Outbreaks To Remember
West Virginia, 2011-2012

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Objectives

- Outbreaks in WV over last decade
- Outbreaks in 2011
- Outbreaks to remember:
  - Outbreak of novel influenza A (H3N2)v
  - Regional outbreak of Multidrug Resistant *Acinetobacter baumannii*
  - Situational update on the fungal meningitis outbreak
Confirmed Outbreaks or Clusters, West Virginia, 2001 - 2011 (n=592)
Confirmed Healthcare-Associated Outbreaks by Month of Report, West Virginia, 2009 - 2012 (n=268)
Confirmed Outbreaks Reported by Region, West Virginia, 2011 (n=169)
Healthcare-Associated Outbreaks by Reporting Region, West Virginia, 2011 (n=100)
Multi-Drug Resistant Organisms (MDROs) By Reporting Region, West Virginia, 2011 (n=13)
Outbreak of Novel Influenza A (H3N2)v
West Virginia, December, 2011
Background

- Novel influenza virus of animal origin
  - pandemic → efficiently transmitted “person-to-person”
  - Recent pandemic → 2009 novel H1N1

- Since 2005 → 1-2 cases/year of swine origin influenza

- Between Aug & Dec, 2011 → 12 cases swine origin influenza A (H3N2)v
  - The virus → has the matrix (M gene) from 2009 H1N1
  - The 12 Cases:
    - 5 states including WV
    - 11/12 were in children
    - 6/12 → identified recent exposure to swine
    - 3 hospitalizations and no deaths
Initial Outbreak Timeline

11/17/11: A child < 5YO hospitalized

11/19/11: Fever 102.2°F, cough, rhinorrhea

11/21/11: Nasal aspirate Recovered & Discharged

12/1/11: CDC Lab → A(H3N2)v
Child attends → Daycare X

12/2/11: CDC Consult & Field investigation

12/5/11: WVOLS → influenza AH1 & AH3 → CDC lab

Rapid test negative PCR → Influenza A
Investigation Objectives

- Determine the extent of the outbreak
- Identify new cases
- Identify the source of infection
- Prevent further spread
Methods: Case Definition

- **Clinical criteria:**
  - Less than 5YO: fever, sore throat, cough, runny or stuffy nose or shortness of breath with onset dates between Nov. 9 & Dec. 24, 2011
  - More than 5YO: fever of ≥ 100 °F, and cough and/or sore throat with same onset dates

- **Laboratory criteria:** positive for influenza A(H3N2)v

- **Confirmed case** → clinical & lab criteria

- **Probable case** → clinical criteria.
Methods (Case Finding Activities)

- **Active surveillance at the daycare**
  - **Retrospective surveillance:** phone interviews with parents and staff using a standardized questionnaire
  - **Prospective surveillance:**
    - Daily screening of attendees and absentees for respiratory symptoms using a standardized form
    - Phone interviews and referral for testing, if indicated
Methods (Case Finding Activities)

- **Community-based surveillance**
  - Active surveillance was initiated in other daycares
  - Direct outreach to local emergency department
  - Recruited two additional sentinel providers
  - A regional health advisory on Dec. 9, 2011
  - A statewide health advisory on Dec. 23, 2011
  - Notified neighboring states
Methods (Laboratory)

- NP swabs were collected at
  - Local hospital laboratory
  - Local ED
  - Sentinel providers

- Specimens → WVOLS for RT-PCR testing
- Positive & negative specimens → CDC lab
- CDC lab tested for influenza & non-influenza respiratory viruses (NIVs)
Results (Daycare Surveillance)

- Daycare X at the time of investigation
  - 68 attendees (2-12 YO) and 14 staff members
  - 5 days a week
  - Young children attended during the day
  - Older children attended before and after school

- A 2\textsuperscript{nd} confirmed case was identified
  - Onset date → Nov. 29, 2011
  - Specimen was collected Dec. 7, 2011
  - Received by CDC Dec. 14 & reported on Dec. 16
### Results (Daycare Surveillance)

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Interviewed</th>
<th>Cases</th>
<th>Confirmed</th>
<th>Probable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attendees</td>
<td>68</td>
<td>52/68 (76%)</td>
<td>26/52 (50%)</td>
<td>2/26 (8%)</td>
<td>24/26 (92%)</td>
</tr>
<tr>
<td>Staff</td>
<td>14</td>
<td>14 (100%)</td>
<td>0 (0)</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

- Among ill children (n=26)
  - 11 of 26 (42%) were female
  - Age range was 2 to 8 years with a mean (median) 4 (3)
  - Dates of onset range between Nov. 15 & 30
  - Days between cases ranged 0 to 5 days mean (median): 2(1) days.
  - Only 16/26 (62%) met the standard ILI case definition
- Reported temperature (n= 19)
  - Mean (median) 102 (101) °F
- Duration of illness (n= 12)
  - Mean (Median) 8 (6) days
## Results (Daycare Surveillance)

Symptoms of ill children of daycare X, West Virginia, 2011 (n=26)

<table>
<thead>
<tr>
<th>Symptoms**</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever*</td>
<td>20</td>
<td>77</td>
</tr>
<tr>
<td>Cough</td>
<td>20</td>
<td>77</td>
</tr>
<tr>
<td>Sore throat</td>
<td>7</td>
<td>27</td>
</tr>
<tr>
<td>Runny nose/congestion</td>
<td>8</td>
<td>31</td>
</tr>
</tbody>
</table>

*Fever was self-reported  
**Could report more than one symptom
Confirmed and Probable Cases of Upper Respiratory Illness in Daycare X, WV November 9 and December 24, 2011 (N=26)

- **Ill attendees**
- **Positive H3N2v**

Dates of Illness Onset

Number of Ill Daycare Attendees
Results (Community Surveillance)

- 25 patients identified in the community unrelated to Daycare X → Lab specimens
- Due to limited resources, minimal data was collected on these individuals
- Age ranged from 0 to 80 years with a mean (median) 23 (12) years
Results (Laboratory)

Dec 7 - 25 ➔ 38 specimens ➔ OLS & CDC
11 specimens from daycare attendees:
  ◦ 2 (18%) were positive for influenza A (H3N2)v
  ◦ 9 (82%) were negative for both influenza A & B
  ◦ 6 were tested for NIVs
    • 2 ➔ negative
    • 4 ➔ positive for 1 or more viruses
      • 3 ➔ adenovirus
      • 2 ➔ rhinovirus
      • 1 ➔ parainfluenza type 4
Results (Laboratory)

- 2 daycare-related specimens (staff & family member) → negative

- 25 specimens collected from the community
  - 25 (100%) → negative for both influenza A and B
  - 13/25 (52%) → positive results for one or more NIV
Results (Laboratory)

Results of NIVs testing from community members unrelated to Daycare X, N=25

<table>
<thead>
<tr>
<th>Positive for non-influenza viruses (n=25)</th>
<th>Number of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenovirus (AdV)*</td>
<td>2</td>
</tr>
<tr>
<td>Parainfluenza virus (PIV 1)*</td>
<td>4</td>
</tr>
<tr>
<td>Respiratory syncytial virus (RSV)</td>
<td>3</td>
</tr>
<tr>
<td>Parainfluenza virus (PIV 4)*</td>
<td>3</td>
</tr>
<tr>
<td>Human bocavirus (HBov)</td>
<td>1</td>
</tr>
<tr>
<td>Rhinovirus (RV)*</td>
<td>0</td>
</tr>
<tr>
<td>Human coronavirus 229E</td>
<td>1</td>
</tr>
<tr>
<td>Negative</td>
<td>12</td>
</tr>
</tbody>
</table>

*positive for more than one virus in specimen
Conclusion

- Nov. 9 & Dec. 25, 2011 → 26 cases of upper respiratory illness (URI) among daycare X attendees
- Attack rate of 50%.
- Mild illness → no hospitalizations or deaths
- Only 2 were positive for A (H3N2)v
- 10 days between the onset dates of two confirmed cases → 2 to 5 generations of transmission
- No contact with swine or farm animals → person-to-person transmission in the daycare
Conclusion

- No ill staff & low secondary attack rate (6%) among households → highly inefficient transmission → consistent with other states

- No cases of influenza A (H3N2)v were identified among persons in the community unassociated with the daycare.

- Not all URI can be attributed to influenza A (H3N2)v → high prevalence of NIVs

- Sensitive case definition → inefficient & strain already limited resources

- Timely results of laboratory testing → resources use & allocation
Limitations

- This outbreak was investigated in retrospect:
  - Index case was recognized 13 days after onset
  - The second confirmed case was tested 8 days after onset
  - 21 cases occurred before field investigation started

- Delay in testing → samples collected 0-21 days after onset with a mean (median) of 8 (5) days → underestimate influenza infection in this population

- Incomplete response rate and recall bias

- Occasionally, missing data → underestimation of the prevalence of signs and symptoms among ills
Identifying novel influenza is a crucial surveillance function:
- Typing early season and outbreak isolates is critical
- Sentinel providers and hospital lab can play an active role

Routine training on outbreak investigation, active surveillance and structured patients interview

Active surveillance should be structured and focused

Prioritization of activities is critical when resources are limited

Lab testing is crucial in outbreak investigation (respiratory)
- Federal Express account for shipping during critical investigations
- PCR Multiplex for NIVs
# Influenza A (H3N2)v in 2012

<table>
<thead>
<tr>
<th>States Reporting H3N2v Cases</th>
<th>Cases in 2011</th>
<th>Cases in 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hawaii</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Illinois</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Indiana</td>
<td>2</td>
<td>138</td>
</tr>
<tr>
<td>Iowa</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Maine</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Maryland</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Michigan</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Minnesota</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Ohio</td>
<td></td>
<td>107</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Utah</td>
<td></td>
<td>1*</td>
</tr>
<tr>
<td>West Virginia</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Wisconsin</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>12</td>
<td>307</td>
</tr>
</tbody>
</table>
Regional Outbreak of Multidrug Resistant
*Acinetobacter baumannii*,
West Virginia, 2012
**Acinetobacter baumannii (Ab)**

- Non-motile gram negative bacteria
- Widely distributed in nature (soil, water, food, sewage)
- Nosocomial pathogen with a propensity to develop antimicrobial resistance
- Mechanical ventilation and chronic wounds
- Long survival time on inanimate surfaces.
- Causes extensive environmental contamination
- Most common gram negative bacteria carried by skin of HCP
- MDR-Ab outbreaks → mortality rates 75%
The Outbreak

- Summer 2012, DIDE, LHDs, Regional Epidemiologist (RE), IPs from acute care and LTCFs → ongoing regional meeting → CRE outbreak (Carbapenem-resistant Enterobacteriaceae)

- Concerns about increasing number of patients with multidrug-resistant Acinetobacter (MDR-Ab)

- Outbreak investigation started → acute care facilities, outpatient clinic and LTCFs
The Investigation

- Consultation with CDC
- DIDE & RE → initiated investigation
  - Focus on two acute care facilities and one outpatient clinic
- Objectives:
  - Determine the extent of the outbreak
  - Identify additional cases of MDR-Ab
  - Identify possible sources of the outbreak
  - Characterize risk factors for transmission
  - Provide recommendations to prevent further spread
Methods: Case Definition

- A patient admitted to hospital A or B with a first positive culture for MDR-Ab between January and August, 2012
- MDR-Ab is defined as Ab that is resistant to three or more of the following five antimicrobial classes:
  - Antipseudomonal cephalosporins (ceftazidime or cefepime)
  - Carbapenems (imipenem or meropenem),
  - Ampicillin/sulbactam,
  - Fluoroquinolones (ciprofloxacin or levofloxacin),
  - Aminoglycosides (Gentamicin, amikacin).
Methods: Epidemiologic

- Demographic, clinical and risk factors
- Data entered and analyzed in Microsoft Excel
- Descriptive analysis to evaluate
  - Patient demographics
  - Reasons for admission to Hospital A & B
  - Time between admission and culture collection
  - Admitting source
  - Common risk factors
- A state-wide health advisory
Methods: laboratory

- Retrospective review of the incidence of MDR-Ab in hospital A & B
  - Hospital A & B Lab
  - Commercial Lab
  - Out-of-state Lab
- Clinical isolates from both hospitals → CDC laboratory for molecular typing
- Environmental cultures → CDC
Methods: Site Visits

Site visits to Hospitals A & B

- Staff interviews (medical, admin, IPs, respiratory therapists, head nurses, wound care, specialty units, environmental)
- Policies and procedures
- Observational studies
  - Wound care practices
  - Respiratory therapy practices
  - Environmental cleaning
Methods: Site Visits

- Site visits to Hospitals A & B
  - A walk-through the facilities to evaluate
    - Hand hygiene
    - Isolation supplies
    - Equipment used in patient’s care (medication, vital signs, and respiratory carts)

- Environmental cultures
Methods: Site Visits

- Site visit to Clinic A
  - Interviewed staff
  - Policies and procedures
  - Walk-through the clinic
  - Observation
    - Patient flow
    - Wound care practices
    - Environmental cleaning
    - Special radiologic procedure room
  - Environmental cultures: 11 specimens → CDC lab
## Results: Epidemiology

<table>
<thead>
<tr>
<th>Total case-patients</th>
<th>Hospital A</th>
<th>Hospital B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total patients identified*</td>
<td>28</td>
<td>18</td>
</tr>
<tr>
<td>- Previously know positive</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>- Not admitted</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Total patients met case definition</td>
<td>21</td>
<td>10</td>
</tr>
</tbody>
</table>

*At least over 25% of the total patients identified in Hospital A & B were seen in Clinic A and 75% have chronic wounds*
Cases of MDR-*Acinetobacter baumannii* from Hospital A, WV, January-August, 2012 (n=21)
Cases of MDR- *Acinetobacter baumannii* Hospital B, WV
January- August 2012 (n=10)
## Results: Epidemiology

Demographics: Case-Patients Hospitals A and B

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Hospital A (n=21)</th>
<th>Hospital B (n=10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age mean (median)</td>
<td>65.8 (61)</td>
<td>67.7(76)</td>
</tr>
<tr>
<td>Gender:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>9 (43%)</td>
<td>4(40%)</td>
</tr>
<tr>
<td>Female</td>
<td>12 (57%)</td>
<td>6(60%)</td>
</tr>
</tbody>
</table>
### Potential Risk Factors for Infection with MDR-Ab, among Case-Patients Hospital A & B

<table>
<thead>
<tr>
<th>Variable</th>
<th>Hospital A (n=21)</th>
<th>Hospital B (n=10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admitting source</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Home</td>
<td>10 (48%)</td>
<td>4 (40%)</td>
</tr>
<tr>
<td>▪ LTCFs</td>
<td>11 (52%)</td>
<td>5 (50%)</td>
</tr>
<tr>
<td>▪ Other</td>
<td>0 (0)</td>
<td>1 (10%)</td>
</tr>
<tr>
<td>Mean (median) length of stay at hospital A or B before positive culture collection</td>
<td>4.8 (1)</td>
<td>3.1 (0.5)</td>
</tr>
<tr>
<td>Admission to Hospital A during the 3 months prior to positive culture</td>
<td>17 (81%)</td>
<td>2 (20%)</td>
</tr>
<tr>
<td>Admission to Hospital B during the 3 months prior to positive culture</td>
<td>1 (4.7%)</td>
<td>2 (20%)</td>
</tr>
<tr>
<td>Wounds at the time of admission</td>
<td>13 (62%)</td>
<td>9 (90%)</td>
</tr>
<tr>
<td>ICU stay during the incident admission</td>
<td>9 (43%)</td>
<td>1 (10%)</td>
</tr>
<tr>
<td>Reason for admission to hospital A or B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Wound care</td>
<td>12 (57%)</td>
<td>9 (90%)</td>
</tr>
<tr>
<td>▪ Pneumonia or other respiratory issues</td>
<td>4 (19%)</td>
<td>1 (10%)</td>
</tr>
<tr>
<td>▪ Other</td>
<td>5 (21%)</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>
Results: Hospital A

Infection Control Practices

- System to identify MDROs patients → only works if the physician records the information

- Hand Hygiene: available in the patient rooms but not hallways

- Isolation procedures
  - Isolation carts or wall-mounted isolation units → not located near isolation rooms
  - Flow of contact isolation procedures is difficult to follow
  - No routine cohorting of MDR-AB patients → no private rooms

- Medication cart

- Vital signs cart (deposable blood pressure cuff)

- One critical care unit → saline bottles, supplies → stored on a window sill next to a sink
Results: Hospital A

Wound care observation
- Education and training → new employee orientation
- Wound care is provided under physician orders
- No special wound care team
- Very few irrigation or whirlpool treatments
- 4 observations were completed in different units
- Few lapses in infection control (HH, PPE, marker)

Respiratory therapy practices’ observation
- Respiratory cart (supplies, meds, scanner)
- Infection control lapses (HH, PPE, trash bag)
- Staff are responsible on cleaning ventilator
Results: Hospital A

Environmental cleaning observation

- Routine monthly monitoring

- Generally good compliance (isolation procedures, PPE, contact time for cleaning solutions)

- Cleaning carts stay in the hallway → lock and unlock their supply carts to access locked cleaning solutions
Medication cart
Vital signs cart
Results: Hospital B

General infection control practices
- Paper record
- Med cart → no scanner and not rolled into patient’s room
- Vital signs cart
  - vital packet (thermometer, BP kit, and stethoscope) for isolation rooms
- HH and isolation supplies are more accessible in the remodeled parts of the facility

Respiratory therapy practices’ observation
- Few lapses in HH and isolation procedures
- Respiratory cart → not rolled in the patient’s room
Results: Hospital B

Environmental cleaning observation:
- Routinely monitor compliance
- Cleaning cart stocked with supplies → not rolled in patient’s room
- Cleaning solutions and mops are changed every 3 rooms or immediately in isolation rooms
- Difficulties in cleaning commonly touched surfaces during daily cleaning
- Few lapses in HH

Wound care practices’ observation:
- Outpatient wound care
  - No observation was done
  - Care is provided by a wound care team as per physician orders
- Inpatient wound care:
  - Observation → few lapses in HH
  - Care provided by nurses
  - Forming an inpatient wound care team
Results: Clinic A

Clinic A description:
- Provides general surgery and a subspecialty surgical services
- Opens 5-days/week and serves 50 patients/day
- 3 physicians, 2 PAs, 1 LPN and ancillary staff
- 4 exam, 1 storage, 1 dirty utility, 1 radiology and 1 receptionist rooms

Surveillance
- Cultures on all new patients and as needed
- No system to track MDROs

Medication use
- No intravenous fluids, antimicrobials, or any other medications
- Only intramuscular antimicrobials are occasionally given
- No anesthesia or intravenous sedation
- Occasionally central venous catheters (CVCs) are accessed for flushing
- Some medications used in wound care are used in multiple patients
- Wound care medications are kept in a cabinet in the wound care examination room.
Results: Clinic A

Wound care practices’ observation
- Only minor debridement and dressing are done
- Major debridement are done at hospital OR
- Few lapses in infection control practices
- Instrument used were disposable
- Gauze used was from a non-sterile gauze canister located in the countertop
- Few reusable instruments → nearby facility for sterilization

Environmental cleaning procedure and observation
- In-between-patients cleaning is done by the staff
- Terminal cleaning → nearby facility ?
- Some lapses in infection control practices → in-between patients
Results: Clinic A
Results: Laboratory

MDR - Ab Isolates Identified by Hospital A Laboratory between January, 2006 - August, 2012 (n=63)
Laboratory: CDC

<table>
<thead>
<tr>
<th>Percent Similarity^</th>
<th>Description+</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental sample 1</td>
<td>pt 3, pt 11</td>
<td>A</td>
</tr>
<tr>
<td>Environmental sample 2</td>
<td>pt 10, pt 7</td>
<td>A</td>
</tr>
<tr>
<td>pt 2, pt 13</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>pt 14, pt 5</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>pt 12, pt 1</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>pt 15, pt 6</td>
<td></td>
<td>B</td>
</tr>
<tr>
<td>pt 8, pt 9*</td>
<td></td>
<td>C</td>
</tr>
<tr>
<td>pt 9*</td>
<td></td>
<td>C</td>
</tr>
</tbody>
</table>

^ Isolates with a >95% similarity in PFGE band patterns were considered closely related.
Conclusion

- A widespread, long-standing regional outbreak involving multiple healthcare facilities
- Not a common source outbreak
- Most patients are exposed to multiple healthcare facilities
- Chronic wound infection is the primary risk factor
- Multiple infection control issues that may have contributed to MDR-Ab transmission
Limitations

- Only descriptive data → limits our conclusion
- Epidemiologic data → incomplete
- Retrospective lab data for hospital B could not be collected
- Observation studies were limited to few activities → difficult to generalize
- Infection control practices were not assessed in other healthcare facilities → LTCFs or home health agencies
- Limited PH resources → log-term follow up of MDROs outbreaks
Recommendations

- Administrative support is critical to control this outbreak

- Communication and Education (staff, patients, families)

- Ongoing surveillance of MDR-Ab
  - Identify a mechanism to track MDRO status in patient records
  - Communicate patient MDRO status with staff, families and other healthcare facilities upon transfer

- Cohort patients and cohort staff
Recommendations

- **Infection Control practices**
  - Written policies and procedures
  - Hand hygiene and contact isolation → evaluate, educate and monitor compliance (accessibility & availability)
  - Dedicated equipment
  - Routine rounds of IPs with the staff and sharing outbreak progress and antibiogram

- **Environmental cleaning**
  - Evaluate cleaning of shared equipment
  - Educate and monitor compliance
  - Use new technologies for monitoring (fluorescent marker)
  - Clarify responsibilities for cleaning (who does what, when)
  - Written procedures
Recommendations

- Wound care
  - Written procedure
  - Train staff in wound care
  - Use single-use medications
  - Keep multi-dose containers out of the direct patient care areas

- Physicians, particularly IDs and those providing wound care to take leadership in managing this outbreak

- Surveillance culture and preemptive isolation of high risk patient (wounds and previous healthcare exposure)

- Regional meetings will be continued to share incidence of new cases and the follow progress of the outbreak

- Health officers of involved counties to communicate recommendations with each healthcare facility in their jurisdictions
Summary

- Other healthcare facilities
- Home (Healthcare)
- Other Hospitals
- Community ??

Hospital A

Hospital B

Clinic A

LTCFs (A, B, C, etc.)
Update on Fungal Meningitis Outbreak
Outbreak Identification

- Tennessee Department of Health identified a cluster of cases fungal meningitis\(^1,2\)
- Variety of common exposures
- All received epidural spinal injections of methylprednisolone acetate from New England Compounding Center (NECC)
  - 3 implicated lots
    - Recalled 9/26/2012

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Situation Update Nationally

- 23 states received recalled steroids
- CDC laboratories confirmed presence of *Exserohilem rostratum* and two other types of fungus in 2/3 recalled lots as of October 22, 2012 which matches clinical culture

As of November 14, 2012

- 461 cases
  - 451 central nervous system-related infections
  - 10 peripheral joint infections
- 19 states
- 32 deaths
Situation Update
West Virginia Investigation

- Office of Epidemiology and Prevention Services (OEPS) notified of 1 facility in WV receiving recalled steroids

- Worked closely with physicians from the clinic
  - Updates on findings
  - Clinical guidance
  - Recommendations for notification
Situation Update
West Virginia Investigation

- 222 patients received recalled steroids
  - 101 who received joint injections
  - 110 who received epidural injections
  - 11 that received both
- 46 patients received further evaluation
- Zero cases to date
  - Slow growing organism
  - Mild symptoms
  - Risk is low but not zero
Acknowledgment

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