Wisconsin TB Program Update

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Wisconsin TB Program
TB Summit
2015
Disclosure

• None
Objectives

• To describe US TB epidemiology
• To describe Wisconsin TB epidemiology
• To discuss ongoing activities of the Wisconsin TB Program
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World Map as proportion of where TB cases are found
U.S. TB STATISTICS
CDC National Data

FIGURE 2. Number and rate* of tuberculosis (TB) cases among U.S.-born and foreign-born persons, by year reported — United States, 2000–2013†

* Per 100,000 population.
† Data are updated as of February 24, 2014. Data for 2013 are provisional.
U.S. TB EPIDEMIOLOGY

TB Case Rates,* United States, 2013

*Cases per 100,000.

≤ 3.2 (2013 national average)

> 3.2

*Cases per 100,000.
U.S. TB EPIDEMIOLOGY

TB Case numbers United States, 2013

Case Rates per 100,000

- ≤ 3.2 (2013 national average)
- > 3.2

Wisconsin Department of Health Services
Number of TB Cases in U.S.-Born vs. Foreign-Born Persons, United States, 1993–2013*

*Updated as of June 11, 2014.
Reported TB Cases by Race/Ethnicity,*
United States, 2013

- White: 15%
- Black or African American: 22%
- Hispanic or Latino: 29%
- Asian: 32%
- Native Hawaiian or Other Pacific Islander: 1%
- American Indian or Alaska Native: 1%

*All races are non-Hispanic. Persons reporting two or more races accounted for less than 1% of all cases.
TB Cases by Race/Ethnicity† — United States, 2013

- Asian: 31%
- Hispanic: 28%
- Black: 22%
- White: 15%
- Other*: 2%

† Persons identified as white, black, Asian, or of other race are all non-Hispanic. Persons identified as Hispanic might be of any race.
* Persons included in this category are American Indian/Alaska Native, Native Hawaiian or other Pacific Islander, or multiple race.

Data are updated as of 3/21/14 and are provisional.
MDR-TB in the U.S. 2007-2012

- States with no MDR-TB cases (10)
- States with 1-10 MDR-TB cases (27 including D.C.)
- States with >10 MDR-TB cases (14)
Primary MDR TB, United States, 1993 – 2013*

*Updated as of June 11, 2014.

Note: Based on initial isolates from persons with no prior history of TB. MDR TB defined as resistance to at least isoniazid and rifampin.
TB Case Rates
per 100,000 Population
Declining rates of TB in Wisconsin from 29.2 in 1953 to 0.83 in 2014

1953 = 1,024 cases (29.2/100,000)  
1965 = 560 cases (13.5/100,000)  
1975 = 265 cases (5.8/100,000)  
1995 = 117 cases (2.3/100,000)  
2004 = 95 cases (1.7/100,000)  
2012 = 71 cases (1.2/100,000)  
2013 = 50 cases (0.87/100,000)  
2014 = 48 cases (0.83/100,000)
TB Cases in Wisconsin 2004

Wisconsin Department of Health Services

2015 WI TB Update

WI TB Program
TB Case Characteristics
Wisconsin 2006-2014
### TB Case Characteristics

#### Wisconsin 2006-2014

**2006-2014:**

<table>
<thead>
<tr>
<th></th>
<th>% of all</th>
<th>Age (avg.)</th>
<th>Sex (%) M/F</th>
<th>Race (%)</th>
<th>MKE %</th>
<th>Other %</th>
<th>Died %</th>
<th>USB %</th>
<th>FB %</th>
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<tbody>
<tr>
<td><strong>LTC</strong></td>
<td>1.74</td>
<td>71</td>
<td>80/20</td>
<td>W 70</td>
<td>30</td>
<td>0</td>
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<td><strong>Jail</strong></td>
<td>1.39</td>
<td>45.1</td>
<td>100/0</td>
<td>W 13</td>
<td>25</td>
<td>50</td>
<td>13</td>
<td>37.5</td>
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<td><strong>Drugs</strong></td>
<td>4.7</td>
<td>37.1</td>
<td>85/15</td>
<td>W 22</td>
<td>22</td>
<td>37</td>
<td>15</td>
<td>4</td>
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<td><strong>Alcohol</strong></td>
<td>10.98</td>
<td>46.4</td>
<td>83/17</td>
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<td>25</td>
<td>19</td>
<td>14</td>
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<td><strong>Homeless</strong></td>
<td>3.31</td>
<td>45.1</td>
<td>74/26</td>
<td>W 26</td>
<td>42</td>
<td>26</td>
<td>5</td>
<td>0</td>
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</table>

M=male, F=female
USB- U.S. Born, FB- Foreign-Born
W=White, B=Black, WH=White Hispanic, A= Asian, AI= American Indian
LTCF= Long Term Care
MKE= Milwaukee
Number of TB Cases in U.S.-Born vs. Foreign-Born Persons
Wisconsin, 2005-2014
## TB Cases in Wisconsin by Place of Birth, 2005-2014

<table>
<thead>
<tr>
<th>U.S. or Foreign Born</th>
<th>Count</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.-Born</td>
<td>258</td>
<td>39.75%</td>
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<tr>
<td>Foreign-Born</td>
<td>391</td>
<td>60.25%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>649</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
Immigration Status at First Entry to U.S.
TB Case, 2010-2014

- Employment
- Family/Fiance
- Immigrant
- Refugee
- Student
- Tourist
The Two Most Common Factors Associated with TB Disease in Wisconsin are

Foreign-born

And/or

Known contact with someone with active TB disease
**RISK OF INFECTION: ACCORDING TO THE CONDITIONS OF EXPOSURE**


<table>
<thead>
<tr>
<th>Nature of Exposure</th>
<th>Risk of Infection (from TB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None Known (baseline)</td>
<td>1 in 100,000 *</td>
</tr>
<tr>
<td>Contact with Infected Person +</td>
<td></td>
</tr>
<tr>
<td>Casual social contact</td>
<td>1 in 100,000</td>
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<tr>
<td>School, workplace</td>
<td>1 in 50 to 1 in 3</td>
</tr>
<tr>
<td>Bar, social club</td>
<td>Up to 1 in 10</td>
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<tr>
<td>Dormitory</td>
<td>1 in 5</td>
</tr>
<tr>
<td>Home</td>
<td>1 in 3</td>
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<tr>
<td>Nursing home</td>
<td>1 in 20</td>
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</tbody>
</table>

- Values are estimates, based on available medical literature, of the likelihood that under the conditions indicated, exposure to a person with...tuberculosis will cause another infection. Clearly, the duration of the exposure is a major factor in interpreting these data.

- + Susceptibility to tuberculosis reflects the intensity of the exposure, which in turn, is determined by the number of organisms aerosolized by the index patient and by the closeness of the conditions of exposure (e.g., size of space and adequacy of ventilation).
2014 Data

- Total cases = 48
- Pulmonary = 29 (60%)
- Extra-pulmonary = 11 (23%)
- Both pulmonary & extra-pulmonary = 8 (17%)
- Children <18 yo = 0 (0%)
- Avg. age = 51.25 yrs.
- Foreign-born = 33 (69%)
- U.S.-born = 15 (31%)
- MDR-TB cases = 3 (6%)
2015 Data (as of March 31st)

- Total cases = 16
- Pulmonary only = 75% (12)
- Extra-pulmonary = 19% (3)
- Both Pulmonary & Extra-pulmonary = 6% (1)
- Children = 0%
- Foreign-born = 69% (11)
- U.S.-born = 31% (5)
- MDR-TB cases = 1
RISK-BASED TESTING
Annual TB Screening

Recommendation

1. All health care workers should get a baseline test (either a 2-step TB skin test or a blood test).


3. And test only those who present with additional risk factors or has known TB exposure.
Annual TB Screening Recommendation

• Test with intent to treat positives – not much benefit in random TB testing result

• Handouts
  o Positive TST – What Next?
  o Positive IGRA – What Next?

• Local public health and state TB program happy to assist with interpretation and decisions
TB Infection

• Treatment options:
  o INH and Rifapentine, high dose, weekly via directly observed therapy X 12 weeks
  o INH 300 mg daily X 9 months
  o Rifampin 600 mg daily X 4 months
  o 4-drug therapy X 2 months (for patients who are strong suspects for TB disease and for whom you are awaiting culture results)
Collaborations for Change

- Collaborating with Division of Quality Assurance (DQA) to use the annual TB screening recommendation.

- Collaborating with Department of Public Instruction (DPI) to change Wis. Stat. 118.25 language to include annual TB screening rather than requiring TB testing by TST and CXR.
Ongoing Activities

• WI TB Program website
• WI TB Prevention Coalition
• Disseminate the TB Toolkit for clinician education
• Improve contact investigation
• Encourage the report of latent TB infections
Thank you!

Questions?