

Public Health Crises, Preparedness and Ebola Virus Disease

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NM Public Health Crises and Threats

- Obesity and Chronic Disease
- Substance Abuse and Injury
- Not thought of typically as threats but cause more damage than infectious diseases in NM

Other Non-Infectious Disease Public Health Threats

- Natural Disasters
 - Wildfire
 - Winter storm
 - Tornado
 - Floods
- Conventional Terrorism
- Chemical Event
- Radiologic Event

Some Infectious Disease Threats

- AIDS (1980s)
- Hantavirus (1993)
- Meningococcal Meningitis (1995)
- Weaponized Anthrax (2001)
- Pandemic Influenza (2009)
- Ebola Virus Disease (2014)

Pandemic Influenza vs Ebola

- Airborne vs Direct Contact Transmission
- Novel virus vs virus known since 1976
- Pandemic vs localized epidemic
- Antivirals treatment vs no antiviral treatment
- Eventual vaccine vs no vaccine at this time
- Contact tracing not useful vs useful
- Less exotic name vs more exotic name

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

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 bush meat
- Ebola is not transmitted through the airborne route
- 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 hx
 - New York City has 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

Public Health Preparedness

Department of Homeland Security and Emergency Management

- DHSEM coordinates the state's response to all emergencies and directly supports local emergency management when needed
- This coordination occurs via the Emergency Operations Center (EOC)
- NM DOH has a EOC Representative who connects NM DOH resources and support to the EOC

Public Health Surveillance and Outbreak Response

- NM DOH investigates over 10,000 cases of communicable and other notifiable diseases each year
- There are infectious disease epidemiologists in each region
- NM DOH was one of 10 states chosen for Emerging Infections Program funding
- NM DOH has epidemiologists on call 24/7/365
- NM DOH consults with CDC as needed on outbreak investigations
- NM DOH is a centralized health department in a state with a small population which allows for very timely investigations and interventions

Scientific Laboratory Division (SLD)

- SLD is New Mexico's Laboratory Response Network (LRN) lab
 - CDC provides these labs with reagents to test for emerging infections
- SLD is capable of detecting most select agents that might be used in bioterrorist and chemical terrorism acts
- SLD has 7 BSL3 (high containment) lab rooms
- SLD staff is cross trained to allow for surge capacity
- SLD has an outreach program that communicates with other labs in NM

Strategic National Stockpile

- NM has recently received high grades of 95 out of 100 from CDC for both the state level and Albuquerque Metro area planning for use of medications and vaccines from the Strategic National Stockpile
- NM 134 open-to-the-public Points of Dispensing sites (PODs) planned with detailed site plans and formal agreements
- NM also has several closed PODs for military installations and federal agencies which takes pressure off the open-to-the-public PODs
- Trainings on POD operations occur on a quarterly basis

Health Alert Network and EpiX

- NM DOH has a secure, password-protected communication system to provide information to about 3,700 hospitals, clinics, health care providers, and local emergency managers
 - For example, NM DOH has sent 3 communications on enterovirus D68
- EpiX is CDC's secure, password protected communication system to provide information to state and local health departments
 - For example, NMDOH has been notified of NM measles contacts to a case on a flight

Volunteer Management

- The NM Medical Reserve Corps Serves has over 1200 volunteers registered throughout NM
- 287 volunteers have volunteered 3800 hours of service
 - 5 volunteers were deployed to assist with the September flooding
- There are six Junior Medical Reserve Corps that involve youth in this work

Healthcare Coalitions

- Four regional coalitions have been formed from a broad range of healthcare system partners to coordinate regional healthcare response to an emergency
- The Albuquerque Coalition has monthly meetings and is the most developed
- The coalitions participate in exercises

HavBed

- The HavBed system is an electronic system that allows for hospital bed availability reporting
- Specific classes of beds can be tracked including ventilator availability
- There are 900 users on the system including 30 emergency managers
- Weekly drills have 81% participation and HavBed received a 92% score on the FEMA annual national drill

Fatality Management

- The NM OMI is the lead agency for fatality management
- Coalitions have been trained on the plan
- 3 mobile morgue trailers in Albuquerque, Farmington and Las Cruces

Funding

- NM DOH receives approximately \$8.5 million in public health preparedness funding, all federal funds
- NM DOH is one of 10 states that receives about \$2 million in competitive federal funding for infectious disease surveillance
- NM DOH receives another \$900,000 of non-competitive federal funding for communicable disease surveillance
- NM DOH receives \$400,000 of state general fund for communicable disease surveillance, investigation and disease control

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 827-0006
- Travel history is key – travel from Liberia, Guinea, or Sierra Leone in the past 21 days
- Travel history + symptoms = 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 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 PPE
 - 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

New Personal Protective Equipment Guidance for Confirmed Ebola Patient

- Hospitals recommended to have at least weekly training until competent then at least monthly
- 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

Hospital Care

- Single room with bathroom
- 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 today, October 22, all these persons are coming through 5 airports with this screening
 - NM DOH is completing active daily monitoring of these persons for temperature and symptoms for 21 days from departure

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

Public Health Accreditation and Proposed Legislative Updates

- An analysis of NM's public health laws was conducted by James Hodge and colleagues at ASU Law's Public Health Law and Public Policy Program as a step toward compliance with public health accreditation standards
- One recommendation was to update section 24-1-15 NMSA to reflect modern public health practice
- Proposed legislative changes will support the DOH response to public health threats when no emergency has been declared

Suggested Changes will:

- Clarify the legal definitions of “quarantine” and “isolation” so that they are consistent with public health definitions
- Ensure consistency in procedure throughout the state by adding some specificity to the existing law
- Provide consistency with the Public Health Emergency Response Act
- Protect individual rights while ensuring that disease transmission is significantly reduced

Conclusions

- NM has experienced a number of public health crises and learned from these
- Pandemic influenza or another novel virus transmitted through the air is the greatest infectious disease threat to NM’s population
- 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