Think about issues and concerns regarding each of these next cases. What would you do differently?
Case Presentations!

Issues & Concerns
Case One - Prison

- 39 y.o. B/F
- Homeless
- Medical history
  - Substance abuse
  - Diabetes
  - HIV-negative
  - Asthma
- Diagnosed with TB
  - 4/8/05 – from sputum collected at local hospital emergency room after release from prison
- Sputum
  - Smears 4+, 4+, 3+
  - Culture positive - Pansensitive
- Infectious period
  - Original – 2/8/05 – 4/8/05
  - After Review
    - 2/8/04 to 4/8/05
- History somewhat inaccurate
  - Information from patient
    - “Released from prison three months prior”
    - “No symptoms at that time”
  - No further follow-up done by local health department immediately
# Incarceration History

<table>
<thead>
<tr>
<th>Dates of Incarceration</th>
<th>County Jail</th>
<th>State Prison</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>County Jail</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• In and out of jail 3 times</td>
<td>TST – 20 mm</td>
<td>4/27/04 to 3/25/05</td>
</tr>
<tr>
<td>• 2004 CXR – stated “WNL” no active disease</td>
<td></td>
<td>TST – 30 mm</td>
</tr>
<tr>
<td><strong>State Prison</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infected period</td>
<td>2/8/04 to 3/25/05</td>
<td></td>
</tr>
</tbody>
</table>
Case History While Incarcerated in Prison (11 months)

- Prison nurse stated she did not believe the client was infectious – saw no cavities on the x-ray
  - The physician agreed!

<table>
<thead>
<tr>
<th>Chest Radiography in Prison</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/3/04 CXR – abnormal – enlarged hilar markings, otherwise Normal</td>
</tr>
<tr>
<td>5/10/04 – CT scan – abnormal</td>
</tr>
<tr>
<td>Recommend bronchoscopy – refused</td>
</tr>
<tr>
<td>5/17/04 – CT scan neck – negative</td>
</tr>
<tr>
<td>10/20/04 CXR – abnormal, bilateral pneumonia, PCP considered</td>
</tr>
<tr>
<td>11/3/04 – CXR – abnormal, suspicious for sarcoidosis</td>
</tr>
<tr>
<td>6/16/04 – CXR – abnormal</td>
</tr>
<tr>
<td>2/4/05 – CXR abnormal – bilateral pneumonia</td>
</tr>
</tbody>
</table>
Sick Calls Identified from Chart Review

• Numerous complaints and medical encounters
  • Did not appear to be related – all dealt with separately
  • 38 sick calls and medical encounters with complaints of:

  - cough
  - chest pain (right sided)
  - laryngitis
  - asthma
  - lump in right neck
  - talking in a whisper
  - dry hoarse voice
  - feeling tired
  - nonproductive cough
  - sinus congestion
  - bronchitis
  - bad cold
  - throat sore
  - flu-like symptoms
  - productive cough
  - throat scratchy
  - pneumonia
  - allergies
DORM A

Control Room
The Contact Investigation

• Initially identified 1,210 inmates and 230 custodial and medical staff as contacts (only treated as CI at first)

• Testing
  • Custody staff tested
    • 38 with positive TSTs
    • Some with blisters
    • Worker’s Compensation did not believe they were positive TSTs

• Attention focused on workers, not on high-priority inmates
  • Six more inmates identified as suspects within a two-week period
Outbreak! Screening of All Employees and Inmates Immediately

• 289 employees and volunteers screened and tested in contact investigation initially
  • DOC identified 95 conversions
  • Information didn’t match between health department and corrections
• List given to the warden of the facility to take action on employees not returning for screening / testing / or reading
  • It worked! Warden did not allow anyone in who had not been seen by health department nurses
• Initial infection rate among employees was approximately 32.87%
Evaluation of the Outbreak
33 Cases

- Method of diagnosis
  - Culture – 73%
    - Smear positive – 39%
  - Clinical – 24%
  - Provider diagnosis – 3%

- HIV status
  - Positive – 36%
  - Negative – 61%

- Tuberculin skin test results
  - Positive – 67%
  - Negative – 30%
  - Previous positive – 3%

- Race and gender
  - Female – 97% / Male – 3%
  - Black – 61% / White – 39%
Source Case 41 Y/O B/F HIV + 2001 Case

Unable to link at this time

Both Pleural Pulmonary
Follow-Up of Released Inmates

- Identify released inmate contacts and needed information
- Provide information to the health departments/state health office and include risk factors of the contacts

- Demographics
  - Name, SS#, address, DOB, information where picked up if applicable, etc.
- Last TST with results, CXR information if applicable
- Date of break in exposure (BIE)

- Risk factors of the contacts
- Other illnesses
- If released to Immigration and Customs Enforcement (ICE), provide release information
- If released out-of-state, include follow-up information
Importance of Collaboration

• All corrections staff should learn about the symptoms of active tuberculosis and progression from infection to disease

• Effective TB control programs in corrections
  • Infection control
  • Case management
  • Contact investigations
  • Discharge/Release planning
  • Importance of continuity of care
Case Two – County Jail

- 26 y.o. B/M
  - 4+ sputum smears
  - Very sickly looking
    - Weight Loss
    - Cough
    - Fever
- Identified in intake
During TB Case Review...

- Public Health Record
  - 29 y.o. incarcerated
  - Isolated immediately
    - No need for CI
  - Tested arresting officer and jail intake officer
    - Both negative
  - Jail Medical to do case management
  - Will follow-up when released from jail
What Followed

- Jail released the inmate after two weeks
- Inmate lost to follow-up
  - 4+ on sputum smear
- Found 3 months later, back in the jail & treated to completion
- After the case review one year later
  - According to record at HD – everything was done per protocol
  - Reviewed the health record in the jail and found the following...
During TB Case Review...

**Public Health Record**
- 29 y.o. incarcerated
- Isolated immediately
  - No need for CI
- Tested arresting officer and jail intake officer
  - Both negative
- Jail Medical to do case management
- Will follow-up when released from jail

**Jail Medical Record**
- 29 y.o. inmate, identified at intake with symptoms of TB
- Immediately removed and placed in MISO#8
  - With two other inmates
- Inmate cooperative, coughing – will follow-up with HD
What would you do next?
The End Result

• Contacts identified after 1 year = 67
  • Frequent re-incarcerations (identified 40)
  • Follow-up information 32 had TST
    • 24(75%) were +
Case Three - Work Release

- 25 y.o. B/M
- Sentenced to 56 days – assault charge
- Past medical history
  - None
- Current Medical
  - TST read “2 days after administration” (documented as 32 – 43 hours later)
  - “Bump” visible, but documented as “0” mm, later documented as “5” mm
- Sick Calls
  - C/O Cough, Swollen Jaw
  - Placed repeated sick calls in – not seen because they were not signed by inmate
  - Jail phone calls recorded inmate “coughing repeatedly”
Work Release

• Infected
  • 108 inmates
  • 42 employees

• Class Action Lawsuit
  • LTBI - Awarded $44,347.83 to $54,347.83 each
    • If develop active disease – additional $200,000 each
  • Active TB - $250,000 each
    • Robinson v. Ramsey County
      USDC (D.Minn.), Case No. 0:08-cv-05779-BHK-AJB
Jail Release (cont’d.)

• Inmate told he was getting out in a couple of days and to go to his own doctor when he gets out
  • ?? deliberate indifference    YES!!!!!

Nurses who Ignored Prisoner's Symptoms of Active TB; $2.28 Million in Damages, Fees and Costs on Remand!
Case Four - MDR-TB in a Federal Pretrial Facility

- 57 year old Tijuana taxi driver crossed Mexico border into U.S.
  - Picked up by Customs and Border Protection
  - Immediately hospitalized with alcoholic hepatitis
  - History of Type II Diabetes on metformin. Started prednisone → insulin dependence
- One week later moved to FPF
  - Portable chest x-ray (CXR) read as “negative”. No TB symptoms

- Three months later diagnosed with pulmonary tuberculosis
  - Cavitary CXR, AFB smear positive
  - Cough x previous 6 weeks with hemoptysis
  - Two months later: Susceptibility Results
    - Resistance to rifampin, isoniazid, pyrazinamide, streptomycin
  
- Re-read of initial CXR: “subtle evidence of upper lobe disease”

• Index case housed on 120 bed unit during infectious period:
  • total of 131 days
    • including 41 days after returning from initial hospitalization on standard 4-drug therapy.

• Very high turnover

• Never left unit – meals/recreation occur on unit

- 388 inmate contacts identified
  - Prior Positive TST:
    - 25/117 (21%) U.S. Born
    - 130/267 (49%) Foreign Born
  - Inmate TST conversions: 29 /158 (18%)
  - Staff TST conversions: 4/87 (4.6%)
- One clinical case of lymphatic TB – HIV infected inmate.
Federal Bureau of Prisons Federal Pretrial Facility
MDR-TB Contact Investigation:
Dispersal of 388 Inmate Contacts
6 Weeks into the Investigation, 2010

Dispersal of Inmate Contacts
(n=388)
as of 12/11/10

Location of Inmate Contacts
- Other FBOP facility
- USMS contract facility
- California community
- Foreign community

Deported
n=102 →
foreign communities
(60 → Mexico)

Released - California community
n=38

Remained incarcerated at FPF
n=84

Other FBOP Facilities
n=101
(43 facilities)

USMS “In-Transit”
n=63
(5 contract facilities)
2nd ICE Inmate

- Inmate identified 10 days after detention as TB suspect
- ICN contacted DIHS Office
  - No contact to local health department
- Inmate placed in isolation
- Released to community for follow-up
Remember!

Every case of TB was once a contact!