



### **Epidemiology Outbreaks 2014**

- **Notable outbreaks (continued)**
  - **Shigella - Numerous day care centers in Jefferson County**

### **Investigation at a Restaurant in Franklin County**

- **On Wednesday, June 11, 2014, a foodborne illness complaint was received by the local environmental office regarding a Franklin County restaurant**

### **Investigation at a Restaurant in Franklin County**

- **The complainant stated that several individuals had experienced symptoms of nausea and diarrhea after eating at the restaurant on June 4 or 5**

### **Investigation at a Restaurant in Franklin County**

- **An environmental inspection of the restaurant conducted on June 11 identified seven critical violations**
- **The restaurant was given a food establishment score of 53 as a result of findings from the inspection**

### **Investigation at a Restaurant in Franklin County**

- **This inspection score mandated the immediate closure of the restaurant on June 12**

### **Investigation at a Restaurant in Franklin County**

- **ADPH interviewed 56 individuals, 53 met the basic outbreak case definition**
- **Ages ranged from 4 to 68 years (with median age of 39 years)**
- **36 cases were female (67%)**

### **Investigation at a Restaurant in Franklin County**

- 30 stool specimens, 10 food samples, and 6 environmental swabs associated with the outbreak were tested for enteric pathogens by the BCL

### **Conclusion**

- *Salmonella enteritidis* was isolated from all 30 stool specimens and from one environmental swab of a left door handle from a cooler at the restaurant
- The PFGE patterns for the positive environmental swab and the stool specimens were a 100% match to each other

### **Investigation of a Copper Plant in Wilcox County**

- On September 24, 2014 local Field Surveillance Staff (FSS) identified a potential outbreak of legionellosis associated with a Wilcox County copper smelting plant during a routine investigation of a *Legionella* titer laboratory report

### **Investigation of a Copper Plant in Wilcox County**

- Multiple employees at the plant had reportedly been out of work sick with respiratory symptoms and diagnoses of pneumonia

### **What is Legionellosis?**

- Legionellosis is an environmentally acquired bacterial infection caused by *Legionella* species [4]

### **What is Legionellosis?**

- The disease has two types of clinical manifestations:
  - Legionnaires' disease, which causes mild to severe pneumonia, and
  - Pontiac fever, which is a febrile disease without pneumonia [4]

### **What is Legionellosis?**

- Disease transmission is caused by breathing in water mist or water vapors contaminated with *Legionella*
- The bacteria thrives in water systems, like those associated with hot tubs, cooling towers, hot water tanks, large plumbing systems, or parts of the air conditioning systems of large buildings

### **Investigation of a Copper Plant in Wilcox County**

- A confirmed case of Legionellosis was identified on September 25
- An outbreak investigation was initiated on September 25 to verify laboratory reports, identify other potential Legionellosis cases among plant employees, and conduct an environmental survey of the facility

### **Investigation of a Copper Plant in Wilcox County**

- Clinical specimens, in particular sputum, were collected by FSS and sent to the Bureau of Clinical Laboratories (BCL) for Legionellosis testing
- Ill individuals were asked to seek medical attention if symptoms persisted and to request a chest x-ray and Legionellosis testing

### **Investigation of a Copper Plant in Wilcox County**

- The State Toxicologist and county environmentalist conducted an environmental assessment of the copper plant's water system on September 26, 2014

### **Investigation of a Copper Plant in Wilcox County**

- Liter water samples and swabs were taken from environmental areas throughout the plant that could have supported the growth of *Legionella* species

### **Investigation of a Copper Plant in Wilcox County**

- Case finding efforts identified 36 employees ill with respiratory and / or GI symptoms
- 35 employees were interviewed
- Of the 35 employees interviewed, 17% were laboratory confirmed and met the outbreak case definition

### Investigation of a Copper Plant in Wilcox County

- 4 had positive urine antigen tests performed by commercial laboratories
- 1 had a positive sputum culture tested by the BCL
- 1 was diagnosed by sero - conversion tested at a commercial laboratory

### Conclusion

- Recommendations for the remediation of the identified *Legionella* in the cooling towers were made and the need to establish a *Legionella* control program at the plant to prevent further outbreaks

### Ebola

- This is the largest Ebola epidemic in history
- CDC's response to Ebola is the largest international outbreak response in CDC's history



Slide Credit: CDC

### EVD Cases United States

- EVD has been diagnosed in the United States in 4 people:
  - 1 (the index patient) who traveled to Dallas, Texas from Liberia
  - 2 healthcare workers who cared for the index patient, and
  - 1 medical aide worker who traveled to New York City from Guinea

Slide Credit: CDC

### Ebola Cases and Deaths

- As of February 21, 2015, a total of 23,539 cases of Ebola (14,134 laboratory-confirmed) and 9,541 deaths have been reported

<http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/case-counts.html>  
Accessed Feb 23, 2015

### EVD Cases United States

- Index patient
  - Symptoms developed on September 24, 2014 approximately 4 days after arrival
  - Patient sought medical care at Texas Health Presbyterian Hospital of Dallas on September 26, returned and was admitted to hospital on September 28
  - Testing confirmed EVD on September 30, and the patient died October 8

### **EVD Cases United States**

- **TX Healthcare Worker, Case 2**
  - Cared for index patient, was self - monitoring and presented to hospital reporting low - grade fever
  - Diagnosed with EVD on October 10
  - Recovered and was released from NIH Clinical Center on October 24

### **EVD Cases United States**

- **TX Healthcare Worker, Case 3**
  - Cared for index patient, was self - monitoring and reported low - grade fever
  - Diagnosed with EVD on October 15
  - Was released from Emory University Hospital in Atlanta October 28

### **EVD Cases United States**

- **NY Medical Aid Worker, Case 4**
  - Worked with Ebola patients in Guinea, was self - monitoring and reported fever
  - Diagnosed with EVD on October 24
  - Recovered and released from Bellevue Hospital in New York City November 11

### **EVD Cases United States**

- **During this outbreak, 5 health workers and 1 journalist have been infected with Ebola virus while in West Africa and transported to hospitals in the United States**
- **Five of these patients have recovered**

### **EVD Cases United States**

- **One of the health workers died on November 17 after being transported from Sierra Leone to Nebraska Medical Center**

### **Ebola Virus Transmission**

- **Virus present in high quantity in blood, body fluids, and excreta of symptomatic EVD - infected patients**
- **Opportunities for human - to - human transmission**
  - **Direct contact (through broken skin or unprotected mucous membranes) with an EVD-infected patient's blood or body fluids**

Slide Credit: CDC

### **Ebola Virus Transmission**

- Sharps injury (with EVD - contaminated needle or other sharp)
- Direct contact with the corpse of a person who died of EVD
- Indirect contact with an EVD - infected patient's blood or body fluids via a contaminated object (soiled linens or used utensils)

Slide Credit: CDC

### **Ebola Virus Transmission**

- Ebola can also be transmitted via contact with blood, fluids, or meat of an infected bush animal
  - Limited evidence that dogs become infected with Ebola virus
  - No reports of dogs or cats becoming sick with or transmitting Ebola

Slide Credit: CDC

### **Monitoring Individuals With EVD Exposure**

- CDC has created guidance for monitoring individuals returning from a country with widespread transmission or cases in urban areas with uncertain control measures
- Epidemiology, Surveillance Division, is actively monitoring these individuals coming to Alabama

### **Alabama Monitorees As of March 16, 2015**

- Cumulative Total = 44
- Completed 21 day monitoring or transferred to a new jurisdiction = 42
- Active Monitoring = 2
- Direct Active Monitoring = 0

### **References**

- <http://www.adph.org/epi>
- <http://www.cdc.gov/vhf/ebola/outbreaks/guinea/index.html>
- <http://www.cdc.gov/vhf/ebola/hcp/case-definition.html>
- <http://www.cdc.gov/vhf/ebola/>

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- <https://www.osha.gov/SLTC/bloodborne-pathogens/index.html>
- <http://phmsa.dot.gov/hazmat/transporting-infectious-substances>
- <http://www.adem.state.al.us/alEnviroRegLaws/files/Division17.pdf>
- <http://www.epa.gov/waste/nonhazardous/industrial/medical/programs.htm>