

Texas Medical Association (TMA) and Texas Nurses Association (TNA)  
Tele-Town Hall  
Oct. 20, 2014

### **Communication/Education/Planning**

- *I run a behavioral health hospital. If I want to implement Ebola protocols, where do I start?* Contact your local health department (LHD) and/or the Texas Department of State Health Services (DSHS). In addition, the Centers of Disease and Prevention Control (CDC) has posted a few checklists and algorithms on its website, including these:
  - Checklist for Ebola preparedness
  - Checklist for patients being evaluated
- *Is there a plan to implement a toll-free hotline for patients to call with Ebola-related questions?* That may be a consideration in the future. Currently, individuals should contact their local or regional health department.
- *Are there any plans for a public service announcement or education on the correct pre-notification process so we can get our residents informed as to what they need to do?* Those may be considerations in the future. Currently those decisions would be made at the local level.
- *Is there a PDF document or handout for physicians to use to screen patients for travel history?* See CDC website for travel-related information.
- *What can doctors do to educate their patients?* Physicians can refer to LHD/DSHS and CDC resources to educate patients as well as themselves and their peers/staff. The DSHS and CDC websites contain a wealth of information.
- *Who developed the list of Texas hospitals that can care for Ebola patients?* Texas Gov. Rick Perry created the list.

### **The Virus**

- *Does ultraviolet (UV) light affect the Ebola virus?* Yes. UV light is effective in deactivating the virus.
- *Should we allow for a longer incubation period? I've heard some patients became ill after more than 21 days. The CDC calls for 21 days, but I've heard 5 percent of patients have delayed onset of symptoms.* The mean onset of symptoms is eight to 10 days. A period of 21 days takes those delayed onset of symptoms into account. Patients become contagious at onset of symptoms.

- *Public health officials say patients aren't contagious while asymptomatic. When do patients switch over to being contagious? Patients become contagious at onset of symptoms.*
- *How is it that there is no airborne spread? Generally, virus can be aerosolized. Might we be giving the wrong impression of how this disease is transmitted? Can Ebola virus be included in respiratory secretions? Ultimately, could aerosolized droplets have been the way the health care workers caring for the Ebola patient in Texas became ill themselves? Yes, bodily secretions can become aerosolized; thus the enhanced precautions recommended for when aerosol-generating procedures are performed. However, now the CDC personal protective equipment (PPE) recommendations are for a N95 respirator or powered air purifying respirator (PAPR).*
- *Why is Ebola not considered airborne? From CDC:*

Airborne transmission of Ebola virus has been hypothesized but not demonstrated in humans. While Ebola virus can be spread through airborne particles under experimental conditions in animals, this type of spread has not been documented during human EVD [Ebola Virus Disease] outbreaks in settings such as hospitals or households. In the laboratory setting, non-human primates with their heads placed in closed hoods have been exposed to and infected by nebulized aerosols of Ebola virus. In a different experiment, control monkeys were placed in cages 3 meters away from the cages of monkeys that were intramuscularly inoculated with Ebola virus. Control and inoculated monkeys both developed Ebola virus infection. The authors concluded that "fomite and contact droplet" transmission to the control monkeys was unlikely, and that airborne transmission was most likely, but they did not discuss the potential behaviors of caged non-human primates (e.g., spitting and throwing feces) that might have led to body fluid exposures. Similarly, an outbreak of Reston virus (Reston ebolavirus species, which does not cause EVD in humans) infection occurred in a quarantine facility housing non-human primates in separate cages and the transmission route could not be confirmed for all infected primates. Multiple animal handlers developed antibody responses to Reston virus suggesting asymptomatic infection was occurring in humans with direct animal contact and implicating animal handling practices in transmission between primates. In a different study, piglets that were oronasally inoculated with Ebola virus were able to transmit infection to caged non-human primates that were placed 20 cm from the piglets. The piglet and primate cubicle design did not permit the investigators to distinguish among aerosol, small or large droplet, or fomite transmission routes, and it was noted that pigs are capable of generating infectious short range aerosol droplets more efficiently than other species. A more recent experiment that was specifically designed to further evaluate the possibility of naturally-occurring airborne transmission of Ebola virus among non-human primates showed no transmission of Ebola virus from infected to control primates placed 0.3 meters apart in separate open-barred cages and ambient air

conditions, but with a plexiglass divider that prevented direct contact between the animals.

In outbreak investigations, some EVD patients have not reported contact with another EVD patient, leading to speculation regarding transmission via aerosolized virus particles. In the Kikwit outbreak, 12 (3.8%) of 316 EVD patients did not report high-risk contact with a known EVD patient. EVD was not laboratory-confirmed in any of these 12 patients, however, and exposure histories for 10 of the 12 patients were provided by surrogates (because the 10 patients died before they could be interviewed); direct contact with EVD patients could have been missed because of wording of the study instrument, and transmission via droplets or fomites were also not ruled out. All 74 patients with EVD confirmed by RT-PCR testing or an Ebola antibody or antigen detection assay in this outbreak had high-risk exposures to Ebola patients. Similarly, in the 2007-2008 Uganda outbreak, although some probable (not virologically-confirmed) cases did not have a reported contact exposure, all 42 laboratory-confirmed cases had contact with a known EVD case. Also, in a separate analysis of the Kikwit outbreak, the presence of cough (19% of primary cases within households) did not predict secondary spread of EVD.

- *How many strands of Ebola are there, and are any more deadly than the others?* According to CDC:

Ebola is caused by infection with a virus of the family Filoviridae, genus Ebolavirus. There are five identified Ebola virus species, four of which are known to cause disease in humans: Ebola virus (Zaire ebolavirus); Sudan virus (Sudan ebolavirus); Taï Forest virus (Taï Forest ebolavirus, formerly Côte d'Ivoire ebolavirus); and Bundibugyo virus (Bundibugyo ebolavirus). The fifth, Reston virus (Reston ebolavirus), has caused disease in nonhuman primates, but not in humans.

Ebola viruses are found in several African countries. Ebola was first discovered in 1976 near the Ebola River in what is now the Democratic Republic of the Congo. Since then, outbreaks have appeared sporadically in Africa.

The natural reservoir host of Ebola virus remains unknown. However, on the basis of evidence and the nature of similar viruses, researchers believe that the virus is animal-borne and that bats are the most likely reservoir. Four of the five virus strains occur in an animal host native to Africa.

- *Can the virus be passed through intact skin?* From CDC:

The risk of EVD transmission from direct skin contact with an EVD patient is lower than the risk from exposure to blood or body fluids and may be more likely in severe illness (when the Ebola virus RNA levels are highest). It is not

known if transmission from direct skin contact is mediated by Ebola virus primarily on the skin where it has been documented by histopathology and RT-PCR of a skin swab or by micro-contamination of the skin with blood or other body fluids. Indirect exposure to blood and body fluids (via fomites) has also been implicated in EVD transmission but is not common. In the 2000 – 2001 Ebola outbreak in Gulu, Uganda, one EVD patient had no direct exposure to another known EVD patient; this patient slept with a blanket that had been used by another patient who died of EVD. Another study evaluated 31 environmental specimens from an Ebola isolation ward that were not visibly bloody. By RT-PCR, all specimens were negative suggesting that fomites in a clinical setting (where cleaning and decontamination would be frequent) are unlikely to be capable of EVD transmission.

- *Are there other vectors besides humans? Yes. See CDC's [Ebola virus Ecology graphic](#).*

- *Are septic systems able to handle virus? [From CDC](#):*

Sanitary sewers may be used for the safe disposal of patient waste. Additionally, sewage handling processes (e.g., anaerobic digestion, composting, and disinfection) in the United States are designed to inactivate infectious agents.

- *Is there a vaccine against Ebola or an effective treatment? [From CDC](#):*

No Federal Drug Administration-approved vaccine or medicine (e.g., antiviral drug) is available for Ebola. Symptoms of Ebola are treated as they appear. The following basic interventions, when used early, can significantly improve the chances of survival:

- Providing intravenous fluids and balancing electrolytes (body salts)
- Maintaining oxygen status and blood pressure
- Treating other infections if they occur

Experimental vaccines and treatments for Ebola are under development, but they have not yet been fully tested for safety or effectiveness.

Recovery from Ebola depends on good supportive care and the patient's immune response. People who recover from Ebola infection develop antibodies that last for at least 10 years, possibly longer. It isn't known if people who recover are immune for life or if they can become infected with a different species of Ebola. Some people who have recovered from Ebola have developed long-term complications, such as joint and vision problems.

## **Transmission**

- *What is the significance of the three-foot distance rule?* This rule is from CDC. It has also been used as a general infection prevention practice when dealing with any infectious disease such as Influenza or those caused by multidrug resistant organisms, or to help prevent the spread or transmission of disease.
- *If someone enters an emergency department full of people waiting to be seen and he or she is quite ill and vomiting, how should that situation be handled? If that person is sick from Ebola, does that mean that everyone in the room might have been exposed?* The LHD/DSHS should be called to assist in risk assessment.
- *How is the virus transmitted through animals? Is it transmitted to animals via mosquitoes?* From CDC: “There is no evidence that mosquitos or other insects can transmit Ebola virus. Only mammals (for example, humans, bats, monkeys, and apes) have shown the ability to become infected with and spread Ebola virus.”

### **Isolation**

- *If an Ebola patient is near family at home, he or she is potentially infecting those family members. Should the patient stay isolated in the hospital for 21 days?* The LHD/DSHS will provide recommendations for those exposed to Ebola. Further note: Ebola is not spread/ transmitted until someone shows signs or symptoms.
- *If an Ebola patient presents in our clinic but the office is sectioned off, presumably the other patients would not necessarily have been exposed to that case. Would it be OK to discharge the others from the office or does everyone in the building need to be cleared?* Contact the LHD/DSHS for risk assessment assistance.
- *I've heard a hospital was locked down while testing a patient to determine whether he or she had Ebola. Is that a CDC directive to completely lock down an entire hospital?* Contact the LHD/DSHS for risk assessment assistance.
- *Working in the operating room, what kind of room should we be using if we are working with patients who have Ebola? Should it be a room with negative pressure, and what kind of masks should we be using? Should we use the TB mask? Would that be sufficient protection for our staff?* Contact the LHD/DSHS for risk assessment assistance. In addition:
  - Given the new guidelines, elective or other procedures that are not absolutely necessary should be avoided with an Ebola patient.
  - If surgery must be done, e.g. intubation or tracheotomy, the use of an N95 mask or possibly a PAPR is recommended. A negative pressure room would be a good recommendation also.

### **Dallas- and Texas-specific questions**

- *Nurses became ill with Ebola. Are the patients those nurses treated being monitored?* All suspected contacts have been determined, assessed for exposure,

and informed of their status. They are monitored by the LDH and/or CDC if it is determined they are a contact or possible contact.

- *One of the nurses who contracted Ebola had a pet dog. Will her dog be released into the general population?* The dog will be evaluated and tested before that decision can be made.
- *What precautions are U.S. airports taking to prevent transmission of Ebola from West Africa?* CDC has implemented screening at five airports where most of the travelers from West Africa arrive.
- *What guidance exists for monitoring emergency medical services (EMS) personnel and other first responders? What about after they have assisted and contained a suspected Ebola patient?* Contact the LHD/DSHS for risk assessment assistance.
- *I heard today that none of the hospitals in El Paso have the facilities to test for Ebola, and samples must be sent to Austin. How are testing cities selected, and might more Texas cities also have adequate Ebola-testing facilities?* CDC selected the labs for Ebola testing.
- *I work in a nursing home. Many of our residents' families frequently travel overseas or have loved ones serving in the military in an Ebola-stricken part of the world. Do these people pose a risk, or have we had other cases here?* Texas has only had three cases, and they are no longer a threat to Texans. Also note that regarding travel outside of the United States, only three affected countries pose a concern: Guinea, Sierra Leone, and Liberia.
- *What are the guidelines for funeral homes and mortuaries?* CDC has guidance for mortuaries on its website.
- *How do I learn where to refer an at-risk patient after hours?* Contact your LHD for its after-hours contact information. Also refer to the DSHS website for all Texas counties' daytime and after-hours numbers.

## **Waste**

- *What is the guideline for proper handling of medical waste in this situation? I imagine double bagging per CDC guidelines, but are there other more specific recommendations?* CDC has recommendations on its website. The Pipeline and Hazardous Materials Safety Administration, under the U.S. Department of Transportation, published a safety advisory for transporting infectious substances. Additional information would come from the Texas Commission on Environmental Quality. Contact your regional office.
- *If a patient presents and has answered "yes" to the screening questions; experiences fever, vomiting, and diarrhea; and has soiled linens, is there a protocol to safely isolate the soiled linens? How will soiled linens be transported to The*

*University of Texas Medical Branch and destroyed? CDC provides information regarding waste management.*

- *How should one transport the waste materials from the patient, where are they incinerated, and what about sterilizing the equipment used for the patient? CDC has information about managing medical waste.*
- *Other Texas cities (besides Dallas, where our known cases occurred) described good decontamination processes used to clean ambulances. Is this just precautionary? How many cases are confirmed in Texas? Also, as home health nurses, what are we to do when we come in contact with someone who is symptomatic and has screened positive for exposure to the Ebola virus. Texas has only had three cases, and they are no longer a threat to Texans. Contact the LHD/ DSHS for additional guidance. Also refer to Emory Healthcare for information about ambulance decontamination.*

### **Screening/Diagnosis/Treatment**

- *May we post a sign for patients to see before they enter asking whether they have traveled to an affected area — and if so and they are having symptoms, to go to the emergency department? That would be a facility decision.*
- *Should we be watching for any other symptoms? See the CDC website for screening signs/symptoms.*
- *Are there recommendations for working with behavioral patients who cannot or will not give an accurate history? If you are in doubt about the reliability of history given or the historian providing the history, contact your LHD and report the case. This will allow for a public health consultation and discussion on the appropriate next steps.*
- *What recommendations exist for children whose school is closed and who have been sent home because of possible contact? Should the children be kept away from family members and friends? Also, how many health care workers are assigned to take care of one patient positive with Ebola? The first step would be to call your LHD to report such a case. Much of what is discussed above will be handled on a case-by-case basis, and reporting to the LHD will initiate such discussion. The number of health care workers assigned to a confirmed Ebola case depends on many factors; the initial reporting of a suspected case and obtaining approval for testing by DSHS will initiate the appropriate interventions.*
- *How do you recommend we handle cases of pregnant women suspected of having Ebola? What guides exist for her care and that of the fetus/unborn child? Report suspected Ebola cases to your LHD. Unique and/or complicated situations often require accessing expertise of DSHS and/or CDC. The reporting pathway that begins with the LHD.*

- What is the survival rate of children who are exposed? Refer to “[Biomarker Correlates of Survival in Pediatric Patients with Ebola Virus Disease](#),” *Emerging Infectious Diseases*, October 2014

### **Air travel/Travel**

- *What travel limits exist for people coming from West Africa to the United States?* CDC published [travel screening guidelines](#) in an Oct. 8, 2014, news release, below. See also: [Joint Airport Screening Fact Sheet](#).

### **Enhanced Ebola Screening to Start at Five U.S. Airports and New Tracking Program for all People Entering U.S. from Ebola-affected Countries**

#### *New layers of screening at airports that receive more than 94% of West African Travelers*

The Centers for Disease Control and Prevention (CDC) and the Department of Homeland Security's Customs & Border Protection (CBP) this week will begin new layers of entry screening at five U.S. airports that receive over 94 percent of travelers from the Ebola-affected nations of Guinea, Liberia, and Sierra Leone.

New York's JFK International Airport will begin the new screening on Saturday. In the 12 months ending July 2014, JFK received nearly half of travelers from the three West African nations. The enhanced entry screening at Washington-Dulles, Newark, Chicago-O'Hare, and Atlanta international airports will be implemented next week.

“We work to continuously increase the safety of Americans,” said CDC Director Tom Frieden, M.D., M.P.H. “We believe these new measures will further protect the health of Americans, understanding that nothing we can do will get us to absolute zero risk until we end the Ebola epidemic in West Africa.”

“CBP personnel will continue to observe all travelers entering the United States for general overt signs of illnesses at all U.S. ports of entry and these expanded screening measures will provide an additional layer of protection to help ensure the risk of Ebola in the United States is minimized,” said Secretary of Homeland Security Jeh Johnson. “CBP, working closely with CDC, will continue to assess the risk of the spread of Ebola into the United States, and take additional measures, as necessary, to protect the American people.”

CDC is sending additional staff to each of the five airports. After passport review:

- Travelers from Guinea, Liberia, and Sierra Leone will be escorted by CBP to an area of the airport set aside for screening.
- Trained CBP staff will observe them for signs of illness, ask them a series of health and exposure questions and provide health information for Ebola and reminders to monitor themselves for symptoms. Trained medical staff will take their temperature with a non-contact thermometer.
- If the travelers have fever, symptoms or the health questionnaire reveals possible Ebola exposure, they will be evaluated by a CDC quarantine station public health officer. The public health officer will again take a temperature reading and make a public health assessment. Travelers, who after this assessment, are determined to require further evaluation or monitoring will be referred to the appropriate public health authority.
- Travelers from these countries who have neither symptoms/fever nor a known history of exposure will receive health information for self-monitoring.

Entry screening is part of a layered process that includes exit screening and standard public health practices such as patient isolation and contact tracing in countries with Ebola outbreaks. Successful containment of the recent Ebola outbreak in Nigeria demonstrates the effectiveness of this approach.

These measures complement the exit screening protocols that have already been implemented in the affected West African countries, and CDC experts have worked closely with local authorities to implement these measures. Since the beginning of August, CDC has been working with airlines, airports, ministries of health, and other partners to provide technical assistance for the development of exit screening and travel restrictions in countries affected by Ebola. This includes:

- Assessing the capacity to conduct exit screening at international airports;
- Assisting countries with procuring supplies needed to conduct exit screening;
- Supporting with development of exit screening protocols;
- Developing tools such as posters, screening forms, and job-aids; and
- Training staff on exit screening protocols and appropriate personal protective equipment (PPE)

Today, all outbound passengers are screened for Ebola symptoms in the affected countries. Such primary exit screening involves travelers responding

to a travel health questionnaire, being visually assessed for potential illness, and having their body temperature measured. In the last two months since exit screening began in the three countries, of 36,000 people screened, 77 people were denied boarding a flight because of the health screening process. None of the 77 passengers were diagnosed with Ebola and many were diagnosed as ill with malaria, a disease common in West Africa, transmitted by mosquitoes and not contagious from one person to another.

Exit screening at airports in countries affected by Ebola remains the principal means of keeping travelers from spreading Ebola to other nations. All three of these nations have asked for, and continue to receive, CDC assistance in strengthening exit screening.

- *What precautions are in place for people who are traveling back from Nigeria specifically?* The World Health Organization has declared Nigeria's outbreak over, as of Monday, Oct. 20, 2014.
- *What limits exist for nurses or nursing students to return to work and school after having traveled abroad to an area with many Ebola cases?* Call your LHD/DSHS for advice and review advice, information, and updates on the following sites regarding traveling and living abroad:
  - CDC: [www.cdc.gov/vhf/abroad/working-living-abroad.html](http://www.cdc.gov/vhf/abroad/working-living-abroad.html)
  - CDC: <http://wwwnc.cdc.gov/travel/yellowbook/2014/chapter-3-infectious-diseases-related-to-travel/viral-hemorrhagic-fevers>
  - CDC: <http://wwwnc.cdc.gov/travel/notices>
  - U.S. State Department: <http://travel.state.gov/content/passports/english/alertswarnings.html>