Ebola Preparedness and Ebola Virus Disease

New Mexico Department of Health

October 24, 2014
Ebola Virus Disease

• Incubation period 2-21 days, most typically 8-10 days
• The likely host is the fruit bat in Africa
• Early symptoms include:
  • Fever
  • Headache
  • Diarrhea
  • Vomiting
  • Stomach pain
  • Unexplained bleeding/bruising
  • Muscle pain
Pandemic Influenza vs Ebola

• Airborne vs Direct Contact Transmission
• Novel virus vs virus known since 1976
• Pandemic vs localized epidemic
• Antiviral treatment vs no antiviral treatment
• Eventual vaccine vs no vaccine at this time
• Contact tracing not useful vs useful
Disease Process

• The virus enters the patient through mucous membranes, breaks in the skin or by needle stick
• The virus migrates to lymph nodes, the liver, spleen, and adrenal gland
• Liver necrosis occurs resulting in impairment of clotting factors
• Adrenal gland necrosis can occur resulting in hypotension
• The virus triggers cytokines which cause blood vessel leakage and further impairment of clotting
• This leads to multi-organ failure and shock
Disease Transmission

• Transmitted via direct contact with:
  • Body fluids of a person sick with or who has died from Ebola
  • Objects contaminated with the virus
  • Infected animals – contact with blood or fluids or infected bushmeat

• Ebola is not transmitted through the airborne route
  • It is not transmitted by water or food (except for bushmeat)

• Ebola can only be transmitted when a person is symptomatic

• Patients are most infectious toward the end of the disease course and at death
Ebola in Africa

• First Ebola outbreak in West Africa and first involving large cities
• Transmission currently in Liberia, Guinea and Sierra Leone
• Transmission was interrupted in Senegal (1 case) and Nigeria (20 cases)
  • The Nigeria control effort was particularly impressive
• There have been approximately 9000 cases and 4500 deaths this year
• The epidemic in West Africa has not peaked
Ebola in Dallas

- 3 cases
- First patient was a Liberian national who was hospitalized September 28 but had an emergency department (ED) visit on September 25
- 2 additional patients – ICU nurses at the hospital who provided care to the first case in the intensive care unit
- No community contacts, including household members, or health care workers from first ED visit of the first case developed illness
Ebola Risk In New Mexico

- Risk is from persons who have travelled from Liberia, Guinea, or Sierra Leone in the past 21 days
  - Nationals from these countries
  - U.S. citizens working in these countries
- NM DOH has investigated two patients with symptoms and a positive travel history since April; many others have had a negative travel history
  - New York City investigated 11 patients with symptoms and a positive travel history in August and September
  - None of the NM or NYC patients evaluated had any specific risk exposures
- Current risk of importation into NM is very, very low
Ebola Preparedness
Ebola Preparedness Plan

- Directed by Governor Martinez
- Will be posted on the DOH website the week of October 27
- Will be revised as needed as the international and national response to Ebola progresses
Evaluation and Early Recognition

• DOH epidemiologists are notified 24/7/365 about a suspect Ebola case – the phone number is (505) 827-0006
• Travel history is key – travel from Liberia, Guinea, or Sierra Leone in the past 21 days
• Travel history + symptoms leads to further evaluation
• Isolate patient in a single room with a bathroom
• Implement standard, contact and droplet precautions (gown, face mask, eye protection, gloves)
• NM DOH consults with CDC regarding testing and diagnosis
Lab Testing

• Currently sent to CDC or Texas state lab
• In 2 weeks NM DOH Scientific Laboratory Division will be able to run the test
• The test is a polymerase chain reaction (PCR) test and requires one tube of blood
Ebola Case

• During lab testing a decision will be made about where the patient will be hospitalized if the test is positive
  • DOH will facilitate
  • Out of state to a special containment unit – Emory University, University of Nebraska, National Institutes of Health (NIH)
  • Large NM hospital

• Will consider earlier transfer before lab confirmation if high risk exposure
  • Direct skin contact with fluids of Ebola patient
  • Needle stick or mucous membrane exposure
  • Lab testing specimens from Ebola patient without personal protective equipment
  • Direct contact with dead body of Ebola patient
Contact tracing

• High risk exposure
  • Active twice daily monitoring of temperature and symptoms for 21 days following last contact

• Low risk contact
  • No high risk exposures
  • Direct brief contact with Ebola patient such as shaking hands
  • Prolonged close contact within 3 ft of Ebola patient
  • Household contact without high risk exposure
  • Twice daily monitoring of patient temperature and symptoms for 21 days

• These contacts will voluntarily stay at home. Non-compliance = court order

• Social support will be needed

• A team from PHD and ERD is trained to handle this contact tracing
New Personal Protective Equipment (PPE) Guidance for Confirmed Ebola Patient

• No skin exposure (coveralls, full face shield, double gloves, boot covers, respirator, surgical hoods)
• All workers supervised by a trained monitor
• Designated areas for putting on and taking off PPE
• Step-by-step PPE removal instructions
• Disinfection of gloved hands by disinfectant wipes or alcohol hand rub
• Hospitals are recommended to have at least weekly training until competent then at least monthly
Hospital Care

• Single room with bathroom
  • Airborne infection isolation room is ideal
• All visitors and staff logged
• Dedicated medical equipment for that one patient
• Limit use of needles and blood draws
• Avoid aerosol generating procedures if possible
• Exclude visitors
NM Hospital Preparedness

• Hospitals have reviewed and are implementing the CDC hospital checklist
• DOH has an Ebola Healthcare Team which is consulting with hospitals, clinics, EMS services on how to implement the guidelines
• DOH has completed several reviews with hospitals following suspect Ebola evaluations
• DOH is recommending at least weekly training on the new CDC hospital PPE guidance until competent then at least monthly
Command and Coordination

• DHSEM will activate State Emergency Operations Center
• Activate NMDOH Department Operations Center
• Activate local Incident Command Post
• Activate Joint Information Center
EMS

• Travel history obtained by dispatch
• If positive travel history, hospital and DOH notified
  • PPE used
• Decontaminate ambulance if patient confirmed
Active Traveler Monitoring

• Effective October 17, DOH provided contact info on any person coming to NM traveling from Liberia, Guinea, or Sierra Leone
  • As of October 22 all these persons are coming through 5 airports with this screening
    • Chicago, Atlanta, Washington Dulles, Newark, NYC Kennedy
  • NM DOH is completing active daily monitoring of these persons for temperature and symptoms for 21 days from departure

• 70% of these travelers are from 6 states – New York, Pennsylvania, Maryland, Virginia, New Jersey, and Georgia
Hospital Waste Management

• 95% of NM hospitals have contracts with Stericycle
• Stericycle obtained DOT permit for TX and disposed of Dallas waste
• If case, Stericycle gets DOT permit for NM and for specific hospital location
• Stericycle has provided Ebola waste packaging guidelines to hospitals
• Remaining hospitals work with one other company
• NMED permits and inspects both companies
Home-based Cleaning

• NM DOH is negotiating with a home-based cleaning company to clean the house/apartment of a case
Current Legal Authority

• Quarantine or isolation can be voluntary or court-ordered, and can occur in a variety of settings, including the home of the exposed or infected individual.

• Section 24-1-15 NMSA gives DOH the authority to separate an individual from others when he or she has or is likely to have, and is likely to transmit, a threatening communicable disease.

• The court order would remain in place until the person is no longer a public health threat.
Conclusions

• NM has experienced a number of public health crises and learned from these
• The risk of a case of Ebola in New Mexico is very, very low
• New Mexico is prepared to deal with the remote possibility of Ebola