TB ELIMINATION IN SAN FRANCISCO

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Why do we care about tuberculosis?

• TB is a social disease
  – airborne transmission -> public safety
• TB is a deadly disease
  – One in nine Californians with TB dies with their TB disease
• TB is a treatable disease
  – Long courses of treatment allow engagement of patient into healthy behaviors, linkage to care for other comorbidities
  – Treating TB infection will eliminate TB disease
• Drug resistant TB globally is steadily increasing
Span of TB Control Activities in San Francisco 2014

- 114 San Franciscans with TB Disease
- Over 400 San Franciscans with possible TB Disease
- 1,100 Contacts to TB Cases
- 78,000 San Franciscans with TB Infection
- 850,000 San Franciscans
How far are we from elimination?

TB elimination: <1 case per million

**United States, 2013**
- 30 cases per million (all)
- 12 cases per million (U.S. born)
- 156 cases per million (foreign-born)

**San Francisco, 2013**
- 1360 cases per million (all)
- 23 cases per million (U.S. born)
- 3510 cases per million (foreign-born)
What are the benefits of elimination?

- Eliminate morbidity and mortality from TB
- Eliminate exposure to TB and possible infection
- Eliminate basis of ongoing TB testing in low risk populations
  - Health care workers
  - State prison inmates
  - School children
  - K-12 employees, volunteers
  - Preschool/daycare employees
  - Other city agencies (police, fire)
TB Cases in San Francisco: stable but no progress toward elimination

334 Cases

Cases and Case Rates in SF 1990-2014

114 Cases
How do we get to TB elimination faster?

Status quo: no end in sight

Increase TB infection treatment bends the curve toward elimination

National strategy for TB elimination: Increase completion of treatment for TB infection by four fold over the next 3-5 years.

Hill et al., Epidemiol Infect, 2012
Funding for SF TB program has challenged progress toward elimination
TB Clinic/Control still sees active TB cases, suspects, and contacts

Uncomplicated: normal chest x ray, no adherence or toxicity risk, children and young adults

Complicated: abnormal chest x ray, adherence or toxicity risk, immunocompromised

Primary Care Clinics evaluate and treat uncomplicated TB infection

TB Clinic/Control sees complicated TB infection

Refer
TB clinic referrals have not seen a decrease in finding cases since reducing services.
Finding SF TB cases is a shared activity between SFDPH and the private sector.

- 68% hospital/private provider referral
- 24% community clinic screening
- 4% immigration screening
- 4% contact investigation
Patients with Diabetes and Use Tobacco and have TB infection are at increased risk of progressing to TB disease.
Setting a standard for primary care: The TB infection treatment continuum for mandated immigration screening

- 81% in 2012 vs. 62% in 2013

![Bar chart showing progression through TB treatment stages:Notifications Received, Evaluation Initiated, Fully Evaluated, TB2/TB4, Eligible for LTBI Tx, Tx Started, Tx Completed. The chart highlights a decrease in the progression through the stages from 2012 to 2013.]
Opportunities for TB elimination in SF – why now?

- Electronic health record can be built to support risk assessment, and then track testing, diagnosis, and treatment.
- Improved diagnostics for TB infection (interferon gamma release assays – blood tests).
- New rifamycin TB infection treatment – 3-4 months vs. 6-9 months, less toxicity, better completion rates.
- Medical homes have infrastructure for chronic care monitoring of patients to limit toxicity and support treatment completion.
- Exploring consultative support via teleconferencing to build limited experience with TB infection diagnosis and treatment.
Eliminating TB in SF: Challenges

• The public is not aware that TB is a health concern in the U.S.
• TB preventive care is cost shared by the patient (co-pays for blood work, radiology, clinic visits)
• Capitated provider reimbursement does not include TB preventive care
• Providers are at different comfort levels with diagnosis and treatment of TB
• Decreasing federal support
• Increasing costs of workforce
Summary

• The SF TB program is controlling the spread of TB in the city and is a good investment for public safety.
• There has been little progress towards eliminating TB in the city in the last decade.
• A TB elimination campaign is under way at the state and national level and San Francisco is a key contributor to the discussion.
• The campaign is in the planning phase and goal is to transform the diagnosis and treatment of TB infection in non public health primary care settings.
• Taking on TB elimination is the way to reduce the impact of TB as a health threat SF going forward.
ACKNOWLEDGEMENTS

• Laurel Bristow, MSc, TB Prevention and Control Program Epidemiologist
• SF TB program Staff
• Population Health Division
# California Tuberculosis (TB) Risk Assessment

A TB screening tool to be administered by licensed healthcare providers

## Risk Factor

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Testing / Treatment Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Past history of chest x-ray with fibrotic changes or other findings suggestive of inactive or old TB disease treatment.</td>
<td>In addition to TB testing, evaluate for active TB disease.&quot;**</td>
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<tr>
<td>☐ HIV infection</td>
<td></td>
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<tr>
<td>☐ Current or planned immunosuppression: Organ transplant recipient, treated with TNF-α antagonist (e.g., infliximab, etanercept, others), steroids (equivalent of prednisone &gt;15 mg/day for &gt;1 month), other immunosuppressive medication</td>
<td></td>
</tr>
<tr>
<td>☐ Close contact to someone with infectious TB disease within past two years</td>
<td>HIGH</td>
</tr>
<tr>
<td>☐ History of close contact to someone with infectious TB disease and has medical risk†</td>
<td></td>
</tr>
<tr>
<td>☐ Foreign-born person from high TB prevalence country and has medical risk†</td>
<td>Countries within Africa, Asia / Pacific, Eastern Europe incl. Russia, Latin America incl. Mexico</td>
</tr>
<tr>
<td>☐ Has stayed or worked in an urban homeless shelter and has medical risk†</td>
<td></td>
</tr>
<tr>
<td>☐ History of close contact to someone with infectious TB disease; no medical risk†</td>
<td></td>
</tr>
<tr>
<td>☐ Foreign-born person from high TB prevalence country; no medical risk†</td>
<td>Countries within Africa, Asia / Pacific, Eastern Europe incl. Russia, Latin America incl. Mexico</td>
</tr>
<tr>
<td>☐ Has stayed or worked in an urban homeless shelter; no medical risk†</td>
<td></td>
</tr>
<tr>
<td>☐ Traveled to or lived in high TB prevalence country for &gt;1 month and has medical risk†</td>
<td>Countries within Africa, Asia / Pacific, Eastern Europe incl. Russia, Latin America incl. Mexico</td>
</tr>
<tr>
<td>☐ Traveled to or lived in high TB prevalence country for &gt;1 month; no medical risk†</td>
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<tr>
<td>☐ Healthcare worker or resident/employee of congregate setting e.g., correctional institution, long-term care facility, drug treatment facility</td>
<td>LOW (Individualized decision to test)*</td>
</tr>
<tr>
<td>☐ No Risk Factors identified</td>
<td>NONE</td>
</tr>
</tbody>
</table>

† Medical Risks: Diabetes mellitus, end-stage renal disease, smoker within past one year, leukemia, lymphoma, silicosis, cancer of head or neck, intestinal bypass/gastrectomy, chronic malabsorption, body mass index ≤20.

* Persons may be tested on the basis of local guidance, epidemiology, and for regulatory reasons.
Ereferral: San Francisco Health Network and Consortium Clinics

San Francisco: VA SCAN-ECHO and SFDPH for HIV care