QUALITY IMPROVEMENT STRATEGIES FOR LTBI SCREENING, TESTING, AND TREATMENT IN AA AND NH/PI-SERVING HEALTH CENTERS: EHR TEMPLATE DEVELOPMENT LEARNING COLLABORATIVE

JUNE 2022
Asian/Asian American (A/AA) and Native Hawaiian/Pacific Islander (NH/PI) communities continue to be impacted by tuberculosis (TB) at a greater rate compared to other racial and ethnic groups. Countries with the highest TB burden among non-U.S.-born Asians and Pacific Islanders include the Philippines, India, Vietnam, China, Myanmar, and the Marshall Islands (CDC, 2022).

In 2021, more than 7,860 cases of TB were reported in the United States (Tuberculosis — United States, 2021 | MMWR). Native Hawaiian/Pacific Islander populations have the highest TB incidence rate of 19.0 cases per 100,000 persons, and Asian populations have the second highest TB incidence rate of 14.4 cases per 100,000 persons. Incidence rates vary widely when A/AA and NH/PI subgroups are disaggregated. To address these TB incidence inequalities, the TB Elimination Alliance aims to conduct outreach to underserved A/AA and NH/PI communities most affected by TB; increase awareness and understanding of culturally and linguistically appropriate latent TB infection (LTBI) and TB screening, testing, and treatment strategies; share resources and best practices among providers; and develop partnerships to scale existing initiatives.
The Uniform Data System does not report on LTBI, and TB remains a clinical priority among health centers who serve the A/AA and NH/PI populations. To prioritize LTBI and TB disease management, AAPCHO and the TB Elimination Alliance organized a second online Learning Collaborative in February 2022 for interdisciplinary healthcare providers and administrators from health centers, community-based organizations, and public health departments to explore quality improvement strategies for LTBI screening, testing, and treatment on electronic health record (EHR) template development.

The Learning Collaborative goals included the development EHR templates, education on the 12-dose regimen, guidance on TB as a national clinical quality measure, and training for clinical and enabling services providers who focus on LTBI screening, testing, and treatment.

This Learning Collaborative was supported by the Centers for Disease Control & Prevention (CDC) and the Health Resources & Services Administration (HRSA); and modeled after quality improvement initiatives created by TB Free California. AAPCHO and the TB Elimination Alliance would like to recognize the following Subject Matter Experts:

- **Amy Tang, MD, Director of Immigrant Health**, North East Medical Services (California)
- **Devan Jaganath, MD, MPH, Assistant Professor**, UCSF Division of Pediatric Infectious Diseases and Global Health (California)
- **Janna Steele, Pharm.D, LTBI Project Manager**, Colorado Alliance for Health Equity and Practice (Colorado)
- **Kara Green MSN, APRN, FNP-BC, Director of Clinical Services and Quality Improvement**, HOPE Clinic (Texas)
- **Y-Uyen Le Nguyen, MD, Director of the Hepatitis B Program**, Charles B. Wang Community Health Center (New York)
The Learning Collaborative focused on the following goals:

- **Challenges and barriers around EHR modification and template development**
- **Identify tools to understand and implement EHR templates**
- **Develop a roadmap for EHR template development processes**
- **Learn from Subject Matter Experts - challenges, best practices, and peer-to-peer learning**

The Learning Collaborative provided educational resources on the following:

- Quality Improvement Tools (Page 5)
  - CDC Strategy for Addressing LTBI
- Cause and Effect Diagrams (Page 6)
  - Root Cause Analysis
  - Fishbone Diagram

Health centers, community-based organizations, and public health departments are encouraged to utilize these resources to adopt continuous quality improvement strategies that can result in improved processes for LTBI screening, testing, and treatment on EHR template development.
In order to provide quality care for persons with LTBI, it is necessary to understand the complex, multi-staged patient journey known as the LTBI cascade of care (Hannah & Dick, 2020). The LTBI cascade of care represents eight distinct steps from initial tuberculosis screening through to treatment for LTBI.

Source: IHS.gov
CAUSE AND EFFECT DIAGRAMS

ROOT CAUSE ANALYSIS - THE CONCEPT

Source: ThinkReliability, 2018

FISHBONE DIAGRAM

Source: AIDS Education & Training Centers, 2007
CASE STUDIES: FISHBONE DIAGRAMS

The Learning Collaborative consisted of a cohort of healthcare providers and administrators from health centers, community-based organizations, and public health departments. The following are fishbone diagrams and SMART solutions developed by the cohort members.

Case Study 1

Lack of oversight

Providers do not understand impact and purpose of monthly visits
Lack of time on the part of the HCPs, whether public health or private practice

Pts do not believe diagnosis

Patients believe they are protected by BCG vaccine
Distrust in western medicine (healthcare system)

Poor completion rates for TBI

Historically been handled by PH
Lack of training and education provided to HCPs in private clinics settings
HCPs lacking comfort and knowledge

Lack of oversight after starting meds
Patients do not report, so provider cannot intervene
Side effects/adverse reactions

Case Study 2

1. Not enough advertisement
2. Organizers not on premises soon enough
3. Staff not able to retain difficult or uninterested patients
4. Patient’s proficiency level is too low, cannot read and write.

[Too few patients at outreach event]
1. Prepare flyers 3-4 weeks ahead, send to designated venue
2. Organizers to come early, well-equipped with survey materials, poster boards, etc.
3. Train staff to be persistent, explain in lay language, ask open questions
4. Use pictures and objects to engage the patient.
CASE STUDIES: FISHBONE DIAGRAMS

Case Study 3

Lack of Understanding
- Unclear association with previous BCG vaccination, LTBI exposure, and previous “lung treatment” from foreign country
- Active TB versus LTBI

Social Stigma
- Stigma associated with being targeted for ethnicity “Asian” with respiratory illness in the wake of COVID-19 pandemic
- Fear about being unable to work or go to school with “LTBI” in their problem list/medical chart and immigration w “previously clear CXR”

Financial Barriers
- Lack of coverage or high lab cost with Quant-Gold or PPD placement
- High Deductible for Office Visit with Provider for initial and follow up
- High Co-Pay for LTBI Treatment Rx

Incomplete LTBI Treatment or Lower Percentage of completed LTBI Treatment

Lack of Support

Case Study 4

Patient Barriers
- Eligible patients unaware of own risk

Provider Barriers
- Provider has limited time with patient to recommend testing

System Barriers
- CXR not offered onsite
- Shorter regimens not available at clinic
- Clinic offers TST instead of IGRA

Cost Barriers
- Uninsured patients
- Patient copays
- High cost of IGRA for clinic

Problem: Poor completion of treatment for LTBI
- Patients not engaged in care
- Eligible patients not tested or tested with TST
- Patients who test positive not offered short regimen treatment
- Patients offered treatment do not initiate treatment
- Patients who initiate treatment do not complete
Case Study 5

Insufficient staffing
- Lack of capacity to perform outreach for follow up to patients or providers
- High influx of incoming B status adjusters
- Incomplete evaluation for ruling out TB or LTBI diagnosis
- No follow up to treatment initiation/completion
- Provider unknown of evaluation/reporting steps

Testing/ LTBI treatment stigma
- Cost of testing and treatment
- Patients may think they are not "sick" to treat LTBI
- Provider to patient communication may be unclear or misinterpreted
- There may be a misunderstanding of importance to be evaluated before adjusting status
- Lack of patient education

Incoming arrivals (B notifications) or status adjusters may not be evaluated in a timely manner.
Class Bs or status adjusters choose to not take LTBI treatment, if diagnosed.

Case Study 6

EHR
- No uniform place to document tx completion
- There is not a designated staff member that is responsible for documenting tx completion

Self administered regimens
- Verbal report of LTBI tx completion
- Patients are not regularly scheduled to flu after completion of LTBI tx, therefore it’s difficult to track completion

Staff

Patient follow-up

Difficulty Tracking completion of TB treatment completion
**Case Study 1**

<table>
<thead>
<tr>
<th>Main Cause</th>
<th>Specific</th>
<th>Measurable</th>
<th>Attainable/Achievable</th>
<th>Relevant (Yes/No)</th>
<th>Time Bound</th>
</tr>
</thead>
</table>
| Lack of Understanding       | Have flyers about TB and LTBI readily available in the clinic to handout to patients. Have posters available in the exam room and direct phone line to answer questions about LTBI and TB. | + Consideration of survey on baseline understanding of TB and LTBI  
+ Observe and consider measuring of an increase in office visits about LTBI or TB concerns or in telephone calls patients asking about LTBI treatments (in person or phone) | Yes                   | Yes               | No         |
| Social Stigma               | Hold LTBI and TB community discussion sessions and listen to the target patient’s concern. Have poster/flyers readily available in the clinic for patients with direct phone line to answer questions about LTBI and TB and treatments. | + Consider of pre and post discussion survey regarding stigma  
+ Consider dedicated Pharmacy/RN line for LTBI/TB information including treatment options  
+ Observe and document if there is an increase in patients asking about LTBI treatments (in person or phone) or increase in office visits about LTBI or TB concerns. | Yes                   | Yes               | No         |
| Financial Barriers          | Work with the Billing Department to understand the estimated cost for each scenario plan to provide for patient reference. Have the phone lines for financial support resources readily available to provide to patient. | + Utilization of billing reference for transparency around cost for medication and labs  
+ Consideration of grant/funding for patients who are unable to financially pay for LTBI tx  
+ Consider measurement of an increase in patients asking about LTBI treatments (in person or phone) after the estimated cost share out. | Yes                   | Yes               | No         |
| Lack of Support for Providers | Create specific LTBI and TB patients workflow including EHR template to assist with documentation and tracking during office visits. Create a set of questionnaire for Pharmacy to follow up with patients on their treatment progress when patients call or walk in for medication/treatment refill. | + Consider reports on Provider’s usage of templates to see if there’s an increase in LTBI and TB treatment documentation.  
+ Monitor patient’s treatment progress through Pharmacy’s questionaire answers and see if the numbers of patients we are able to attain information from has increased as compared to before (when we did not have our Pharmacy following up with patients). | Yes                   | Yes               | No         |

**Case Study 2**

<table>
<thead>
<tr>
<th>Main Cause</th>
<th>Specific</th>
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<th>Attainable/Achievable</th>
<th>Relevant (Yes/No)</th>
<th>Time Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chest x-ray is negative</td>
<td>X-ray neg report adds a EMR* message about LTBI treatment recommendation by CDC</td>
<td>Follow-up to see whether physician recommended LTBI treatment for patient</td>
<td>yes</td>
<td>yes</td>
<td>1 year</td>
</tr>
<tr>
<td>LTBI treatment recommendation in physician journals (Primary care, Internal medicine, etc.)</td>
<td>Count number of articles by discipline published in journals.</td>
<td></td>
<td>yes</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>Provider information about shortened treatment regimens, reassurances about treatment regimen</td>
<td>Possibly a survey of whether physicians are acting on the LTBI CDC treatment recommendation at AMA convention or in journals</td>
<td></td>
<td>yes</td>
<td>yes</td>
<td></td>
</tr>
</tbody>
</table>

*Electronic Medical Records (EMR) is used interchangeably with EHR
RECOMMENDATIONS

Health centers, community-based organizations, and public health departments are encouraged to pursue quality improvement strategies to systematically address key barriers and solutions for LTBI and TB EHR template development. With a continuous quality improvement framework, providers will be able to strengthen their LTBI Care Cascade to increase screening, testing, and treatment for vulnerable A/AA and NH/PI communities disproportionately impacted by LTBI and TB.

For more information about the TB Elimination Alliance and future training opportunities, visit [https://tbeliminationalliance.org/](https://tbeliminationalliance.org/).

DISCLAIMER

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