Updates to Tuberculosis Screening and Testing of Healthcare Personnel

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Guidelines for Preventing the Transmission of *Mycobacterium tuberculosis* in Health-Care Settings, 2005
CDC Guidelines for Preventing TB Transmission in Health Care Settings - 2005 – Summary of Recommendations

• At hire - symptom screen and IGRA or tuberculin skin test (TST) testing in those without prior history of TB or LTBI

• Post exposure – symptom evaluation and IGRA or TST testing for those with a negative test at baseline and without TB history

• Serial Screening and Testing – Recommended for healthcare personnel (HCP) in medium risk setting and setting with potential ongoing transmission

• Follow up of LTBI positive – treatment referral
Background

• Concerns about the efficacy of serial TB testing with declining TB incidence were amplified by the PPD shortage in 2013 and multiple articles reporting on IGRA poor performance in low risk persons

• Joint NSTC-NTNC session at 2015 National Tuberculosis Conference to discuss issue

• Working group created in Summer 2015

• Systematic review commenced in January 2017

• Updated recommendations to be published in 2019
# Review Focused on TB Screening and Testing of Healthcare Workers

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Research Questions

 What is the prevalence and incidence of LTBI among healthcare workers in the United States?

 What is the incidence of TB disease among healthcare workers in the United States?

 Does annual or serial testing (via TST or IGRA) of U.S. healthcare workers reduce the risk of TB transmission in U.S. healthcare settings?

 Does annual or serial testing (via TST or IGRA) of U.S. healthcare workers increase the detection of occult TB transmission in U.S. healthcare settings?

 Are certain individuals who work within healthcare facilities at higher risk of TB than others based on occupational and non-occupational factors?
Methodology

• Community Guide systematic review methods used to evaluate and summarize available evidence

• Two reviewers independently screened and abstracted data for each included study

• Disagreements were resolved by consensus

• Data analyzed using “metafor” and “meta” packages in R (v3.3.2)
Search for Evidence

- We conducted a search for studies that screened and/or tested healthcare personnel (HCP) for LTBI

- Electronic databases included:
  - MEDLINE, EMBASE, and Scopus

- Search period:
  - Original search: January 2006–February 2017
  - Update search: February 2017–November 2017 (MEDLINE only)

- Language restriction:
  - English only
Search Results

Original Search Period
Jan. 2006-Feb. 2017
(n = 1129)

- Duplicates (n=2)
- Not relevant (n=1047)

Ordered Full Text
(n=80)

- Did not meet inclusion criteria (n=37)
- Unable to retrieve full text (n=8)

TB Screening & Testing in HCP Articles
(n=35)

- Limited quality of execution (n=1)

Included in Analysis
(n=34)

Total Included in Meta-analysis
(n=36)

Update Search Period
Feb. 2017-Nov. 2017
(n = 18)

- Not relevant (n=14)

Ordered Full Text
(n=4)

TB Screening & Testing in HCP Articles
(n=2)

- Limited quality of execution (n=0)

Included in Analysis
(n=2)

Modelling study (n=1)
Type of QFT test used
(n=1)
Summary of Findings

- Relatively low proportion (3%–5%) of U.S. HCP test positive for *M. tuberculosis* infection at baseline
- <1% of U.S. HCP previously testing negative convert to a positive test result during serial testing
- Nearly 50% of U.S. HCP previously testing positive revert to a negative test result during serial testing
- Insufficient evidence to assess incidence and transmission of TB disease among HCP
  - No cases of TB disease reported among the ~64,000 U.S. HCP included in the studies reviewed
What is the incidence of TB disease among healthcare workers in the United States?

- HCP were more likely to be female, younger, and to have been born outside of the United States (75% vs 67%)
- HCP were less likely to have TB attributed to recent transmission
So what does this all mean?

- Updated recommendations are based primarily on expert opinion

Tuberculosis Screening, Testing and Treatment of U.S. Health Care Personnel, Recommendations from the National TB Controllers Association and CDC, 2018

May 16, 2019!
Definitions

- **Healthcare Personnel (HCP)**
  - Replaces Healthcare Worker (HCW) to be consistent with current HHS and CDC preferred language
  - Definition unchanged from 2005

- **TB screening**
  - Broad process that includes a risk assessment, symptom evaluation, a test for LTBI (either a TST or IGRA), and additional work-up for TB disease as needed

- **TB Testing**
  - IGRA or TST
2019 Recommendations – Key changes

• Pre-placement – IGRA or TST with symptom assessment and individual TB risk assessment added (new)

• Post exposure – symptom evaluation and IGRA or TST testing for those with a negative test at baseline and without TB history (unchanged)

• Serial Screening and Testing (new)
  • Screening / testing not routinely recommended; can be considered for certain HCP groups
  • Annual TB education of all HCP including TB exposure risks

• Follow up of LTBI positive HCP – LTBI treatment strongly recommended unless contraindication exists (new)
Companion Document: Where and When?

- ACOEM Position Statement
- For release online after MMWR published; print to follow
- Expands on the MMWR
- Explanations, justifications, operational recommendations
- Includes Tables and Appendices
There’s very, very, very little TB in the US
In the US, TB is mostly in 5 states
~80% of that TB is in those born in countries where TB is endemic
Occupationally acquired TB is rare
> 96% of HCP TB tests are negative
This testing is financially, emotionally and productively costly
80% of active TB in HCP is reactivation of untreated TB

THEREFORE
HCP TB testing should be done on placement and post-exposure
Annual TB testing of HCPs is not recommended
HCP with LTBI should be strongly urged to take short-course treatment
Spreading the news...

- Infographic
- NTCA Press Release
- Updated website
- CDC Dear Colleague Letter
- Social Media
  - Twitter @CDC_TB
  - Facebook @CDCTB
- Medscape video
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Thank you!