Wisconsin Tuberculosis (TB) Program Update

Pa Vang, RN, MSN
Wisconsin TB Program
Dane County TB Summit
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Disclosure

• I have no relevant financial relationship associated with the content of the presentation.

• I do not intend to discuss off-label/investigative use of a commercial product/device.
Objectives

• To describe US TB epidemiology
• To describe Wisconsin TB epidemiology
• To discuss ongoing activities of the Wisconsin TB Program
# The Global Burden of TB, 2014

<table>
<thead>
<tr>
<th>Condition</th>
<th>Estimated number of cases</th>
<th>Estimated number of deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>All forms of TB</td>
<td>9.6 million</td>
<td>1.5 million (16%)*</td>
</tr>
<tr>
<td>HIV-associated TB</td>
<td>1.2 million (12%)</td>
<td>390,000 (33%)</td>
</tr>
<tr>
<td>Multi-drug resistant TB</td>
<td>480,000 (5%)</td>
<td>190,000 (40%)</td>
</tr>
</tbody>
</table>

* Including deaths attributed to HIV/TB

Source: WHO Global Tuberculosis Report 2015
Estimated TB Incidence Rates, 2014
U.S. TB Statistics

9,563 TB CASES*
reported in the U.S. in 2015

*Provisional Data

www.cdc.gov/tb
U.S. TB Statistics

• The number of reported TB cases in the US has increased for the first time in 23 years.
  o A total of 9,563* TB cases were reported in the US based on preliminary data from the CDC National TB Surveillance System.
    ▪ This represents an increase of 157 cases from the 9,406 case reported in 2014**.
    ▪ This is the first time since 1991 that the annual number of reported TB cases in the US has increased from one year to the next.

*Provisional data  **Provisional to be revised in 2016 surveillance report
2015 U.S. TB Statistics

• Progress toward TB elimination has stopped.
• Leveling of U.S. TB incidence during 2013-2015 is noteworthy.
  o Might represent the limits of what is achievable using current TB control methods and resources.
  o Could also represent the beginning of another TB resurgence.
• Resuming declines in TB incidence will require more comprehensive public health approaches.
  o More detection and treatment of latent TB infection (LTBI) among foreign-born.
  o More emphasis on stopping transmission in the US.
Eliminating TB

• Eliminating TB in the US requires a new expanded approach to test and treat LTBI, and strengthen existing systems to stop TB transmission.

• Current efforts to rapidly diagnose and treat TB disease are essential, but will be insufficient alone to eliminate this serious health threat.

• TB cannot be eliminated in the US without increased efforts to test and treat LTBI among high-risk groups.

• This will require engaging new partners to reach these high-risk groups.
$435 MILLION

Total cost to U.S. for TB cases in 2014.

www.cdc.gov/tb
Reported TB Cases

United States, 1982–2014

Wisconsin, 1982–2014
TB Case Rates,* Wisconsin, 2005-2014

10 year average TB rates 2005-2015

- ≤ 0.50
- 0.51-1.0
- 1.1-1.5
- 1.6-2.0
- >2.0

*rate = number of cases per 100,000
TB Case Rates by Age Group

United States, 1993–2014

Wisconsin, 2005–2014
To eliminate tuberculosis (TB), we must reach the hardest hit populations.

1 OUT OF 20
TB patients is a person experiencing homelessness.

www.cdc.gov/tb
Reported TB Cases by Age Group

United States, 2014

- ≥ 65 yrs (24%)
- 45-64 yrs (31%)
- <15 yrs (5%)
- 15-24 yrs (10%)
- 25-44 yrs (30%)

Wisconsin, 2005-2014

- ≥ 65 yrs (7%)
- 45-64 yrs (24%)
- <15 yrs (13%)
- 15-24 yrs (22%)
- 25-44 yrs (34%)
TB Case Rates by Age Group and Sex

United States, 2014

Wisconsin, 2005-2014
Reported TB Cases by Race/Ethnicity

**United States, 2014**
- Hispanic or Latino: 29%
- Asian: 32%
- White: 13%
- Multiple Race: 2%
- Black or African American: 21%
- Native Hawaiian or Other Pacific Islander: 1%

**Wisconsin, 2005-2014**
- Hispanic or Latino: 23%
- Asian: 36%
- White: 21%
- Black or African American: 21%
- Native Hawaiian or Other Pacific Islander: 1%
Number of TB Cases in
U.S.-born vs. Foreign-born Persons

United States, 1993-2014
Wisconsin, 2005-2014
Trends in TB Cases in Foreign-born Persons

United States, 1993-2014

Wisconsin, 2005-2014
TB Case Rates in U.S.-born vs. Foreign-born Persons

United States, 1993-2014

Wisconsin, 2005-2014

Graph showing TB case rates over time for U.S.-born and foreign-born persons in the United States and Wisconsin.
## Countries of Birth of Foreign-born Persons Reported with TB

### United States, 2014
- Mexico (21%)
- Philippines (12%)
- India (8%)
- Vietnam (8%)
- China (7%)
- Guatemala (3%)
- Haiti (3%)
- Other countries (39%)

### Wisconsin, 2005-2014
- Mexico (27%)
- Hmong (Laos/Thai) (18%)
- India (14%)
- Philippines (5%)
- China (5%)
- Burma (3%)
- Somalia (3%)
- Other counties (25%)
Primary MDR TB

United States, 1993-2014

Wisconsin, 2005-2014

[Graph showing trends in MDR TB cases and percentages over the years.]
The Two Most Common Factors Associated with TB Disease in Wisconsin are

Foreign-born

and/or

Known contact with someone with active TB disease
To eliminate tuberculosis (TB), we must reach the hardest hit populations.

TB case rates are:

- 29x Higher for **Asians** than whites.
- 8x Higher for **African Americans** than whites.
- 8x Higher for **Hispanics/Latinos** than whites.

www.cdc.gov/tb
TB Cases by Residence in Correctional Facilities, Age ≥15

United States, 1993-2014

Wisconsin, 2005-2014

No. of Cases

Percentage

No. of Cases

Percentage


No. of Cases

Percentage

2013 2014
TB Cases Reported as Homeless in the 12 Months Prior to Diagnosis, Age ≥15

United States, 1993-2014

No. of Cases

Percentage

Year
No. of Cases
Percentage
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013

Wisconsin, 2005-2014

No. of Cases

Percentage

Year
No. of Cases
Percentage
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014

Legend:
- Orange: No. of Cases
- Purple: Percent of Total Cases
TB Cases Reported in LTC Prior to Diagnosis, Wisconsin, 2005-2014

*Average TB rate over 10-years = 29.5/100,000.*
TB in Wisconsin Refugee Population
2005-2014

Refugee population by country of origin:
- Laos/Thailand: 68%
- Burma: 12%
- Somalia: 12%
- Cambodia: 2%
- Nepal: 3%
- Vietnam: 1%
- Sudan: 1%
- Bhutan: 1%
## TB rate* for Selected Wisconsin Populations 2005-2014

<table>
<thead>
<tr>
<th>Rank by rate/100,000</th>
<th>Rank by country of origin</th>
<th>Numbers &amp; Rate/100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rate/100,000</td>
<td>Country/Location</td>
</tr>
<tr>
<td>New Refugees+</td>
<td>70.0</td>
<td>Mexico</td>
</tr>
<tr>
<td>African-born</td>
<td>57.5</td>
<td>Hmong (Lao or Thai)</td>
</tr>
<tr>
<td>Homeless</td>
<td>38.9</td>
<td>India</td>
</tr>
<tr>
<td>Other refugees</td>
<td>33.4</td>
<td>Homeless</td>
</tr>
<tr>
<td>Long-Term Care</td>
<td>29.5</td>
<td>Philippines</td>
</tr>
<tr>
<td>Asian-born</td>
<td>25.5</td>
<td>China</td>
</tr>
<tr>
<td>Corrections</td>
<td>10.6</td>
<td>Long-Term Care</td>
</tr>
<tr>
<td>Latin America</td>
<td>10.5</td>
<td>Burma</td>
</tr>
<tr>
<td>European</td>
<td>2.2</td>
<td>Somalia</td>
</tr>
<tr>
<td>U.S. –born</td>
<td>0.33</td>
<td>Corrections</td>
</tr>
</tbody>
</table>

* Rate = Number of TB cases per 100,000 population

* New refugee is defined as a refugee diagnosed with TB within 5-years of arrival into the U.S.
### 2014 vs 2015 TB Data

<table>
<thead>
<tr>
<th>Category</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total case = 48</td>
<td>Total case = 69</td>
</tr>
<tr>
<td>Pulmonary only</td>
<td>60% 29</td>
<td>59% 41</td>
</tr>
<tr>
<td>Extra-pulmonary</td>
<td>23% 11</td>
<td>32% 22</td>
</tr>
<tr>
<td>Both pulmonary &amp; extra-pulmonary</td>
<td>17% 8</td>
<td>9% 6</td>
</tr>
<tr>
<td>Children &lt;15 yo</td>
<td>0% 0</td>
<td>1% 1</td>
</tr>
<tr>
<td>Foreign-born</td>
<td>69% 33</td>
<td>71% 49</td>
</tr>
<tr>
<td>US-born</td>
<td>31% 15</td>
<td>29% 20</td>
</tr>
<tr>
<td>MDR-TB cases</td>
<td>6% 3</td>
<td>6% 4</td>
</tr>
<tr>
<td>Deaths</td>
<td>6% 3</td>
<td>10% 7</td>
</tr>
</tbody>
</table>
2015 TB Cases by Region

*Preliminary as of November 1, 2015. WI TB Program.
A typical TB case in the U.S. requires:

PLUS

- X-rays
- Lab tests
- Follow-up & testing of contacts

www.cdc.gov/tb
WI TB PROGRAM
TB Infection Treatment Options

- INH and Rifapentine, high dose, weekly via directly observed therapy X 12 weeks
- INH 300 mg daily X 9 months
- Rifampin 600 mg daily X 4 months
- 4-drug therapy X 2 months (for patients who are strong suspects for TB disease and for whom you are awaiting culture results)
Referral Reason for LTBI Treatment, 2010-2015

Population risk factor: 77%
Active TB (suspect or confirmed): 1%
Contact to current case of TB: 12%
Medical risk factor: 10%
WI LTBI Treatment Regimen Prescribed
2010-2015

INH Daily x9 months
RIF daily x4 months
3HP
MDR-LTBI
Other
### Average Completion of LTBI Treatment Prescribed 2010-2014

<table>
<thead>
<tr>
<th></th>
<th>INH Daily x9 months</th>
<th>RIF daily x4 months</th>
<th>3HP</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>64%</td>
<td>75%</td>
<td>85%</td>
<td>64%</td>
</tr>
</tbody>
</table>
2016 NTCA Conference
Denver, CO

TB Survivor Training

Poster Presentation
CDC U.S. TB Elimination Champions Project

Project recognizes organizations that have made innovative and successful contributions toward ending TB in their community.

CONGRATULATIONS!!!!

Wisconsin State Laboratory of Hygiene
UNIVERSITY OF WISCONSIN–MADISON
Ongoing Activities

- WI TB Program website: https://www.dhs.wisconsin.gov/tb
Take On TB!

Eliminating TB requires a comprehensive approach. CDC is committed to fighting TB whenever & wherever it occurs through:

- Vigilant Surveillance
- Better Diagnostics & Treatments
- Testing & Treatment of High-Risk Populations
- Education of Health Care Providers
Take On TB!

• Eliminating TB in the U.S. and Wisconsin requires new expanded approaches, including:
  • Increased attention to the diagnosis and treatment of latent TB infection, especially in persons from countries where TB is more common.
  • Greater efforts in reaching U.S. populations most affected by TB.
  • More emphasis on interrupting the relatively limited, but persistent, TB transmission (e.g., among persons experiencing homelessness) that is ongoing in the U.S.
Take On TB!

Current U.S. efforts to rapidly diagnose and treat TB disease are essential, but will be insufficient alone to eliminate this serious health threat.

- TB contact investigations are complex.
- Misdiagnosis of TB still exists and health care professionals often do not “think TB”. Limited training opportunities in TB clinical, laboratory, and research has led to a loss of expertise and experience in TB.
- Prompt and effective treatment of TB disease is critical to prevent drug-resistance and MDR-TB.
Upcoming Events

• November 3, 2016 – Northeastern Region TB Summit
TB Dispensary
Wisconsin TB Program
1 West Wilson Street, PO Box 2659
Madison, Wisconsin 53701-2659
608-266-9692 (Office)
608-266-0049 (Fax)

THANK YOU!
QUESTIONS?