Efficacy of LTBI Treatment Model Among Newly Arriving Refugees

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BACKGROUND

Refugees are evaluated for active tuberculosis (TB) disease and treated prior to their departure to the United States (U.S.). However, Latent Tuberculosis Infection (LTBI) is prevalent among newly arriving refugees to San Diego County's Refugee Health Assessment Program (RHAP). The RHAP program provides culturally and linguistically appropriate comprehensive health assessments, including screening for TB infection to newly arrived refugees, asylees, victims of trafficking, those with Special Immigrant Visas (SIVs), and other eligible entrants. Between October 1, 2016 and September 30, 2017, there were 1,787 refugees from 42 countries who resettled in San Diego and participated in the RHAP program.

Prior to this intervention, LTBI treatment initiation was low for new refugee arrivals to San Diego. After being diagnosed with LTBI at their RHAP evaluation, patients often did not attend their initial medical evaluation at regional public health centers where they were referred for LTBI treatment. Additionally treatment completion was lower than anticipated.

To improve treatment uptake and adherence, an Intensive Case Management (ICM) model to address LTBI among refugees was initiated in April 2017. With the ICM model, LTBI medical evaluation is held onsite at the RHAP clinic. Patient information is collected as part of the TB intake and risk assessment, and comprehensive TB education is delivered by the LTBI nurse case manager (LTBI-RN). At the same time patients receive a chest x-ray and physician evaluation. Transportation is also provided.

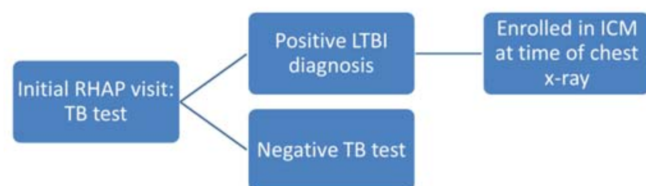
Patients are seen monthly by the LTBI-RN who provides medication refills, TB education, addresses side effects, and reinforces treatment adherence. LTBI-RN visits are provided at County clinics close to patients' residences, or at their homes or work when transportation is a barrier to adherence.

OBJECTIVES

- Evaluate the efficacy of an LTBI-ICM model in increasing LTBI treatment initiation and completion among newly arrived refugees.
- Identify barriers to LTBI treatment among refugees.

METHODS

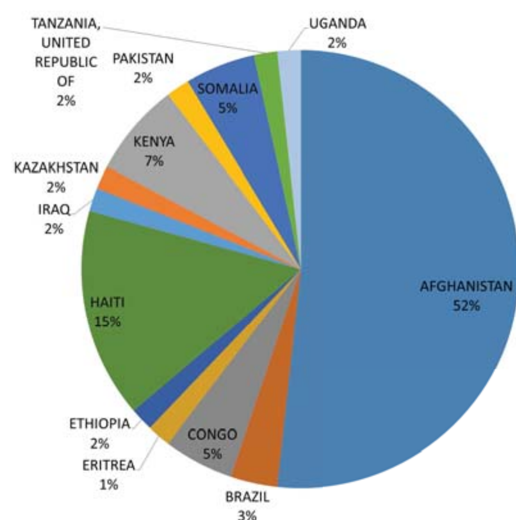
Clinical data for refugees, arriving to the U.S. from April-September 2017, who were under 50 years of age, diagnosed with LTBI, and who completed the RHAP screening, were gathered from patient charts and compared prior to and after the LTBI ICM treatment model was introduced. Data were evaluated for efficacy in improving treatment.



RESULTS

There were 407 newly arriving refugees (<50 years of age) to San Diego County who completed the RHAP screening during the intervention period, between April 1, 2017 and September 30, 2017. Those arrivals who were diagnosed as TB Class II, or LTBI, were SIVs (n=32;54.2%), refugees (n=15;25.4%), those with temporary protected status (n=11;18.6%), and an asylee (n=1;1.7%) who were born in thirteen countries. Over half of those newly diagnosed with LTBI were SIVs from Afghanistan.

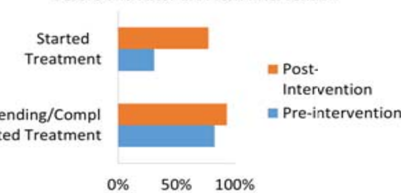
Figure 1: LTBI By County of Birth



TREATMENT STARTS AND COMPLETION

During the intervention period, fifty-nine refugees were diagnosed with LTBI (14.3%). Of those who were diagnosed, forty-five (76.3%) started treatment: 6 with their PCP and 39 in the LTBI ICM program. Patients participating in the LTBI ICM program were evaluated by the LTBI physician and 4-months of rifampicin was routinely prescribed. Those who did not agree to treatment were referred to their primary care physician for follow-up. Of those who started ICM (n=45), 30 (66.7%) completed, 6 (13.3%) are in treatment, 6 transferred out of the program with 2 completing (4.4%) and 4 pending treatment completion (8.9%), 2 are on medical hold (4.4%) and 1 was not able to complete for medical reasons (2.2%). Three patients were lost to follow up (5.2%), 6 refused (10.3%), and three patients moved and were provided interjurisdictional referrals (5.2%). In FY 15-16 treatment initiation was 31.0% and completion 82.9% of those who started treatment.

Figure 2: Comparison of Treatment Starts and Pending/Complete Before and After LTBI ICM Intervention



RESULTS

Table 1: LTBI Diagnosis and Comparison Pre and Post LTBI ICM Intervention

	Pre-Intervention (n=2102)	Post-Intervention (n=407)
LTBI diagnosis	245 (11.7%)	58 (14.3%)
Treatment initiated	76 (31.0%)	45 (76.3%)
Treatment completed or on treatment	63 (82.9%)	42 (93.3%)
Completed LTBI treatment	63 (82.9%)	30 (66.7%)
On treatment	-	6 (13.3%)
Out of program, on treatment	-	4 (8.9%)
Out of program, completed	-	2 (4.4%)
Lost to follow up	8 (10.5%)	3 (5.2%)
Discontinued due to side effects	-	1 (2.2%)
Moved	2 (2.6%)	3 (5.2%)
Other	3 (3.9%)	
Refused	-	6 (10.3%)

BARRIERS IDENTIFIED AND ADJUSTMENTS TO IMPROVE LTBI TREATMENT STARTS AND COMPLETION

An objective of the intervention was to identify barriers that could affect treatment initiation and completion. Several barriers were anticipated in advance of the intervention, such as language and cultural barriers. Other barriers were identified during the model implementation, such as the rigorous schedule of activities necessary to qualify for resettlement benefits. Adjustments were incorporated into the model to mitigate barriers for treatment initiation and completion.

Table 2: Barriers and Improvements for LTBI Treatment Starts and Completion

BARRIERS IDENTIFIED	ADJUSTMENTS TO IMPROVE LTBI TREATMENT STARTS AND COMPLETIONS
Refugees had limited knowledge of tuberculosis and LTBI	•In-depth TB/LTBI education is provided at initial visit •LTBI education reinforced at LTBI–RN follow up visits •Questions are encouraged and addressed
Missed appointments and not attending appointments on time	• Appointments scheduled in blocks of time (morning and afternoon) • Flexible scheduling and rescheduling • Appointment reminders in their language • Home drop-in when patient is non-adherent and not available by phone
Language	• Phone interpretation used by the LTBI-RN case manager • Preferential utilization of skilled interpreters who demonstrated good patient rapport and acted as cultural brokers for the LTBI-RN
Resettlement activities necessary to qualify for benefits was prioritized	• Combined LTBI appointment with x-ray appointment to reduce multiple appointments • Offered flexible appointment times for treatment starts and follow up
Transportation barriers	• Provided maps and instructions about using public transportation • Scheduled appointments in regional health centers close to patients residence • Provided in-home appointments when transportation was a barrier

RESULTS

Lack of familiarity with health system	• Initial appointment is held at the site of the refugee health screening where patients are familiar with staff and location • Follow up appointments are made at San Diego County regional health centers with the RHAP LTBI-RN case manager to introduce patients to local health services • LTBI –RN case manager and LTBI physician are points of contact throughout treatment to provide continuity with the patient
Patient declines treatment prior to LTBI education	• All LTBI positive patients must be referred after the initial refugee health screening to the LTBI-RN case manager for education about TB transmission, risks and benefits of treatment
Change in locating information or phone out of service	• Continue to contact; many phone out of service messages are the result of late payments and patients are able to be reached at later time • Home visit when not able to contact
Patient perception of BCG and false positive diagnosis	• Patients are educated that QFT tests are generally not affected by prior BCG vaccinations

CONCLUSIONS

- In-depth education about the etiology of TB and LTBI, incorporating the individual and cultural context of risk and transmission was found to be a primary factor in increased LTBI treatment starts for newly arriving refugees .
- Providing convenient and flexible locations and hours for medical evaluation and follow up visits may be factors in improved treatment uptake and adherence.
- Use of phone interpreting service provided non-English speaking patients the ability to communicate in-person during medical appointment or by phone as needed with LTBI-RN case manager, and allowed staff to address barriers to treatment.

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