

Tabletop Exercise Scenario: Arbovirus Outbreak in a Hurricane Shelter



General Information

Exercise Objectives

- Discuss the dissemination and collection of incident specific information using proper communication procedural chains.
- Discuss which stakeholders within the jurisdictions across public health, medical, law enforcement and other disciplines should be included in information exchange.
- Identify inter-jurisdictional public health stakeholders that should be included in the information exchange.
- Determine the levels of security clearance needed for information access across and between these stakeholders.
- Discuss the coordination of epidemiologic investigations and information sharing.

Exercise Structure

This exercise has the following 4 modules:

- Module 1: Background and Initial Case Appearance
- Module 2: Initial Response Actions
- Module 3: Widespread Outbreak
- Module 4: Recovery

Each module begins with an update that summarizes key events occurring within that time period. After the updates, participants review the situation and engage in jurisdictional group discussions of appropriate prevention/protection/mitigation/response/recovery issues. At the end of the jurisdictional group discussions, participants will engage in a moderated plenary discussion.

Exercise Guidelines

- This exercise will be held in an open, low-stress, no-fault environment. Varying viewpoints, even disagreements, are expected.
- Respond to the scenario using your knowledge of current plans and capabilities (i.e., you may use only existing assets) and insights derived from your training.
- Decisions are not precedent setting and may not reflect your organization's final position on a given issue. This exercise is an opportunity to discuss and present multiple options and possible solutions.
- Issue identification is not as valuable as suggestions and recommended actions that could improve prevention/protection/mitigation/response/recovery efforts. Problem-solving efforts should be the focus.

This exercise was developed as a part of the Georgia Hurricane Response Hub's Disaster Epidemiology workgroup. Funding for this activity has been provided to the National Network of Public Health Institutes (NNPHI) through a Cooperative Agreement with the Centers for Disease Control and Prevention (CDC – NU1ROT000004-01-00). NNPHI is collaborating with Rollins School of Public Health at Emory University and the CDC's National Center for Environmental Health on this project.

Exercise Assumptions and Artificialities

In any exercise, assumptions and artificialities may be necessary to complete play in the time allotted and/or account for logistical limitations. Exercise participants should accept that assumptions and artificialities are inherent in any exercise and should not allow these considerations to negatively impact their participation. During this exercise, the following apply:

- The exercise is conducted in a no-fault learning environment wherein capabilities, plans, systems, and processes will be evaluated.
- The exercise scenario is plausible, and events occur as they are presented.
- All players receive information at the same time.

Module 1: Background and Initial Case Appearance

August 1st

Hurricane Bob, a Category 5 storm, hits the Georgia coast on August 1st causing severe damage and flooding due to both rain and storm surge along the coast. Flooding caused by rain and rising rivers has extended into inland Georgia beyond the coast. Fortunately, the majority of residents did evacuate the coast.

September 1st

It has been 4 weeks since the storm passed and due to the widespread devastation, residents are not permitted to return the coast. Standing water continues to be a problem well inland. County Shelter has been open for several weeks, and while there have been sporadic instances of gastrointestinal illnesses in the shelter, there were no reports in the aggregate form reported to the DOC Operations Section on any infectious symptoms seen at the shelter in the last week.

An 8-year-old boy staying at County Shelter presents to the medical station with his parents with a fever of 103°F, rash, swelling and severe pain in the hands and feet, and a severe headache.

Questions

- What should the shelter nurse do at this point?
- What epidemiological questions should be asked?
- What infection control measures should happen in the shelter at this point, if any?

September 2nd

Nurse reports rash started several hours ago, is generalized, and maculopapular in nature. Fever spiked very suddenly as did the joint pain. Child's parents and younger sister are with him in the shelter. The child had no recent international travel.

After discussions with local epidemiologists, epi recommends that EMS be called due to the boy's high fever and severe pain. The boy and his family are transported to the local hospital, where the boy is admitted. The doctor has ordered tests for a suspected arbovirus, including dengue, West Nile virus, and chikungunya. The doctor finds out that the results may take up to 10 business days. The healthcare facility also notifies the local health department about the suspect case.

Questions

- What infection control measures would the shelter implement at this point, if any?
- How would the delay in laboratory results affect public health recommendations?
- What questions regarding exposure could the health department ask?

September 8th

One week has passed since the 8-year old boy first presented to the ER. The boy was discharged from the hospital three days after admittance, after his temperature dropped to a normal level following the appropriate supportive care. Public health partners had requested a sample be sent to the Georgia Public Health Laboratory (GPHL) to speed results and diagnosis. GPHL's results have just come back with a positive PCR result for chikungunya. The local health department's interview with the case's mother confirmed that the boy had not traveled out of Lowndes County in the month before symptom onset. She reports that her husband, who last traveled to Mexico the previous weekend, is now complaining of a fever, joint pain, and body aches.

Questions

- Should a press release be issued? Why or why not? Whose decision is it?
- What other actions could be considered by public health in response to the new information?

Module 2: Initial Response Actions

October 1st

Three weeks have passed since the initial case was identified in the 8-year old boy. Meanwhile, 20 more cases have been reported from commercial laboratories. Of the 20 cases, 14 were reported from Lowndes County where the index case was identified. Six of the cases were reported from other counties. Of the 14 from Lowndes where the index case resides, 3 have travel history outside of Georgia; 8 reported no travel in the past 3 weeks, and public health has not been able to contact 3 of the cases to obtain travel history. Of these 14 cases, 6 have PCR positive lab results from the state public health lab, and 8 have IgM positive results from commercial labs. There are at least 4 more cases that have negative IgM results from commercial labs, but have symptoms are consistent with chikungunya infection.

Questions

- How would you interpret the positive and negative IgM results from commercial labs?
- What factors should be considered when interpreting the results? Should results be verified at the Georgia Public Health Laboratory?
- What type of public messaging should be performed, and where should it come from? How much information should be released?
- Would you initiate any vector control actions at this point? Why or why not? If so, what types of vector control actions are available?
- Would you activate your Emergency Operations Center? Why or why not?
- What type of information should be collected from suspect cases?
- What type of recommendations should be made to suspect cases, if any?

October 2nd

In the past 24 hours there have been 7 additional suspect cases reported from this southern Georgia cluster. Five of these cases were reported from the same shelter that the original 8-year old boy was staying in. Four of the 7 people had not traveled outside of Lowndes County. Laboratory results are pending. Additionally, 5 shelter residents have become sick. Local vector control collected over 60 *Aedes aegypti* mosquitoes on the shelter premises the day before, as part of enhanced vector surveillance in the area. These were then sent to GPHL to be tested for the presence of chikungunya virus. Two pools of mosquitoes that were collected on the shelter's premises test positive for chikungunya virus by PCR.

Local vector control is continuing enhanced surveillance for *Aedes aegypti* mosquitoes. They are using CO2 traps, which are designed for *Culex* spp. mosquitoes, so they know that they are only trapping a small percentage of the *Ae. aegypti* in the area. The current number of identified cases in this cluster (confirmed, probable, and suspected) is 21. There could be more cases that have not sought medical care, or that were not tested for chikungunya. Of the known cases, epidemiologists have determined that 12 have come from the shelter or surrounding area, including the 8-year old index case and his father.

Questions

- Should medical surge plans be activated? Why or why not? If so, what actions might be taken?
- What actions can be taken to reduce risk of chikungunya transmission at the shelter?
- What additional steps could vector control consider at this time? Should anything be done at the shelter and surrounding area?
- How would you educate local medical providers and facilities?
- How and when would you raise community awareness on how to avoid mosquito bites and prevent mosquito breeding sites?

Functional Groups

Based on the information provided, participate in the discussion concerning the issues raised in Module 2. Identify any critical issues, decisions, requirements, or questions that should be addressed at this time.

The following questions are provided as suggested subjects that you may wish to address as the discussion progresses. These questions are not meant to constitute a definitive list of concerns to be addressed, nor is there a requirement to address every question.

All

- Discuss how that information would be shared. With whom will the information be shared?
- Discuss how contact with local health district Emergency Operations Centers (EOC) is established and maintained?
- What are the initial processes for addressing (i.e. treatment, timelines, etc.) an arbovirus outbreak, especially when dealing with the possibility of large-scale exposures?

- Discuss the process for disseminating the information to the general public regarding monitoring of any related symptoms? Include in the discussion how that information will be disseminated and the decision-making process regarding timelines for notifying, or not notifying, the public.
- Who will make those decisions?

Local Public Health

- Discuss local plans for alert and notification of staff and partners.
- What steps/procedures should health districts take to notify the public of a widespread public exposure?
- Discuss the factors that should be taken into consideration prior to making the determination to set up PODS. Include in the discussion proximity to hot zones, wind direction, etc., relative to the scenario.
- How will the state receive alerts regarding the current events?
- Discuss what plans/procedures are in place for state alerts and notifications.
- Discuss what plans would be activated at this point.
- Who would be notified and how?
- Discuss how contact with local health district Emergency Operations Centers (EOC) is established and maintained (state and local question).
- How would local EOC activation occur? Describe the process.

State Public Health

- Discuss how contact with local health district Emergency Operations Centers (EOC) is established and maintained (state and local question). Discuss control and command within the EOC and externally.
- Discuss state staff and partner notification procedures.
- Discuss scheduling staff.
- How will situational awareness be implemented and maintained throughout the event?

Public Health Epidemiology

- Discuss the roles of state and local epidemiologists.
- Describe how the coordination of epidemiological investigation and information sharing would occur and how would it affect emergency operations.
- Describe how the reporting of clusters of illness information is disseminated.

Healthcare Community

- Discuss the information sharing process that would occur within the healthcare community at this point.
- Discuss alert and notification planning efforts that may transpire at this time within the healthcare community.

Public Information/Risk Communications

- Describe the communications chains/procedures.
- What would public information dissemination procedures look like at this stage of the incident?
- Discuss how the Public Information Officer (PIO) will address rumors. Additionally, discuss procedures for addressing/ensuring consistent messaging.
- Discuss warnings and messages the public would need to receive at this point.

Nursing

- Discuss nursing personnel concerns that would be addressed or plans that would be initiated at this time.

Module 3: Widespread Outbreak

October 25th

It is now late October and there has been a continuing increase in the number of chikungunya cases reported to public health. The geographic distribution has also disseminated greatly. There are now a total of 62 cases throughout the southern and central parts of the state. About 30% of these cases report travel history outside of Georgia (mostly to Mexico), 20% have been lost to follow-up, and 50% report no travel history outside of Georgia. This increase in cases has corresponded the unusually wet conditions since and after the hurricane, and vector control and university partners have noted a dramatic increase in the mosquito populations, including those of *Aedes aegypti*. Local vector control partners across the state have utilized all of their available resources and cannot up-scale surveillance and control efforts any further, despite the continuing increase in human cases, and case expansion into new areas. Many hospitals, especially those in more rural areas, are experiencing difficulties in keeping up with the demand to their ERs. There is a high level of public concern, and many people are showing up at medical centers out of panic. Retailers have been perpetually sold out of insect repellent for both the person and home, for weeks. The shelter closed and people were allowed to return to the coast a week ago.

Questions

- What activities should vector control prioritize? How could they target interventions?
- Which laboratory tests should be prioritized?
- What human surveillance, investigation, and intervention activities should be prioritized? How would you target interventions?
- How do you handle the increasing number of ill and worried-well? How would you recommend triaging patients and managing the influx at ERs and urgent care facilities?

Functional Groups

Based on the information provided, participate in the discussion concerning the issues raised in Module 3. Identify any critical issues, decisions, requirements, or questions that should be addressed at this time.

The following questions are provided as suggested subjects that you may wish to address as the discussion progresses. These questions are not meant to constitute a definitive list of concerns to be addressed, nor is there a requirement to address every question.

All

- How should information regarding the possibility of a plague affecting communities be disseminated? Who should disseminate that information?
- Discuss the declaration process, local and state. Include in that discussion with whom that information should be shared.

Local Public Health

- Discuss your local strategies/plans for providing personnel to support incident response efforts.
- Discuss the role local and state public health would have in activating and operating an Emergency Operations Center.
- Discuss processes for monitoring local medication supplies. What determines “shortages”?

State Public Health

- Describe how and when lead staff will communicate with local public health.
- Discuss processes/procedures for command and control within the State EOC.

Behavioral Health

- Continue to discuss the role of behavioral health during this stage of the scenario. Additionally, discuss communication lines, information sharing and messaging, related to behavioral health, that should be disseminated to the public.
- Discuss plans/procedures for addressing possible psychological first aid support for first responders and public health workers.

Nursing

- Discuss the role(s) nursing would play at this point.
- Discuss how the roles/responsibilities of state nursing staff would differ from local nursing staff.

Healthcare Community

- Discuss the information sharing process within the healthcare community during this time.
- Discuss healthcare plans for supporting the event, while safeguarding healthcare community personnel.

Public Health Laboratory (PHL)

- Describe the role the PHL plays in the process (analysis, declaration and information dissemination processes)?

Public Information/Risk Communications

- Discuss how the PIO (local and state) will address rumors. Additionally, discuss procedures for addressing/ensuring consistent messaging.
- How would the role of state PIO differ from local PIO?
- Discuss warnings and messages the public would need to receive at this point.
- Discuss the process at this point for coordination between state and local risk communicators, specifically when reaching out to the affected health district Risk Communicator, (i.e. to gather fact sheets, and prepare for public interaction).
- Discuss procedures and timelines indicating when the Risk Communicator/EPR and/or EPI reach out to Georgia Poison Center (GPC) to prepare to stand up the Surge Public Health Emergency Response (SUPHER) Call Center.

Law Enforcement

- What role/responsibility would law enforcement play, if any?

- Discuss the information sharing process between, state, local and federal law enforcement.
- Discuss the transfer of responsibility procedures, if any, between federal and state law enforcement, and state and local law enforcement. How would that transfer occur?

Module 4: Recovery

December 28th

It's now late December. After continuous efforts by public health and vector control partners, the number of new cases of chikungunya has declined. This occurred in conjunction with decreasing temperatures and rainfall during the fall months, which led to a natural decline in mosquito populations.

Questions

- How should the EOC be deescalated? Should anything remain in place?
- How should mosquito surveillance be deescalated?
- How should epidemiologic investigations and interventions be deescalated?
- Discuss how hot wash activities with all involved partners (police, state and local public health, healthcare providers, etc.) would be conducted.
- What should be done to prepare for the next mosquito season? What parties should participate in this planning phase?