Attitudes Toward Managing Latent TB Infection in Primary Care

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- Nan Hu, M.Sc., Department of Biostatistics, University of Utah, School of Medicine

Main Objectives

- To determine TB knowledge, attitudes, beliefs, and practices of primary care clinicians who serve foreign-born populations at risk for TB
- To identify practice features that facilitate or obstruct the management of latent TB infection
- To determine if an educational intervention increases adherence to CDC recommendations

Study Sites

- 6 regions, 7 sites
  - Honolulu
  - Seattle
    - (FAPWA, HMC)
  - San Francisco
  - Orange County
  - Dallas-Fort Worth
  - Boston
Study Sites

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  - Honolulu
  - Seattle
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  - San Francisco
  - Orange County
  - Dallas-Fort Worth
  - Boston
Target Audiences

Clinicians serving
- Mexicans
- Filipinos
- Vietnamese
- Chinese

Eligibility Criteria

- Primary care providers: family practice, internal medicine, pediatrics, women’s healthcare
- > 25% of patients are foreign born
- > 3 years of clinical experience
- > 1 year experience at current practice site
- No employment with Public Health

Other Factors Preventing LTBI Testing and Treatment

- “TB Clinic rarely communicates with us.”
- “I don’t have a way to track PPDs, or if patients are compliant taking INH.”
- “Patients won’t take INH for 9 months.”
- “The guidelines are confusing, and constantly changing.”
Factors Preventing LTBI Testing and Treatment

“I have too many patients, and too little time to address this. I'll lose money.”

“Well the TB skin test, I didn’t routinely do on Medicare age people, unless they are going to nursing home. Because, there is no reimbursement for home-aide care for TB placement unless they have specific symptoms, if they have weight loss, and stuff like that, then we check it. But we cannot do it for just routine physical. Whereas other insurance, we can still do it as a routine physical, they reimburse; Medicare doesn’t reimburse…Medi-Cal, I don’t think they reimburse, that’s even worse than Medicare.”

San Francisco, Private Practice Physician

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Phase 2 – Methods

- 10-14 Primary care providers from each site
- A pre-intervention survey of 124 items
  - 30 demographic items
  - 15 epidemiological items
  - 15 definition, testing & treatment items
  - 56 attitude items
- 1 hour didactic intervention on latent TB management among the foreign born delivered by the regional TB control officer
- A post-intervention survey of 105 items delivered 2-4 weeks following the intervention

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Results: Demographics

- N = 80
- Age: 47.5 years, 11.1 standard deviation (S.D.)
- Gender: 39% female
- Age at Immigration: (N = 58) 24.7 years, 12.4 S.D.
- Country of Origin:
  - USA: 22
  - China: 14
  - Philippines: 8
  - Vietnam: 20
  - Taiwan: 3
  - Other: 13
### Results: Demographics (2)

**Job Title:**
- MD 57 (72.2%)
- DO 4 (5.1%)
- ARNP/RN 11 (14.0%)
- Other 7 (8.9%)

*Years in current position:* 17.43, 10.4 S.D.

### Results: Demographics (3)

**Practice Type:**
- **PRIVATE**
  - Solo/Group Practice 36 (46.8%)
- **PUBLIC** (community clinic or public hospital): 39 (50.6%)
- Other 2 (2.6%)

### Results: Demographics (4)

**Residency:**
- Internal Medicine 25 (40.3%)
- Pediatrics 9 (14.5%)
- Family Medicine 23 (37.1%)
- Other 5 (8.1%)
Results: Demographics (5)

<table>
<thead>
<tr>
<th>TB Training:</th>
<th>YES</th>
<th>43 (55.1%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Med School</td>
<td>13</td>
<td>(24.1%)</td>
</tr>
<tr>
<td>Residency</td>
<td>5</td>
<td>(9.3%)</td>
</tr>
<tr>
<td>CDC</td>
<td>3</td>
<td>(5.6%)</td>
</tr>
<tr>
<td>Cont. Ed</td>
<td>5</td>
<td>(9.3%)</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>(3.7%)</td>
</tr>
<tr>
<td>Multiple</td>
<td>15</td>
<td>(46.3%)</td>
</tr>
</tbody>
</table>

Results: Demographics (6)

- # Pts./8 hr day: 20.23, 5.09 Standard Error (S.E.)
- % Time in Pt. Care: 70.68%
- % Foreign Born Patients: 60.3%
- TSTs/month: 19.7, 17.7 S.E.
- % TST +: 28.3%
<table>
<thead>
<tr>
<th>Question Prompt</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude Rating</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>35h Patients don't want to take time for prevention</td>
<td>3.8</td>
<td>(3)</td>
<td>32.9</td>
<td>(26)</td>
<td>25.3</td>
</tr>
<tr>
<td>35c Patients don't want to pay for prevention</td>
<td>2.5</td>
<td>(2)</td>
<td>15.2</td>
<td>(12)</td>
<td>24.1</td>
</tr>
<tr>
<td>Patients' insurance type affects providers' ability to treat them</td>
<td>8.9</td>
<td>(7)</td>
<td>21.5</td>
<td>(17)</td>
<td>15.2</td>
</tr>
<tr>
<td>35f Providers worries about INH's effect on the liver</td>
<td>13.8</td>
<td>11</td>
<td>36.3</td>
<td>29</td>
<td>21.3</td>
</tr>
<tr>
<td>Pressure on providers to maintain high productivity</td>
<td>22.5</td>
<td>(18)</td>
<td>21.3</td>
<td>(17)</td>
<td>20.0</td>
</tr>
<tr>
<td>Prevents LTBI T&amp;T</td>
<td></td>
<td></td>
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<tr>
<td>LTBI management is the responsibility of the</td>
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<tr>
<td>33d PCP/clinic</td>
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<tr>
<td>33e TB &amp; LTBI should be taken care of by the government</td>
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</tr>
<tr>
<td>Communication from TB clinic to practice about</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>patients needs improvement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38a Recent erosion of TB clinic services signals TB management is no longer a priority</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38b PH system needs to increase awareness of TB among US immigrants from countries with endemic TB</td>
<td>1.3</td>
<td>(1)</td>
<td>2.5</td>
<td>(2)</td>
<td>5.0</td>
</tr>
<tr>
<td>Helpfulness Rating</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>36g Free PPD solution for practice</td>
<td>1.3</td>
<td>(1)</td>
<td>6.4</td>
<td>(5)</td>
<td>19.2</td>
</tr>
<tr>
<td>36h Free INH for patients</td>
<td>1.3</td>
<td>(1)</td>
<td>5.2</td>
<td>(4)</td>
<td>19.5</td>
</tr>
<tr>
<td>36i Contact person at TB clinic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formal tracking system that included LTBI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barrier Rating</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>32k Lack of system to track T&amp;T</td>
<td>7.5</td>
<td>(6)</td>
<td>25.0</td>
<td>(20)</td>
<td>13.8</td>
</tr>
<tr>
<td>32l BCG vaccine prevents accurate diagnosis</td>
<td>10.0</td>
<td>(8)</td>
<td>3.8</td>
<td>(3)</td>
<td>8.8</td>
</tr>
</tbody>
</table>

Table 2: Distribution of responses from 80 participants at baseline about 16 main questions of interest
<table>
<thead>
<tr>
<th>Attitude Rating (survey item #)</th>
<th>OR = (Private/Public)</th>
<th>95% CI</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients don’t want to take time for prevention (35h)</td>
<td>0.87</td>
<td>0.40, 1.87</td>
<td>0.716</td>
</tr>
<tr>
<td>Patients don’t want to pay for prevention (35c)</td>
<td>0.72</td>
<td>0.32, 1.66</td>
<td>0.447</td>
</tr>
<tr>
<td>Patients’ insurance type affects providers’ ability to treat them (35f)</td>
<td>1.18</td>
<td>0.52, 2.68</td>
<td>0.696</td>
</tr>
<tr>
<td>Providers worry about INH’s effect on the liver (33h)</td>
<td>2.67</td>
<td>1.15, 6.20</td>
<td>0.022</td>
</tr>
<tr>
<td>Pressure on providers to maintain high productivity prevents LTBI T&amp;T (33e)</td>
<td>1.76</td>
<td>0.78, 3.97</td>
<td>0.172</td>
</tr>
<tr>
<td>LTBI management is the responsibility of the PCP/clinic (33d)</td>
<td>1.50</td>
<td>0.64, 3.50</td>
<td>0.346</td>
</tr>
<tr>
<td>TB &amp; LTBI should be taken care of by the government (35d)</td>
<td>2.48</td>
<td>1.04, 5.93</td>
<td>0.041</td>
</tr>
<tr>
<td>Communication from TB clinic to practice about patients needs improvement (38a)</td>
<td>0.67</td>
<td>0.28, 1.62</td>
<td>0.379</td>
</tr>
<tr>
<td>Recent erosion of TB clinic services signals TB management is no longer a priority (38g)</td>
<td>1.22</td>
<td>0.53, 2.80</td>
<td>0.643</td>
</tr>
<tr>
<td>PH system needs to increase awareness of TB among US immigrants from countries with endemic TB (33a)</td>
<td>1.71</td>
<td>0.70, 4.22</td>
<td>0.241</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Helpfulness Rating</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Free PPD solution for practice (36g)</td>
<td>6.01</td>
<td>1.76, 20.49</td>
<td>0.004</td>
</tr>
<tr>
<td>Free INH for patients (36h)</td>
<td>3.98</td>
<td>1.26, 12.60</td>
<td>0.019</td>
</tr>
<tr>
<td>Contact person at TB clinic to help manage LTBI (36i)</td>
<td>2.02</td>
<td>0.72, 6.09</td>
<td>0.179</td>
</tr>
<tr>
<td>Formal tracking system that includes LTBI management (36m)</td>
<td>1.78</td>
<td>0.66, 4.83</td>
<td>0.254</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Barrier Rating</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of system to track T&amp;T (32k)</td>
<td>0.74</td>
<td>0.31, 1.73</td>
<td>0.483</td>
</tr>
<tr>
<td>BCG vaccine prevents accurate diagnosis (32l)</td>
<td>3.15</td>
<td>1.18, 8.41</td>
<td>0.022</td>
</tr>
</tbody>
</table>
Engaging the Private Sector in Tuberculosis Prevention
January 25, 2012

Factors Preventing LTBI Testing and Treatment (2)

“TB is very rare so LTBI screening is not critical.”

“But, it’s pretty much in my opinion, a waste of money, because I might find 1 out of 200. I would have to screen 200 people before I would find one case. And, most patients would not...I would have to do it as a freebie, cause they’re not going to pay for that...it costs me about $5.00 for a test.”

Dallas, Private Practice Physician

Factors Preventing LTBI Testing and Treatment (3)

“I have too many patients, and too little time to address this. I’ll lose money.”

“Firstly, the BCG does muddy the water. Second, it depends on the age group. If they are already over 35 with a positive PPD, next is the chest x-ray. If they don’t have any symptoms or problems, do you do a PPD? Even if it’s positive you expect the chest (film) to return negative, you’re not going to do anything anyway. So, why do you want a PPD in the first place? And if you expect something in the chest x-ray, why don’t you do that in the first place? If they don’t have pulmonary symptoms and they are fine, you’re not going to preventatively treat them anyway, then why are you going through the procedure if you’re not going to do anything different? I think that’s wasting money, OK?”

San Francisco, Private Practice Physician
Factors Preventing LTBI Testing and Treatment (4)

“Q: …If you didn’t have to do a two step process but a single blood test, what would you think of that?”

“A: Well, that’s a great improvement of course. But it still boils down to what is the significance? How does it affect your management of the old 89 year old lady who’s asymptomatic, (with a negative) chest x-ray?

San Francisco, Private Practice Physician

Conclusions

- There are many features of primary care that impact screening and management of LTBI beyond the knowledge of guidelines
- Practice size, type, and the consequent resources contribute to a physician’s capacity to track and manage LTBI in a busy primary care practice
- Private practice physicians are less familiar with current guidelines for treatment, and more concerned about insurance, and reimbursement for the care they provide than salaried public sector clinicians
- Educational interventions can improve knowledge of guidelines, but may have little impact on attitudes toward their implementation
- Future interventions should consider different approaches to different practice setting and address priority concerns beyond education