UNTREATED LTBI IN 2007 LEADS TO LARGE CONTACT INVESTIGATION AT A LOCAL UNIVERSITY IN 2016

A CAUTIONARY TALE

MARION COUNTY PUBLIC HEALTH DEPARTMENT (MCPHD)
INDIANAPOLIS, INDIANA

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  - TB Program Coordinator
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  - TB Nurse Consultant
- Helen Townsend, MPH, BSN, RN
  - TB Nurse Consultant

NOTHING TO DISCLOSE
HOW DID THIS HAPPEN?

BACKGROUND

• Large increase of refugee arrivals with high risk for TB
  • 2006 - # of refugee arrivals to Indianapolis - 206*
  • 2007 - # of refugee arrivals to Indianapolis - 784*
• MCPHD Refugee Clinic
  • TB skin test (TST)
  • Referral to primary care (PCP) for CXR, medical evaluation
  • No system to track referrals and follow-up

*www.wrapsnet.org

D.1
- 14 yr at US arrival in 2007
- No TB case
- Panel Physicians using 1991 TB Technical Instructions (No TST test overseas)
- 24 yr at TB diagnosis

<table>
<thead>
<tr>
<th>2007 overseas</th>
<th>2007 ONLY</th>
</tr>
</thead>
<tbody>
<tr>
<td>TST</td>
<td>CXR</td>
</tr>
<tr>
<td></td>
<td>Normal</td>
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</table>
THE DETAILS

- 01/29/2016 – presented at Urgent Care
  - Abnormal CXR
  - Cough, fever, weight loss for ~ 2 months
  - Had applied for Medicaid, but hadn’t come through yet
  - Sent to ER d/t no insurance
  - Masked (client and husband)
  - Called MCPHD

HISTORY

- Didn’t remember she had a positive TST in 2007
  - Lives with husband, 3 yo son
  - Close contact with Mother, Father, Siblings

- Attends local university
  - Missed two weeks of classes in January 2016
    - Lecture hall
    - Small classroom

- Went to a wedding on 12/17/2016
  - Felt unwell – chills. Thought it was d/t the cold

D.I.

14 yo at US arrival in 2007
- No TB class
- Panel Physicians still using 1991 TB Technical Instructions
- 24 yo at TB diagnosis

<table>
<thead>
<tr>
<th>2007 overseas</th>
<th>2007 study</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>TST</td>
<td>Done</td>
<td>Not done</td>
</tr>
<tr>
<td>CXR</td>
<td>Normal</td>
<td>Bilateral nodular opacities R &amp; Cavity</td>
</tr>
<tr>
<td>Spumum</td>
<td>Moderate</td>
<td>01/30/2016</td>
</tr>
<tr>
<td>NPE</td>
<td>02/20/2016</td>
<td></td>
</tr>
<tr>
<td>Spumum</td>
<td>02/12/2016</td>
<td>02/28/2016</td>
</tr>
<tr>
<td>Smeat -</td>
<td>03/28/2016</td>
<td></td>
</tr>
<tr>
<td>Culture -</td>
<td>03/15/2016</td>
<td>Pen</td>
</tr>
<tr>
<td>Suc</td>
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</table>
HOUSEHOLD CONTACTS

Family Contacts
3 positives

- 7 family contacts identified
- 5 family members evaluated
  - 1 previously treated for LTBI - CXR normal
  - 3 conversions - 2 completed LTBI therapy; 1 on therapy
  - 1 negative on 1st & 2nd round
- 2 family members not fully evaluated

CONTACT INVESTIGATION AT UNIVERSITY

- Total eligible for testing - 363
  - Faculty - 8
  - Students - 355
  - Email sent to inform about need for screening
    - If need CXR
    - 90% have insurance
    - Those without insurance refer to MCPHD TB Clinic
  - Minors - 2 (refer to student health center)

1ST & 2ND ROUND TESTING TO BE DONE AT UNIVERSITY

- ICS had been used by TB Control once before for hundreds of contacts in a school
- Planning meetings with university
  - Determination of duties
  - Planning meetings within MCPHD
  - Determination of POD leaders/staff
PLANNING

**MCPHD**
- Registration/consent forms
- Educational materials
- Testing supplies
- PPD reading reminders
- Load/unload trailer
- Dollies
- Testing staff
- No shift changes
- Laptops & MiFis
- Printer
- Interaction w media

**University**
- List of students
- Lobby set-up
- Room set-up
- PPD nursing area if necessary
- Security
- Signage
- Parking permits
- First aid
- Cots
- Juice/crackers
- Communication w students
- Letter sent to contact who no longer attend university
- Emails to current students

**POD STRUCTURE – 2ND ROUND**

**TESTING LAYOUT**
GUIDELINES TST VS IGRA

- Born outside of USA = IGRA
- Previous IGRA = IGRA
- Unable to return on Thursday for reading = IGRA
- All others = TST

1ST ROUND VS 2ND ROUND

First Round
- Tuesday, 9 Feb 2016
  - 8am-2pm
  - Place TST
  - IGRA
- Thursday, 11 Feb 2016
  - 8am-4pm
  - Read TST
  - IGRA

Second Round
- Tuesday, 12 Apr 2016
  - 10am-4pm
  - Place TST
  - IGRA
- Thursday, 14 Apr 2016
  - 10am-4pm
  - Read TST
  - IGRA

CHALLENGES

- Paperwork not completed
  - Did students/faculty receive?
- Inadequate signage
- Unable to get accurate real-time count
- Need more direction on command structure
- Small numbers
  - 0 close contacts
IMPROVEMENTS
- Improve signage
- Sign in sheet
- Request that students come during class time
- Request that students are asked to complete forms before coming to screening

RESULTS

SCREENING RESULTS

<table>
<thead>
<tr>
<th>TIME</th>
<th>TSTs placed</th>
<th>IGRAs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday, 9 Feb 2016</td>
<td>44 TSTs</td>
<td>7 IGRA</td>
</tr>
<tr>
<td>Thursday, 11 Feb 2016</td>
<td>41 TSTs</td>
<td>71 IGRA</td>
</tr>
<tr>
<td>Tuesday, 12 Apr 2016</td>
<td>35 TSTs</td>
<td>28 IGRA</td>
</tr>
<tr>
<td>Thursday, 14 Apr 2016</td>
<td>28 TSTs</td>
<td>30 IGRA</td>
</tr>
</tbody>
</table>
### SCREENING RESULTS

<table>
<thead>
<tr>
<th>1st Round</th>
<th>2nd Round</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Positives</td>
<td>3 Positives</td>
<td>2 Positives</td>
</tr>
</tbody>
</table>

- Positive TST (5)
- Positive IGRA (0)
- CXR N/A
- LTBI N/A
- LTBI therapy N/A

- Positive TST (2)
- Positive IGRA (2)
- CXR x 2 negative
- LTBI therapy (2)

- Positive TST (3)
- Positive IGRA (2)
- CXR x 2 negative
- LTBI Therapy (2)

### CONCLUSION

**IN CONCLUSION...**

- All of this
  - 2 months of RIPE + 7 months of RI
  - 9 months of DOT
  - Client sent to collections for medical bills
  - Client lost financial aid b/c had to drop out d/t isolation
  - Client's education delayed
  - Client's separation from family while in isolation
  - $ for medications: ~$810.00
  - ~$45,000.00 of MCPHD staff time for University CI

- Could have been prevented by
  - 9 months of INH in 2007
  - $ for medication: ~$40.00
  - $ for staff time: ~$420.00 for 12 to 15 hours

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2017 National TB Conference, Atlanta, Georgia
National TB Controllers Association
www.tbcontrollers.org
TREAT LTBI
TAKE AWAY MESSAGE

REFERENCES

- www.wrapsnet.org (Refugee Processing Center)
- https://www.cdc.gov/mmwr/preventioncontrolfocus/pdfs/ta120505.pdf (Technical Instructions for Public Health Practitioners)
- https://www.cdc.gov/immigrantrefugeehealth/exams/ti/panel/ (Core Curriculum on Tuberculosis)
- https://www.cdc.gov/mmwr/preview/mmwrhtml/sr311101.htm (Guidelines for the Investigation of Contacts of Persons with Infectious Tuberculosis 2008)