially, the Washington, D.C. Department of Public Health came in to respond to the anthrax attack, but shortly thereafter, the FBI came in and took over the response to the anthrax attack at the Capitol Building in order to ensure that any and all evidence was collected and appropriately tagged and followed up on.

Local agencies may include fire, police and emergency management at the county level. State agencies may include organizations like the state police or state emergency management. Federal agencies include organizations such as the Federal Emergency Management Agency, the Centers for Disease Control and Prevention, and the Federal Bureau of Investigation.

Now that we understand the governmental response chain, let's discuss surveillance, epidemiology and situational awareness during emergencies.



The definitions for surveillance, epidemiology and situational awareness are noted on the slide. Note that it's important that all three of these are key to responding to an emergency. We must know what happened or is happening, who is it happening to and how quickly, and what is happening right now, which is situational awareness.

Let's talk about a specific example of the H1N1 pandemic. Initially, H1N1 was identified in children in California. The Naval Health Research Center surveillance program identified the pandemic H1N1 strain, then sent samples to Marshfield, Wisconsin and the CDC to type and make sure that they had found a novel strain of H1N1. Then, there was recognition that apparently unconnected outbreaks throughout Mexico were a public health emergency of international concern. The third step was pH1N1 was identified in a New York City high school. There was traditional surveillance and lab capacity in New York City and CDC, but there was heightened awareness due to the CDC results of previous samples. So all of these fell into place – surveillance, epidemiology and situational awareness – in order to type pandemic H1N1 and begin a response strategy.

There are a variety of contributions of advances in global surveillance and notification systems in order to help respond to emergencies, particularly public health emergencies such as emerging infectious diseases.

There has been great investment in global surveillance and notification systems, which made an important difference, particularly in the H1N1 response. Such investments enabled the earlier development and deployment of a pandemic vaccine as well as triggered local, national and global public health responses, as we just discussed.

Enhanced lab capacity in the U.S. and Canada led to earlier detection and characterization of the pandemic H1N1 virus. The Naval Health Research Center, the CDC, and state and local lab capacity in the U.S. also enhanced the detection of H1N1. There was also a trilateral agreement among the U.S., Canada and Mexico which allowed for lab typing of the pandemic strain and sharing of data among the three communities.

Looking at another example of the Hurricane Katrina response, we can see how various lessons were learned based on the response at the local, state and federal levels.

The red notations are acts by government officials. Surveillance of Katrina included tracking the storm and the people's movement in response to the storm. Epidemiology focused on who needed assistance and for what, and situational awareness focused on what was happening right now.

As you can see through the timeline, there was a rapidly occurring situation for which information needed to be communicated to responders almost on a minute-by-minute basis.

Here is more information about the Hurricane Katrina response. If you look at what happened, you can see that a public health emergency was announced and the governor ordered that all



residents leave New Orleans. However, at this point, there were no buses or trucks available to carry out the order, so from a situational awareness perspective, we saw that many people did not have access to the resources that they needed to respond appropriately.

Additionally, the New Orleans mayor, Ray Nagin, issued an SOS for help from the federal government. But if you remember, the way that responses are supposed to be handled, the mayor of New Orleans needed to ask for help from the state, who then needed to ask for help from the federal government.

If you think about what went wrong in this response, there were many levels of failure among those who were responsible, but we learned important lessons for future responses and it helped respond to emergencies such as Hurricane Sandy, which occurred recently.

Now, let's discuss vulnerable populations. Vulnerable populations include any individual, group or community whose circumstances create barriers to obtaining or understanding information or the ability to react as the general population.

There are a variety of circumstances that may create vulnerabilities, including, but not limited to, physical, mental, emotional or cognitive status, culture, ethnicity, religion, language, citizenship, geography, or socioeconomic status.

What's important to remember is that there's a distinction between vulnerable populations, which could really be almost anybody, and those with special medical needs who actually need special medical assistance.

Vulnerable populations may include those who don't have the resources, for example, to leave a particular area or don't understand the language when they're being given emergency instructions, whereas those with special medical needs may require medical interventions on a regular basis, such as dialysis, or may require assistive devices such as wheelchairs or assistive communication devices and the like.

Some examples of vulnerable populations and the impact of emergencies on them include: Hurricane Katrina, those with low socioeconomic status were unable to heed evacuation warnings because they had no transportation to get out of New Orleans and the affected area; during H1N1, we saw that pregnant women, young children, and those who were immunocompromised were particularly vulnerable to the H1N1 virus; and during 9/11, people with physical disabilities or language barriers were particularly vulnerable because they either could not exit buildings that were affected in a rapid manner or didn't understand emergency communication that was being given to the general public.

Now that we understand vulnerable populations, let's look at some unintended consequences post-emergency. Remember, from presentation one, we talked about various response challenges. I want you to take a moment to think about those challenges in the context of the two examples that we just discussed, both 9/11 and Hurricane Katrina.



Let's look at some specific unintended consequences as well. There may be insurance challenges when responding to an emergency, for example, for those who do not have flood insurance and are affected by a flood. There may be financial impacts. If you think back to the examples that we talked about of events such as Hurricane Katrina or 9/11 or Hurricane Sandy, the financial impacts to businesses and governments and communities are tremendous, as well as to individuals. There may also be political disputes. For example, there may be disputes regarding school closures, as there were during H1N1 where in some communities, the local politicians wanted to close schools, whereas public health agencies didn't, or vice versa. There may also be legal implications to emergencies, including where people are allowed to rebuild, for example, or who's at fault for various emergencies.

It's also important to note how professional responders may be augmented. Here are some examples of organizations that augment professional response agencies.

The Community Emergency Response Team educates people about disaster preparedness for hazards that may impact their area. It also trains them in basic disaster response skills such as fire safety, light search and rescue, team organization, and disaster medical operations. Using training learned in the classroom and during various exercises, CERT members can assist others in their neighborhood or workplace following an emergency when professional responders are not immediately available to help or may be elsewhere helping the more immediate response. CERT members are also encouraged to support emergency response agencies by taking a more active role in emergency preparedness projects in their communities.

The Red Cross has a whole cadre of volunteers who are used to respond to various emergencies, including local fires as well as larger scale emergencies such as hurricanes. Red Cross volunteers may be deployed all over the country in order to help respond to emergencies that occur.

Medical Reserve Corps is usually comprised of people who are clinically trained or public health trained. They usually augment local health department services, and may include activities such as vaccination, flu vaccines, staffing shelters in emergencies, and the like.

Some communities also have the Behavioral Health Reserve Corps, which is comprised of people with behavioral health training who can respond immediately to emergencies in their communities or may be sent out to other communities externally.

If you're interested in working with emergency response agencies, any of these might be good opportunities for you to become involved in your local community in order to help with emergency responses.

In summary, emergency responses require integration across many sectors. We talked about some specific examples of emergency responses and how it required coordination among various response agencies.



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There are also flexible, scalable systems in place such as NIMS and ICS to assist in emergency responses and make sure that responses are coordinated regardless of the scale of those emergencies.

Additionally, prior emergencies can teach us lessons about what worked well and what can be improved upon in future emergency responses, and we looked at specific examples such as Hurricane Katrina in which we learned a variety of lessons about how to respond to emergencies in the future.