Evaluation and Treatment of Tuberculosis Contacts in a Large Outbreak Investigation Among Homeless Persons in Los Angeles County, California

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Overall Targeted Testing Results

<table>
<thead>
<tr>
<th>Tier</th>
<th>Evaluated (n)</th>
<th>LTBI (n (%))</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>258</td>
<td>81 (31%)</td>
</tr>
<tr>
<td>II</td>
<td>117</td>
<td>20 (17%)</td>
</tr>
<tr>
<td>III</td>
<td>30</td>
<td>5 (17%)</td>
</tr>
<tr>
<td>IV</td>
<td>275</td>
<td>50 (18%)</td>
</tr>
<tr>
<td>Total</td>
<td>680</td>
<td>156</td>
</tr>
</tbody>
</table>

Targeted Testing Results from Screening Event: May 21, 2013, Shelter X (n=12 cases stayed during infectious period)

<table>
<thead>
<tr>
<th>Tier</th>
<th>Evaluated (n)</th>
<th>LTBI (n (%))</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>51</td>
<td>24 (47%)</td>
</tr>
<tr>
<td>II</td>
<td>14</td>
<td>1 (7%)</td>
</tr>
<tr>
<td>III</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>IV</td>
<td>32</td>
<td>5 (16%)</td>
</tr>
<tr>
<td>Total</td>
<td>97</td>
<td>30</td>
</tr>
</tbody>
</table>

**BACKGROUND:**

- Since 2007, 108 genotypically-linked cases (G11610/PCR08263) of TB have been reported in LAC, with 88 of these cases reported to be homeless.
- In 2013, the LAC DPH, with assistance from the California Department of Public Health (CDPH-TCB) and the CDC, began a location-based outbreak investigation to identify high risk contacts. LAC DPH evaluated these contacts and provided 3HP preventive therapy for those with Latent Tuberculosis Infection (LTBI).

**Objective:** To evaluate CDC-Epi Aid prioritization methods

**Descriptive epidemiology: homeless outbreak cases (n=88)**

Demographics Percentage
- **Male** 99%
- **Race/Ethnicity**
  - Hispanic 45%
  - Black 40%
  - White 13%
  - Asian 2%
- **Age Group**
  - 15-34 5%
  - 35-44 35%
  - 45-54 30%
  - 55-64 22%
  - >65 8%

**METHODS:**

**CASE REVIEW:**
- Case inclusion criteria (n=45)
  - Genotype: G11610 (n=44), or homeless and epi-linked without genotype (n=1)

Data sources:
- TBCP data processing charts and electronic registry
- Community health center (CHS) patient charts
- Patient interviews
- Jail patient charts

**CONTACT IDENTIFICATION & PRIORITIZATION:**
- Shelter registration information obtained from:
  - LAHSA (Los Angeles Homeless Services Authority)
  - 2 additional shelters (outside of LAHSA)
  - Calculated cavity+smeared positive case-night
  - Contact list included names and dates of birth

**RESULTS:**

**Objective Results:**
- As of May 2014, 680 contacts were evaluated, and 156 were diagnosed with LTBI.
- Of the 107 patients (69%) recommended for LTBI treatment, 50 contacts (47%) initiated treatment, and 29 contacts (58%) completed treatment (28 completed the 3HP 12-week DOT regimen with incentives, and 1 patient completed 6 months of INH).*
- Nine contacts self-presented with TB disease, with 7 cases in Tier 1 (case rate=2.7%) and 2 cases in Tiers 2-4 (case rate=0.5%).

- Many patients still on treatment

**Conclusions:**
- Using shelter registration data to calculate cavity/smeared-positive case nights can help inform contact prioritization, but this method may perform better at certain transmission sites.
- Efforts to identify, prioritize, and evaluate contacts in the homeless population, combined with 3HP therapy and an incentives program, resulted in the successful treatment of LTBI patients in this hard-to-reach population.

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