ABSTRACT
Background: Refugees are disproportionately affected by latent tuberculosis infection (LTBI) and active tuberculosis (TB) compared to the general US population. More than 50% of TB cases in the US occur in foreign-born persons. In addition, approximately 80% of TB cases in the US are a result of reactivation of LTBI. Treatment of LTBI is effective to prevent and control TB. Unfortunately, LTBI treatment completion rates in the foreign-born are less than 50%. Methods: After conducting a retrospective chart review to establish baseline rates of treatment completion in our LTBI refugee patients, we implemented a model of prospective chart review, initial face-to-face counseling, phone follow up and community monitoring with pharmacy serving as a central point of contact for model coordination and execution. Results: Our LTBI treatment completion rate is now 64% (23 out of 36 LTBI refugee patients), representing an almost 2-fold improvement over our baseline rate of 33%.

INTRODUCTION
The majority of cases (80%) of active tuberculosis (TB) cases in the United States result from reactivation of latent TB infection (LTBI).1 In addition, greater than 50% of active TB cases in the United States occur in foreign-born individuals.2 Approximately 80,000 refugees resettled in the U.S. annually and as such cities with large refugee populations can have higher than national average rates of TB.3 While the diagnosis and treatment of LTBI is an effective method for reducing cases of active TB, the national rate of LTBI completion among foreign-born in the U.S. is less than 50%.4

To establish baseline rates of LTBI incidence and treatment completion for our refugee population, the Jefferson Center for Refugee Health conducted a retrospective chart review for the time period of 2007-2011. We found that 23.1% of incoming patients to the center had LTBI and among patients started on treatment 33.1% completed therapy.

METHODS

1. Initial Refugee Visit (Medicine/Pharmacy/Nursing/Social Work)

Follow-Up Refugee Visit (Medicine/Pharmacy/Nursing/Social Work)

LTBI Treatment Initiated

Phone Call

2 weeks after Visit #1 Follow up phone call to patient to assess tolerance, symptoms, adherence, answer any questions patient may have

Beginning of month 2 of treatment Pharmacy contacts local pharmacy to confirm refills: If no refill noted, documented in tracking sheet, then outbound call to patient to assess

Beginning of month 3 of treatment Pharmacy repeats procedure described above

Beginning of month 4 of treatment Pharmacy repeats procedure described above

End of month 4 of treatment Pharmacy contacts local pharmacy to confirm refills: If no refill noted, documented in tracking sheet, then outbound call to patient to assess

How To Take It

Contraindication

• Rifampin (Rif) 10mg/kg/day (max 600mg QD) x 4 mos; completion=120 doses within 6 mos

• Isoniazid (INH) 300mg/day (max 10mg/kg) x 6 mos; completion=6 mos

• Ethambutol (ETB) 15mg/kg/day x 12 mos; completion=120 doses within 12 mos

Phone Call

Face-to-face Patient Education (Pharmacy/Medicine)

• Power point presentation of how to have a prescription filled in the U.S.

• Importance of taking medication, what to expect, what to call the HCP

• Reinforce education with written material in native language or pictorial material as appropriate (will depend on literacy)

Phone Call

Visit # Description Process

1

Reassessment (Referral Agency)

Prospective Chart Review (Medicine/Pharmacy)

Quantiferon-TB Gold, CXR

Nursing/Social Work

Quantiferon-TB Gold Results

• IFN gamma positivity: LTBI diagnosis. Patient to begin therapy

• IFN gamma non-relevant: no LTBI diagnosis. Patient to be reassessed

• IFN gamma non-positive: LTBI diagnosis. Patient to begin therapy

• CXR: if patient has clear CXR then LTBI treatment to begin at 1 mo f/u visit

• CXR: if patient has abnormal CXR then LTBI treatment to begin at 1 mo f/u visit

• If CXR normal: Sputum sample

2

Quantiferon-TB Gold Results

• IFN Quant: no further f/u; If indeterminate PPD placed (running visit for read)

• IFN Quant: CXR ordered

• IFN Quant; CXR ordered: patient to begin LTBI treatment at 1 mo f/u visit

• IFN Quant; CXR ordered: patient to begin LTBI treatment at 1 mo f/u visit (scheduled by social work)

• IF Quant Spumum sample: refer to Phila Dept of Health (Active TB)

RESULTS

For the time period 9/1/2012 thru 6/7/2013

• Total number of new patient visits: 215

<table>
<thead>
<tr>
<th>Gender</th>
<th>Age (mean, years)</th>
<th>Country of Origin (n (%))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female: 14 (61)</td>
<td>41</td>
<td>Bhutan: 16 (70)</td>
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<tr>
<td>Male: 9 (39)</td>
<td></td>
<td>Iraq: 4 (17)</td>
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<td></td>
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<td>Ethiopia: 1 (4)</td>
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<td></td>
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<td>Myanmar: 2 (9)</td>
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</tbody>
</table>

CONCLUSION
Our model increased treatment completion rates significantly in our refugee patients. A key limitation to the model was the low success rate of reaching patients via outbound calls placed after treatment initiation; reasons for this are multifactorial and include patient relocation as well patients’ varied work schedules. However, we found using pharmacy refill history as a surrogate marker of completion an efficient way to capture treatment completion rates.

REFERENCES

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