TB in Immigrants and Refugees

National TB Workshop
June 13, 2012

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Tuberculosis Cases, United States, 1992-2011

2011 TB rates:
- Total: 3.4 per 100,000
- US-born: 1.5 per 100,000
- Foreign-born: 17.3 per 100,000
Immigration Arrivals

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<tr>
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<tbody>
<tr>
<td>Mexico</td>
<td>67,796</td>
<td>15,011</td>
<td>413,129</td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>36,104</td>
<td>15,364</td>
<td>218,783</td>
</tr>
<tr>
<td>Philippines</td>
<td>33,099</td>
<td>7,215</td>
<td>436,129</td>
</tr>
<tr>
<td>China</td>
<td>35,506</td>
<td>3,032</td>
<td>258,763</td>
</tr>
<tr>
<td>Vietnam</td>
<td>26,283</td>
<td>2,884</td>
<td>246,256</td>
</tr>
<tr>
<td>India</td>
<td>25,440</td>
<td>2,875</td>
<td>253,819</td>
</tr>
<tr>
<td>Haiti</td>
<td>12,631</td>
<td>2,732</td>
<td>195,126</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>15,264</td>
<td>2,585</td>
<td>144,385</td>
</tr>
<tr>
<td>El Salvador</td>
<td>11,170</td>
<td>2,200</td>
<td>118,576</td>
</tr>
<tr>
<td>Jamaica</td>
<td>10,985</td>
<td>1,245</td>
<td>90,211</td>
</tr>
<tr>
<td>Total</td>
<td>481,948</td>
<td>46,017</td>
<td>5,335,179</td>
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Source: Department of Homeland Security
Culture and Directly Observed Therapy (formerly 2007 TB TI)

TB TI (formerly 2007 TB TI)

If TB rate ≥20/100,000 or 2-14 years of age: TST ≥10 mm or positive IGRA

HIV or TB signs or symptoms

DOT until cured Class A Waiver

Valid for travel within 3 months

Sputum smears and cultures (3)

All (-)

Noninfectious Class B1

One or more (+)

Infectious Class A

Scope of Implementation

- 152 jurisdictions have panel physicians
- ≈700 panel physicians

Implementation Strategy

- Globally
  - Initially target large-volume, high-burden source countries
  - Ultimately implement in all countries
- In country
  - Develop culture and DOT infrastructure
  - Link panel physician programs with broader control efforts
Typical Implementing Site Visit Strategy

- First visit
  - Evaluate panel physicians
  - Discuss/teach Culture and DOT TB TI
  - Inspect candidate laboratories
  - Inspect candidate DOT sites
  - Meet with tuberculosis officials
  - National Tuberculosis Programs (NTP), etc.
  - Educate Consular Section staff members
  - Develop implementation plan
- Second visit (if needed)
  - Focused follow-up with emphasis toward start date

Laboratory Challenges

- NTPs’ lack of requirements for cultures
- Lack of culture laboratories
- Lack of quality culture laboratories
- Lack of second line drug susceptibility testing (DST)
- Delayed reporting times

Treatment Challenges

- DOT may not exist
- First-line therapy
  - NTP adherence to 8-month regimen (no longer recommended by WHO)
- Second line drugs
  - Limited manufacturers
  - Limited supplies of quality-assured drugs
  - Some drugs very expensive
  - Some countries have import restrictions
- MDR TB expertise lacking
- Common MDR TB scenario
  - Small pilot projects approved by Green Light Committee (GLC)
  - DOT consistent with US standards
  - Very limited number of cases treated
    - Vietnam – 100; Dominican Republic – 50; Haiti - 12
Current status

- 36 with panel physicians
- 14 without panel physicians
- 75% of immigrants
- 73% of refugees

Laboratory Capacity Building

- New laboratories
  - China (5), India (5), Kenya, Mexico, Nepal, Thailand (2), Vietnam
- Greatly expanded laboratories
  - Dominican Republic, Ethiopia, Ghana, India (2)
- Laboratories performing 2nd line DST
  - China (Guangzhou), Kenya, Mexico, Nepal, Thailand, Vietnam
Linkages with Other Programs

- Public-private partnerships
  - Dominican Republic
    - Treatment coordination
    - Training of NTP staff
  - International Organization for Migration (IOM)
    - Adult Bubov and Ho Chi Minh City
      - Assistance with repatriation of TB patients
  - Nepal
    - Close cooperation with IOM
- Specimen testing for local NGOs
  - Mexico
    - Cultures for Project Juntos
- Engagement with global tuberculosis community
  - IOM
    - TB Reach awards to increase MDR TB capacity in Ethiopia, Thailand
    - Participation in tuberculosis meetings in Geneva
  - Intergovernmental coordination
    - Nepal
      - Camp-wide tuberculosis program managed by IOM
    - NTP played leadership role in implementation
      - El Salvador

Evaluation and Monitoring

- Follow-up visits when needed
- ACET/NTCA evaluations
  - 2007 – IOM Thailand
  - 2008 – Manila, Philippines
  - 2009 – IOM Nepal
  - 2010 – Ho Chi Minh City, Vietnam
  - 2012 – Santo Domingo, Dominican Republic

Education Program

- Basic tuberculosis education
  - Regional Training and Medical Consultation Centers (RTMCC)
    - “Clinical Intensive” courses
      - Attended by 52 panel physicians since 2008
    - Mary Naughton Faculty for Southeastern National Tuberculosis Center (SNTC)
  - Training Summits – 9 beginning 2008
    - International Panel Physicians Association (IPPA) partnership
    - Cellestis co-sponsor
- Webinars
  - Five conducted beginning 2010
    - Accessible through LinkedIn
- Panel Physicians Portal
- Online training modules
- Consular training
RTMCC Consultations
October 1, 2010 – September 30, 2011

- Cooperative agreement funding
- SNCC led effort to develop consultation system
- RTMCC have also provided
  - Printed materials for summits
  - MDR TB expert to Lima and Istanbul summits

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<thead>
<tr>
<th>Country</th>
<th>Number</th>
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<tr>
<td>Burma</td>
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<tr>
<td>Ethiopia</td>
<td>6</td>
</tr>
<tr>
<td>Egypt</td>
<td>1</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1</td>
</tr>
<tr>
<td>Nepal</td>
<td>5</td>
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<tr>
<td>Mexico</td>
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</tr>
<tr>
<td>Russia</td>
<td>1</td>
</tr>
<tr>
<td>Thailand</td>
<td>6</td>
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<tr>
<td>Vietnam</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
</tr>
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10 for MDR TB cases

CDC Immigration Requirements: Reduced TB Importation - California

- [Graph showing TB cases, months after US arrival]
Progress in Prevention: TB in MN

- Since implementation of the new TB technical instructions in 2007, and gradual expansion worldwide, the number of TB cases in MN among newly arrived refugees and immigrants has dropped significantly:

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2010</th>
<th>% decrease</th>
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<tbody>
<tr>
<td>% Dx at &lt; 12 mo</td>
<td>20%</td>
<td>12%</td>
<td>(40%)</td>
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<tr>
<td>% Dx at 1-2 yrs</td>
<td>23%</td>
<td>9%</td>
<td>(61%)</td>
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MDH Disease Control Newsletter
Vol 39 No 1, Jan-Aug 2010

Impact on US Domestic Tuberculosis Control

- Cost Savings to US domestic programs
- Diagnose ≈ 1,000 applicants each year in Culture and DOT TB programs
- If 4% MDR TB: 40 MDR TB patients yearly
- Cost of treating cases in United States
  - Pansusceptible: ≈ $13,000 (Holland, et al, AJRCCM.2009;179:1055-1060)
  - MDR TB: $50,000 - $500,000
- Savings to US health departments
  - $13 Million - $30 Million

TB TI Achievements

- Gains in diagnosis overseas and reductions in importations may be nearing higher end of potential
  - 73% of immigrant visa entrants screened
  - 77% of US diagnosed foreign-born cases from countries where TB TI have been implemented
  - 90% of persons with TB notifications are from countries where TB TI have been implemented
TB TI Implementation Closeout

• One global standard for screening requirements
• Complete gains in US TB control among foreign-born
• CDC leadership in global tuberculosis control
• Closeout strategy for all programs to be screening by October 1, 2014 (FY 2015)

Intergovernmental Immigrant and Refugee Health Work Group

• Australia, Canada, New Zealand, United Kingdom, and United States
• Joint coordination and collaboration on medical screening programs for immigrants and refugees
• United Kingdom
  – Begin implementing screening program that relies on cultures
    • India will be one of the first major countries
• Analysis of country arrival and tuberculosis burden trends
  – Determine similarities and differences between countries
  – Identify areas for collaboration that could have greatest impact


Foreign Policy and Enlightened Self-Interest

Net Savings or Added Costs for Differing TB Strategies
Schwartzman, et al. NEJM 2005;353:1008-20