



North Carolina Department of Health and Human Services

Ebola Prevention and Response Training

Health Department Scenario

Objectives

- To recognize signs and symptoms of Ebola Virus Disease (EVD)
- To initiate rapid response measures
- To evaluate current response plans
- To strategize to respond more effectively to a potential EVD outbreak

Table Top Exercise Instructions

- Systematically think through the case as if it was a real scenario
- Participation and discussion is important
 - Teamwork
 - All comments and questions are valuable

Who is a Person Under Investigation for Ebola?

Clinical Criteria

- Fever $\geq 100.4^{\circ}\text{F}$
- **OR**
- Any of the Following:
 - Headache
 - Muscle Pain
 - Vomiting
 - Diarrhea
 - Abdominal Pain
 - Unexplained bruising or bleeding

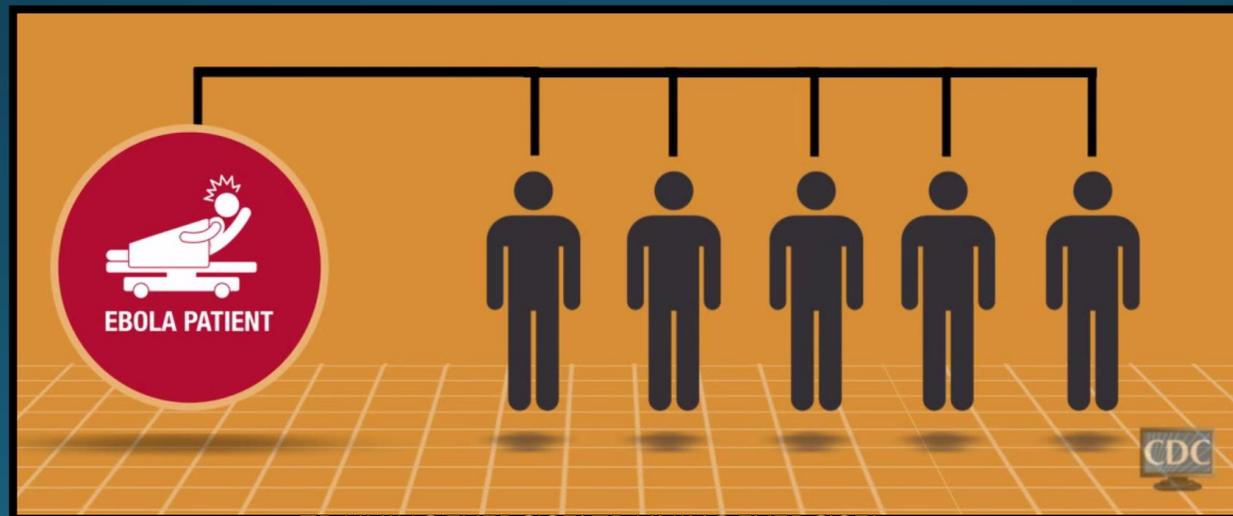
AND

Epidemiological Risk Factors

- Symptom onset within past 21 days of exposure to any of the following:
 - Contact with blood, other bodily fluids or human remains of patient known or suspected to have EVD
 - Residence in or travel to area where EVD transmission is active
 - Direct handling of bats or other non-human primates in endemic area

Scenario

You are trying to monitor 48 people who came in contact with a patient who was diagnosed with Ebola at a local hospital one week ago. The index case is a 35 year old male who traveled from Guinea 12 days ago to visit his family members in Raleigh. The index case developed Ebola symptoms 3 days prior to his hospitalization. One day after he was admitted to the hospital, the results for his Ebola test were confirmed to be positive by the CDC. He was staying with four family members and one dog in a condominium in downtown Raleigh.



Discussion

- What other questions would you ask?
- What is the CDC guidance on the evaluation of persons who have come in contact with a patient known to have Ebola?
- What are the restrictions placed on those being monitored through contact tracing?
- What measures need to be taken to disinfect the home of the index case?
- What measures, if any, need to be taken to monitor pet animals?
- What are your next steps?



You wish to further evaluate the **48 contacts**

Your excellent investigative skills have revealed that...

- **4 were family members** of the index case (3 had extensive contact and cleaned up index case's vomit, 1 was mostly at work and had brief contact with the index case)
- **3 were EMS personnel** who were not wearing proper PPE while transporting the index case to the hospital
- **5 were physicians** at the hospital involved in providing care to the index case (1 was an ER physician who did not wear proper PPE on initial presentation, 4 were hospital physicians with proper PPE)
- **6 were nurses** at the hospital involved in providing care to the index case (2 were ER nurses who did not wear proper PPE on initial presentation, 4 were hospital nurses with proper PPE)
- **2 were nurse assistants** involved in cleaning the patient after he vomited and had diarrhea (both used proper PPE)
- **3 were lab technicians** involved in collecting and handling blood samples from the index case (all used proper PPE)
- **12 were patients in the ER waiting room** during the same time as the index case
- **10 were family friends** who visited the index case for a dinner party 4 days prior to hospital admission
- **1 was a bank teller** whom the index case interacted with 4 days prior to hospital admission
- **2 were neighbors** who brought chicken soup to the index case 1 day prior to hospital admission when they learned that the index case was not feeling well

Discussion Continued

- Please classify the 48 contacts using the following table:

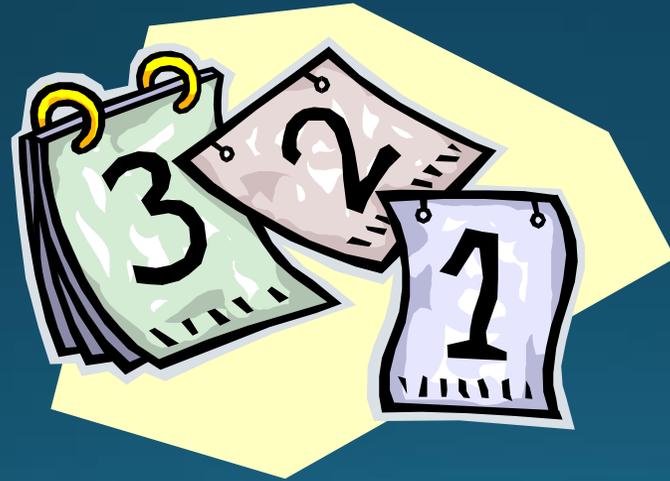
	High Risk Exposure	Low Risk Exposure	No Known Exposure
Family Members			
EMS personnel			
Physicians			
Nurses			
Nurse Assistants			
Lab Technicians			
ER Waiting Area Patients			
Family Friends			
Bank Teller			
Neighbors			

Discussion Continued

- Which of the 48 contacts should be placed under “active monitoring”?
- Which of the 48 contacts should be placed under “self monitoring”?
- Please reference the CDC algorithm for evaluating contacts:
<http://www.cdc.gov/vhf/ebola/pdf/ebola-algorithm.pdf>

Scenario Continued

Three days later...



Scenario Continued

You are notified that 10 of the actively monitored contacts have developed a fever. Four of these persons are in Chapel Hill, three in Durham and three in Raleigh.



Discussion

- What questions would you ask now?



Scenario Continued

- The three febrile persons in Raleigh are all immediate family members of the index case
- The fourth remaining family member remains asymptomatic
- Two of the febrile persons in Chapel Hill are EMS workers who transported the index case to the hospital one week ago
- The other two febrile persons in Chapel Hill are friends of the index case and visited the index case 10 days ago for a dinner party at his condominium
- The three febrile persons in Durham include one physician and two nurses who treated the index case when he initially presented to the emergency room

Discussion Continued

- How should the newly febrile persons be approached and evaluated?
- How will transportation be arranged for the newly febrile persons? Which hospital will accept these febrile persons?
- How and when should they be isolated?
- What further contact tracing needs to be conducted now? How would you employ contact tracing in this situation?
- Should all family members be actively monitored together or separately due to their difference in symptom development?
- What is the procedure for testing these febrile persons for Ebola?
- How will food and necessary supplies be provided to those individuals being isolated?
- What counseling and support services will be given to these febrile persons and their family members?
- How do you interact with the media?
- What measures do you need to take to protect the public health of the broader community?

Scenario Continued

- Four of the asymptomatic contacts are now no longer allowing health care workers to monitor their temperatures to check for the development of fever stating that it “infringes on their rights”
- These four contacts are also stating that they did not have that close of an exposure to the index case and that they find it inconvenient to be repeatedly checked for fever



Discussion Continued

- What procedure will you take to enforce compliance with contact tracing?
- What is the procedure to quarantine an individual and when would that be necessary?



Scenario Continued

- A decision was made to test the 10 febrile contacts for Ebola
- You receive a call from the state health lab that 8 of the 10 febrile contacts test positive for Ebola
- These results are confirmed by the CDC
- The two febrile contacts who did NOT test positive are the family friends from Chapel Hill who visited the index case 10 days ago

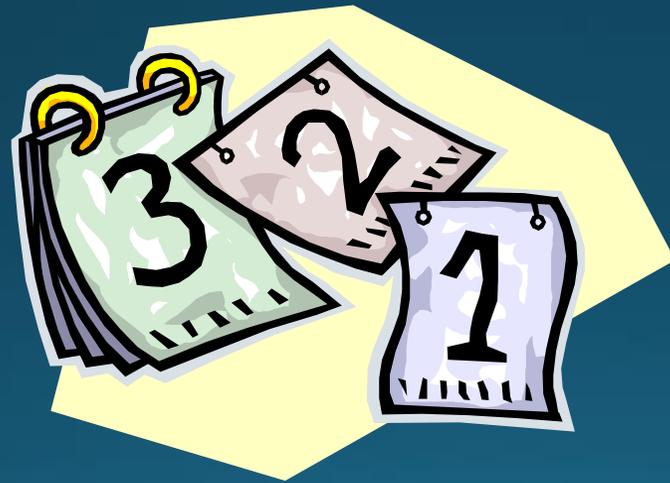


Discussion Continued

- Which hospital will accept these newly diagnosed cases? Should newly diagnosed Ebola cases be transferred to hospitals that have previously dealt with Ebola? If so, how will transportation be arranged for the newly diagnosed cases?
- How would you ensure that there are enough PPE supplies for healthcare staff?
- What procedures need to be taken to properly dispose of the patients' waste?
- What forms/instructions do you need? Are there any regulations that you need to comply with?
- What arrangements need to be made to accommodate and work with CDC investigators, DPH contact tracers, and the media, if necessary?

Scenario Continued

Three days later...



Scenario Continued

- The index case rapidly deteriorates and is placed on life support
- Despite all resuscitative efforts, the index case passes away



Discussion Continued

- What precautions need to be taken to ensure adequate protection while handling the bodily remains?
- Should the body of the index case be buried or cremated?
- What procedures need to be implemented during the funeral/memorial service?

Acknowledgements

The North Carolina Division of Public Health expresses its appreciation to

Bhavini Patel Murthy, MD, MPH
Preventive Medicine
University of North Carolina at Chapel Hill

Neil Chandra Murthy, MD, MPH
Emergency Medicine
Duke University Medical Center

for their assistance in creating scenarios to better prepare local health department Epidemiological Teams for an Ebola Exposure event.

For more information, please contact the North Carolina Division of Public Health Communicable Disease Branch at 919-733-3419