Scaling up latent TB infection testing and treatment in a community health center

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Massachusetts Department of Public Health
CDC Cooperative Agreement NU52PS910159
March, 2019

Objectives

• Describe the TB test and treat model implemented by Lynn Community Health Center and consider applicability of this approach to improve patient outcomes in their setting

• Describe the Lynn Community Health Center latent TB cascade of care preliminary findings and consider applicability of this approach for assessing LTBI care gaps in their setting for improving patient outcomes
MASSACHUSETTS CONTEXT

Pre-Demonstration Project

Partnerships for public health

*MDPH relies on active partnerships and supports access to public health services:*

- Clinical services (e.g., TB) at hospitals
- Integrated prevention and care at Community Health Centers (CHCs) (e.g., HIV, HCV, STI)
- Community engagement (Mass in Motion, Prevention and Wellness Trust Fund)
- Providing guidance, technical assistance, etc. to support public health objectives
Health care access

• Health care reform implemented in Massachusetts in 2006
  ➢ Focus on primary care, Patient-Centered Medical Home

Engaging Chief Medical Officer (CHCs) for TB

• Outreach to CHCs providing refugee health assessments and HIV care to gauge interest in TB
• Conducted TB Capacity Assessment (2015)
  ➢ Interviews with CMOs of 16 CHCs
  ➢ Findings
    ▪ Knowledge of TB epidemiology limited
    ▪ Access to TB experts needed
    ▪ CHC adherence support systems existed – not intuitive that these could be deployed/adapted for TB
    ▪ Staff training and supports needed
THE DEMONSTRATION PROJECT

September 30, 2016 – September 29, 2019

Ambitious targets outlined by CDC

• Three-year time frame
• Test 2,500 persons/year
  ➢ High-risk population: 20% latent TB infection prevalence
  ➢ Identify ~500 positive individuals/year
• Evaluate and treat
  ➢ High treatment acceptance rate: 90%
  ➢ High treatment completion rate: 80%
  ➢ Use shorter regimens: INH+Rifapentine weekly x 12 weeks (3HP) or Rifampin x 4 months (4R)
Project setting:
Lynn Community Health Center (LCHC)

- Federally qualified community health center (FQHC)

LCHC: Patient Demographics

Compared with City of Lynn demographics

<table>
<thead>
<tr>
<th></th>
<th>City of Lynn¹ (n = 91,289)</th>
<th>LCHC² (n = 40,009)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minorities</td>
<td>37,745 (46%)</td>
<td>32,935 (82%)</td>
</tr>
<tr>
<td>Non-US born</td>
<td>29,240 (32%)</td>
<td>-</td>
</tr>
<tr>
<td>Language other than English</td>
<td>39,519 (47%)</td>
<td>23,629 (59%)</td>
</tr>
<tr>
<td>Population living ≤200% of federal poor level</td>
<td>41%</td>
<td>37,672 (94%)</td>
</tr>
</tbody>
</table>

1. US Census Bureau; American Communities Survey; generated by MDPH using American Fact Finder <http:factfinder2.census.gov>; (April 12, 2016)
Flow: Lynn Community Health Center

Primary Care Teams: Risk Assessment Testing

- Positive IGRA/TST
  - Yes: Order CXR
  - No: Document in EMR

- Refer to TB team

EMR updates to facilitate communications

TB Team:
- Follow up with patient
  - Chest X-ray
  - Evaluation
  - Education
  - Treatment / DOT
  - Adherence support

Patient Navigator, Community Health Workers, Nurse, Physicians, Project Manager

Education and awareness efforts

- Community Advisory Board for project
  - Agencies and individuals
  - Quarterly meetings
  - TB survivor guest

- Community conversations
  - Opportunities to listen
  - Latent TB infection awareness low
  - Requests for education

- Education for community providers
  - Academic detailing for primary care practices
  - CME Update – September 2018
Posters throughout health center
Community education

- 1 hour educational TB infection workshop with ELL (English Language Learners)
  - 7 minute video module with facilitated discussions and questions throughout
  - Video’s key messages:
    - Difference between TB infection and TB disease
    - New tests, new treatments for TB infection
    - Myths and misconceptions around transmission and BCG vaccine
    - Next steps
  - Designed for ELL Level 3/4 (~6th grade English comprehension)
Action-oriented messaging

PREPARATION FOR ELECTRONIC DATA INTEGRATION

1. Simplify information requested (Care cascade!)

<table>
<thead>
<tr>
<th>DEMOGRAPHICS</th>
<th>TEST INFO</th>
<th>EVALUATION INFORMATION</th>
<th>TREATMENT INFORMATION</th>
<th>OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Test type</td>
<td>CXR completed</td>
<td>Drugs prescribed</td>
<td>TX stop reason</td>
</tr>
<tr>
<td>DOB</td>
<td>Test date</td>
<td>CXR result</td>
<td>Med start date</td>
<td>TX not started reason</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>Test result</td>
<td>TB Provider</td>
<td>Tx start date</td>
<td></td>
</tr>
<tr>
<td>Country of Birth</td>
<td>Visit date(s)</td>
<td></td>
<td>Med end date</td>
<td></td>
</tr>
<tr>
<td>Address</td>
<td>Risk factors*</td>
<td></td>
<td>Tx end date</td>
<td></td>
</tr>
<tr>
<td>Language*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Originally used as proxy for COB</td>
<td>*Limited to those in EMR</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Building an electronic data mechanism

In a health center with $ 

But also with complications
Lynn Community Health Center uses Epic

But health center’s specific “instance” managed by OCHIN

Which means that, depending on the type of change…

Challenges to-date

1. Data not captured in structured fields or more than one structured field exists
2. Data from sources outside the health center
3. Clinicians have a lot of leeway in how they enter information into the system - Success requires systemic change
4. TB is not a priority for systemic change, either culturally or mechanically
5. IT TAKES FOREVER
6. Generalizable to other locations??
Disclaimer

- Data are “live” and updated every two weeks
- There are still errors in data collection and discrepancies in definitions between the EMR and surveillance data
- Quality assurance and improvement is ongoing

Everything is Preliminary

Successful scaling up of TB testing

- Risk assessment and testing implemented at primary care team level
- Focus on persons born outside the US
- Increase in testing is in use of IGRA
- Overall, 15% positive (IGRA or TST)

Preliminary Project Data: Not for Distribution or Publication
### Demographics: Test date Q1-Q6

<table>
<thead>
<tr>
<th>Category</th>
<th>Tested (N=5327)</th>
<th>+ Test (N=775)</th>
<th>Tx Start (N=499)</th>
<th>Tx Complete (N=336)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>3418 (64%)</td>
<td>475 (61%)</td>
<td>292 (59%)</td>
<td>187 (56%)</td>
</tr>
<tr>
<td>Male</td>
<td>1909 (36%)</td>
<td>300 (39%)</td>
<td>207 (41%)</td>
<td>149 (44%)</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>3236 (61%)</td>
<td>378 (49%)</td>
<td>256 (51%)</td>
<td>175 (52%)</td>
</tr>
<tr>
<td>Non Hispanic</td>
<td>1984 (37%)</td>
<td>387 (51%)</td>
<td>236 (47%)</td>
<td>157 (47%)</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black African American</td>
<td>1543 (29%)</td>
<td>358 (46%)</td>
<td>227 (46%)</td>
<td>162 (48%)</td>
</tr>
<tr>
<td>White</td>
<td>2106 (40%)</td>
<td>212 (27%)</td>
<td>143 (29%)</td>
<td>91 (27%)</td>
</tr>
<tr>
<td>Unknown</td>
<td>1004 (19%)</td>
<td>106 (14%)</td>
<td>67 (13%)</td>
<td>45 (13%)</td>
</tr>
<tr>
<td>Asian</td>
<td>434 (8%)</td>
<td>70 (9%)</td>
<td>44 (9%)</td>
<td>26 (8%)</td>
</tr>
<tr>
<td>Am Indian/Alaskan Native</td>
<td>124 (2%)</td>
<td>12 (2%)</td>
<td>7 (1%)</td>
<td>4 (1%)</td>
</tr>
<tr>
<td>Native Hawaiian/PI</td>
<td>102 (2%)</td>
<td>12 (2%)</td>
<td>9 (2%)</td>
<td>6 (2%)</td>
</tr>
</tbody>
</table>

### Care Cascade (Q1-2)

<table>
<thead>
<tr>
<th>Stage</th>
<th>Number of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Screen</td>
<td>194</td>
</tr>
<tr>
<td>CXR</td>
<td>163</td>
</tr>
<tr>
<td>Evaluated</td>
<td>140</td>
</tr>
<tr>
<td>Tx eligible</td>
<td>131</td>
</tr>
<tr>
<td>Treatment Started</td>
<td>120</td>
</tr>
<tr>
<td>Treatment Completed</td>
<td>91</td>
</tr>
</tbody>
</table>

Initial screening date: October 1, 2016 – December 31, 2017
Data as of October 16, 2018

Preliminary Project Data: Not for Distribution or Publication
Care Cascade (Q1-2, Q3-4)

Initial screening date: October 1, 2016 – December 31, 2017
Data as of October 16, 2018

Preliminary Project Data: Not for Distribution or Publication

Care Cascade (Q1-2, Q3-4, Q5-6)

Initial screening date: October 1, 2016 – December 31, 2017
Data as of October 16, 2018

Preliminary Project Data: Not for Distribution or Publication
Getting From Evaluation to Completion

Evaluating patients with positive screen

- Most challenging step in the care cascade!
- Two step process to evaluation:
  - Chest X-ray (done in Urgent Care)
  - MD appointment (separate team) for TB Evaluation
- Updating workflows to standardize tracking
- TB team is successful in maintaining constant rate of evaluation with significant increase in testing, referral volume
- Not all patients are candidates for treatment (mobile, prior treatment, pregnant)
Treating latent TB infection

- Uptake of short-course regimens is good
  - 12-dose regimen successes
- Patient-centered care
  - Time for teaching
  - Flexibility in DOT visits
  - Community health workers (CHWs) and patient navigator on TB team support patients
- Completion rates: 77% (229/296) of patients with IGRA/TST+ result in Q1-Q4 who started treatment have documented completion of treatment
  - Q5-Q6: 88% completed or still on therapy (107+72/203)

Acknowledgements: project team

Massachusetts DPH
John Bernardo, MD
Robert Carr
Marisa Chiang
Jennifer Cochran
Tammy Goodhue
Pat Iyer, RN
Sophie Lewis
MaryKate Martelon
Natina Narain, PhD
Catherine Ngo
Lisa Randall, PhD
Denise Sanderson
Laura Smock
Andrew Tibbs

Institute for Community Health
Ranjan Paradise, PhD
Carolyn Fisher, PhD
Blessing Dube
Martina Todaro

CDC/Division of TB Elimination
Garrett Asay, PhD
Vernard Green, PhD
Suzanne Marks
Rachel Yelk-Woodruff

Lynn Community Health Center
Mani Bilwa
Melis Colmen
Robert Demirkwiski
Elena Freydin, DNP
Brent Frying, MD
Nairalys Guerero
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Cindy Steger-Wilson
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Eaton Apothecary