Situation Manual

Friday, September 13, 2024

Situation Manual (SitMan) provides exercise participants with all information necessary to successfully complete this exercise. Exercise material is intended for the exclusive use of exercise planners, facilitators, and evaluators, but players may view other informational materials that are necessary to aide their performance. All exercise participants may view the SitMan.

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EXERCISE OVERVIEW

Exercise Name	Viral Vigilance
Exercise Dates	Friday, September 13th 2024
Scope	This exercise is an educational Tabletop, for students
Focus Area(s)	Response
Capabilities	(1) Public Health Surveillance and Epidemiological Investigation, (2) Medical Capacity, (3) Emergency Public Information and Warning
Threat or Hazard	Viral Hemorrhagic Fever
Scenario	Emory student returns from experience abroad and introduces disease into the Emory community.
Sponsor	Rollins School of Public Health (RSPH), Emory University School of Medicine (SOM), Emory University
Participating Jurisdictions/ Organizations	Rollins School of Public Health, Student Outbreak Response Team Rollins School of Public Health, Humanitarian Emergencies Research Team Emory School of Medicine and associated medical trainees Rollins School of Public Health, Epidemiology Department Emory University Hospital Georgia Department of Public Health (GDPH) Emory University Student Health Services (SHS) The Serious Communicable Disease Program (SCDP) at Emory Emory University Office of Critical Event Preparedness and Response (CEPAR)
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PREFACE

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GENERAL INFORMATION

Exercise Objectives and Capabilities

The following exercise objectives in Table 1 describe the exercise's objectives and capability domains. Objectives are linked to capabilities which are the means to accomplish a mission or function.

Exercise Objectives	Capability
Develop a comprehensive case definition for Marburg Virus Disease at Emory University, incorporating its transmission modes, epidemiology, diagnosis, and control measures, to support effective epidemiological investigation and prepare for potential medical surge.	Public Health Surveillance and Epidemiologic Investigation
Within 24 hours of suspecting a case of Viral Hemorrhagic Fever (VHF) like Marburg virus, assess and define the necessary information required to adequately collect data regarding exposures, contacts, and potential transmission pathways.	Public Health Surveillance and Epidemiologic Investigation
Analyze the steps, strategies, challenges, and quarantine measures needed for the contact tracing investigation of a VHF case.	Public Health Surveillance and Epidemiologic Investigation
Formulate additional questions to supplement GDPH's current set for improved contact tracing data collection specifically tailored to a Marburg virus outbreak.	Public Health Surveillance and Epidemiologic Investigation
Evaluate criteria for monitoring suspected MVD cases according to the case definition provided considering the limitations and best practices to mitigate the spread of disease.	Medical Surge
Identify strategies to manage overflow beyond Emory University Hospital's SCDU capacity and best practices for coordinating with additional healthcare facilities.	Medical Surge
Prioritize cases based on exposure risk to VHF by implementing a systematic approach and thorough contact tracing to effectively identify specific needs and mitigate the spread of the disease.	Medical Surge
Categorize and evaluate risk profiles of individuals based on their exposure to a VHF, applying established criteria to determine their risk levels and need for monitoring and intervention.	Medical Surge
Utilize the information acquired from previous modules to facilitate the creation of effective preparedness communication templates.	Emergency Public Information and Warning
Apply communication principles templates efficiently to convey science communication messages to different population segments adequately.	Emergency Public Information and Warning
Ensure communication templates mitigate the misinterpretation of the intended messaging.	Emergency Public Information and Warning
create a communication strategy for MVD outbreaks and define communication types, select suitable modalities, and establish a messaging cadence for timely updates.	Emergency Public Information and Warning
Incorporates a layered approach to convey uncertainty as knowledge evolves during medical and public health response to potentially high-risk pathogen and establish a process for filtering information to ensure accuracy and relevance in communication materials.	Emergency Public Information and Warning

Participant Roles and Responsibilities

There are 4 types of participants in this exercise: student players, observers, subject matter expert (SME) facilitators and evaluators:

- **Players:** Students who will play active roles in answering module questions. Players discuss or initiate actions in response to the fictional situation.
- **SME table facilitators:** Moderate and guide player discussions. They also provide additional information or resolve questions as required.
- **Evaluators:** Observe and document certain objectives during the exercise. Their primary role is to document player discussions, including how and if those discussions conform to plans, polices, and procedures.

Exercise Structure

This exercise will be a multimedia, facilitated exercise. Players will participate in the following 4 modules:

- Module 0: VHF case definition
- Module 1: Epidemiological investigation & medical surge capacity
- Module 2: Risk Profiles & Triage
- Module 3: Communications

Each module begins with a situation update that summarizes key events occurring within a specified time period. After each update, participants review the situation and engage in group discussions centered around specific questions or tasks. SME facilitators will guide discussion.

There will be eight table groups participating in this exercise. For most modules (modules 0, 2 and 3), all eight tables will be working on the same activities. Only in Module 1, will groups be divided into two distinct capability-based tracks according to the table below:

Public Health Surveillance & Epidemiologic Investigation Track Lead: Dr. Allison Chamberlain	Medical Surge Track Lead: Dr. Jamie Felzer
Group 1 – Dr. Sharon Rabinowitz	Group 5 – Dr. Aneesh Mehta
Group 2 – Sam Shartar	Group 6 – Dr. Colleen Kraft
Group 3 – Dr. Amanda Feldpausch	Group 7 – Dr. Alex Isakov
Group 4 – Dr. Jessica Pavlick	Group 8 – Dr. Jodie Guest

Exercise Guidelines

- This exercise will be held in an open, no-fault environment wherein varying viewpoints, even disagreements, are expected.
- This event was designed for training purposes for public health and medical trainees interested in infectious disease emergency response.
- The assumption is that the exercise scenario is plausible and events occur as they are presented. All players will receive information at the same time.

MODULE 0: VHF CASE DEFINITION

Scenario

Day 1: An Emory student named Jason returned at the start of the Fall 2024 semester after a summer study-abroad trip to Burundi, Africa. Ten days after his return, he began to exhibit symptoms of fever, headache, and fatigue, which progressed into gastrointestinal symptoms on day 11 with non-bloody, watery diarrhea, nausea, and abdominal cramping. On day 12, he decides to go to Emory Student Health Services for an evaluation. The clinician gives him oral rehydration fluids, anti-nausea medicine under the tongue and sends Jason back to his dorm to rest for the weekend as his symptoms seemed consistent with traveler's diarrhea or food poisoning. The clinician advises Jason to drink a lot of fluids with electrolytes, providing caution against dehydration and giving precaution signs that would require Emergency Department (ED) evaluation. Before heading home, Jason gets a text from his buddy Chad telling him to go to Jack's house party that evening. Jason feels a bit better after the fluids and antiemetics, so he decides to check out the party, but after about 30 minutes has an episode of vomiting. His roommate helps him get home and into bed to rest and hydrate.

Day 3: Despite resting for the next two days, Jason gets worse, now with severe weakness that makes it hard for him to get out of bed to go to the bathroom. Since he's still vomiting and having watery diarrhea quite frequently, his roommate places a bucket on the side of the bed and tries to get him to drink water and electrolyte drinks. However, it is hard for him to keep anything down. His headache has also gotten worse, and his fever is now 102°F. His roommate tells him to go to Emory University Hospital ED as advised by student health. Jason goes to the ED early Monday morning. He is checked into where the triage nurse starts an IV (which has a lot of oozing after placement), takes labs and vitals, and infuses a bag of IV fluids. While in the triage room, he vomits again, and staff from environmental services (EVS) come promptly to clean it up so he can be moved to a room. His vitals show that his HR is 110, BP is 105/65, Temperature is 102.4, SpO2 is 94%, RR 22. Due to Jason's symptoms, recent travel abroad, and incubation period over the normal period for traveler's diarrhea, the ED physician is now expanding the differential diagnoses to include invasive/inflammatory gastroenteritis, Listeria +/- meningitis, acute HIV infection, Viral Hemorrhagic Fever (VHF), COVID-19, malaria. Since VHF is on the differential diagnosis list, the ER on-call physician proceeds to contact the 1-866-PUB-HLTH (1-866-782-4584) and alerts the Georgia Department of Public Health (GDPH). Upon potentially suspecting a VHF infection, GDPH proceeds to activate their respective protocols and promptly notifies the Centers for Disease Control and Prevention (CDC), recognizing VHFs as a Class A bioterrorism agent with significant implications for public health and national security.

Multiple discussions are had between the ED physician, Infectious Disease physician, GDPH staff, the Emory University Hospital (EUH) biocontainment unit physician, and the hospital CEO, and within 2 hours, the Serious Communicable Disease Unit (SCDU) is activated. During this decision time, Jason is placed in a negative pressure room in the ED with contact and airborne precautions and minimal staff contact to keep any potential transmission low. Jason is subsequently transported from the hospital ED to the SCDU using specialized transport methods to minimize exposure risk to providers and others.

Activity

Create a case definition

> Instructions: Recall the tenets of a good case definition. In your group, develop a working case definition for suspected viral hemorrhagic fever based on the circumstances presented in this scenario thus far.

MODULE 1: EPIDEMIOLOGICAL INVESTIGATION & MEDICAL CAPACITY

Questions and Activity

Based on the information provided in the scenario thus far, answer the following questions, as appropriate for your table's assigned capability.

Public Health Surveillance and Epidemiologic Investigation (Groups 1-4)

Associated handout: Contact Tracing Form

1. What are the key steps involved in initiating a contact tracing investigation for a suspected case of VHF?
1. What information needs to be communicated to close contacts during case investigation?
2. What information needs to be collected from close contacts?
3. What challenges might arise when tracing contacts from the house party?
4. How can contact tracers address potential challenges or barriers to lack of cooperation from individuals identified as close contacts?
5. Examining the contact tracing form provided, what, if any, questions would you add to the form?

Medical Surge (Groups 5-8)

Associated handout: Map of possible quarantine locations

1. Emory University Hospital's SCDU has a maximum capacity to treat 2 confirmed VHF cases. Knowing this, how will you plan for the potential overflow of suspected and confirmed cases beyond this capacity?
2. What are some options where exposed people should quarantine? What instructions will you give them for signs and symptoms to watch for? How will people monitor their vitals by themselves?
3. What considerations will drive decisions for isolation & quarantine measures for suspected and confirmed VHF cases among individuals who attended the party?
4. What steps will you take to address potential challenges related to staffing shortages due to illness, quarantine requirements, or healthcare worker burnout during a prolonged surge period?
5. Discuss the pros and cons at each location depicted on the map to quarantine non-symptomatic individuals who got exposed at the party. Please list your top 3 locations.

MODULE 2: RISK EXPOSURE TRIAGE

Situational updates

Day 4: Contact tracing has begun to try to find anyone who was at the party Jason attended or may have had contact with Jason during his infectious period. As a precautionary measure, all students who had attended the party have been placed under quarantine. This development has heightened

tensions at the university and increased the urgency for swift and decisive action to prevent further transmission of the virus.

The SCDU at Emory Hospital is treating Jason per protocol, with large amounts of fluids, empiric antibiotics, medicines to support blood pressure and any bleeding, and watching for signs of bleeding. Additionally, the Emory University Hospital Biocontainment Unit's SCDU laboratory has confirmed via reverse-transcription polymerase chain reaction (RT-PCR) that Jason is indeed infected with the Marburg virus. Upon this confirmation, GDPH proceeds to contact the CDC to confirm that the patient is in fact infected with Marburg virus.

Day 5: One close contact calls the 866 public health number with a fever of 104°F, severe headache and myalgias. After discussion with the public health practitioners and their high-risk exposure status, they are deemed to be a suspected cases and special Infectious Disease Transport Network is activated to safely move them to the SCDU for further monitoring and evaluation.

Questions and Activity

*Associated handout: **Exposure Risk Profile Chart***

Instructions: Look closely at the risk profile chart provided. This chart details the profiles of individuals in relation to their activities, proximity to Jason, and other relevant factors. Fill in the blanks of the chart according to the instructions below:

1. **Determine Risk Factors**
   a. **Task:** Using the information from the chart and Dr. Harris's introduction, describe potential risk factors for each profile.
   b. **Action:** Consider factors such as:
      i. Frequency and duration of interactions with Jason
      ii. Nature of the activities involved (e.g., high-risk activities)
      iii. Any other known risk factors (e.g., activities, underlying health conditions, symptoms, confirmed contact with others at risk)

2. **Categorize Risk Levels**
   a. **Task:** Based on your discussion, categorize each profile into one of the following risk levels:
      i. **Low Risk:** Minimal or no direct interaction with Jason, and no significant other risk factors.
      ii. **Medium Risk:** Some level of interaction or exposure, but not constant or high-risk.
      iii. **High Risk:** Significant or frequent interaction with Jason or high risk for other reasons.
   b. **Action:** Assign each profile to one of these categories based on the information and the criteria provided.

3. **Determine Quarantine Characteristics**

a. **Task:** Based on the exposure risk you assigned to each individual, discuss how each profile should be instructed to quarantine.
b. **Action:**
    i. Discuss ideal characteristics of their quarantine location.

SME FEEDBACK

Module 3: Communications

Situational Update

Day 7: Following the implementation of rigorous contact tracing measures, all individuals who had potential exposure to Jason have been successfully traced, contacted, quarantined, monitored and/or admitted as needed to Emory Hospital SCDU or other SCDU around the country. This swift action helps ensure the health and safety of the Emory University community and beyond. Mass care efforts are underway to support those under active surveillance. Emory University, in collaboration with internal colleagues from Campus Life, local authorities and community partners, is organizing the distribution of essential supplies, food, medical resources, and psychological support services to individuals impacted by the quarantine.

Unfortunately, Jason continues on life support with worsening disease - multi-system organ failure including hypovolemic/hemorrhagic shock, renal failure requiring renal replacement therapy, respiratory failure and severe encephalopathy. Due to his infection with Marburg Virus and multiorgan failure, he was deemed not to be a candidate for Extracorporeal Membrane Oxygenation (ECMO). Despite the highest quality of supportive care, he succumbed to his illness and dies. The confirmation of his death has intensified concerns within the Emory community hospital and raised alarm about the potential spread of the virus among the EUH staff. Additionally, efforts are being made to communicate effectively with the quarantined individuals' families and the broader community, ensuring they receive the necessary information and assistance during this challenging time.

Questions and Activity

Instructions: It is time to communicate with various stakeholders about Jason and the potential spread on campus, in the hospital and to the larger community without putting Jason's identity at risk. Each table group will be assigned one of these target audiences (2 groups per audience):

- Greater Emory community
- Emory parents
- Hospital staff
- The public at large through delivery of information to the media or social media

1. **Task: Create communication deliverables for your audience**
    a. **Action:** Using the information about the audience you are communicating with, identify the form of communication you will use and write this first communication. Consider factors such as:
        a. Style of communication
        b. Amount and level of information to be provided
        c. Frequency of communication
        d. Where the audience can go for more information

2. **Task: Compare with your partnered group**
    a. **Action:** Compare your strategy with the other group assigned to communicate with your same audience:

i. **Style of communication:** Did you choose the same styles and if not, is one preferred?
ii. **Amount of information provided:** Now seeing two options for information delivery, which provided the right level and amount of information?
iii. **Frequency:** Did the two communication groups differ in their frequency? Which is preferred?
iv. **More information:** Is there consistency in where each group sent their audience for more information? What are the best resources for this?

REPORT OUT

APPENDIX A: EXERCISE SCHEDULE

Time	TTX Timeline	
7:30am-8:00	Registration, breakfast, participant arrival and table assignments	
All Exercise Participants		
8:00am-8:05am	Intro to TTX + Rules	
Module 0		
8:05am-8:10am	Module 0: Scenario	
8:10am-8:32am	Module 0: Introduction to VHF and NETEC	
8:32am-8:45am	Activity 0: Create case definition	
8:45am-8:55am	Activity 0: Case definition report out	
Module 1		
8:55am-9:20am	**PH Surveillance and Epi Investigation Capability Track**	**Medical Surge Capability Track**
	Activity and Questions (track specific)	Activity and Questions (track specific)
Module 2		
All Exercise Participants		
9:20am-9:23am	Module 2: Situational update	
9:23am-9:50am	Activity and Questions	
9:50am-10:20am	SME Feedback	
10:20am-10:30am	Break	
All Exercise Participants		
Module 3		
10:30am-10:35am	Module 3: Situational update	
10:35am-10:50am	Module 3: Communications presentation	
10:50am-11:25am	Activity	
11:25am-12:00pm	Module 3: Report out	
12:00pm-12:15pm	Closing remarks	

APPENDIX B: EXERCISE PARTICIPANTS

Participating Organizations
Rollins School of Public Health
Student Outbreak Response Team
Humanitarian Emergency Response Team
Rollins School of Public Health, Department of Epidemiology
Emory University School of Medicine
Emory School of Medicine and associated medical trainees
State
Georgia Department of Public Health (GDPH)
Emory University
Emory School of Medicine and associated medical trainees
Emory University Hospital
Emory University Student Health Services
The Serious Communicable Disease Program (SCDP) at Emory
Emory University Office of Critical Event Preparedness and Response (CEPAR)

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