Indiana Department of Health

WHAT HAPPENS AFTER A POSITIVE TUBERCULOSIS SCREENING TEST

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Learning Objectives

- Learn what to do when an individual has a positive tuberculosis (TB) screening test
- Understand the types of tests needed to diagnose TB disease and latent TB infection (LTBI)
- Learn how to find specifics on disease/condition reporting rules for Indiana

Testing for TB Infection

- Currently, two methods are available for diagnosing TB infection in the United States:
  - Interferon-gamma release assay (IGRA)
  - Mantoux tuberculin skin test (TST)

- Sometimes an individual with TB disease may have a negative IGRA or TST result:
  - If an individual has symptoms of TB, they should always be evaluated for TB disease regardless of their IGRA or TST results.

Testing for TB Infection

- For individuals with symptoms of TB disease, clinicians should not wait for IGRA or TST results before starting other diagnostic tests:
  - An IGRA should be ordered or a TST placed at the same time as the other steps in the diagnosis phase.

A Positive IGRA or TST—Now What?

Don’t panic.

There are various reasons an individual could have a positive IGRA or TST.

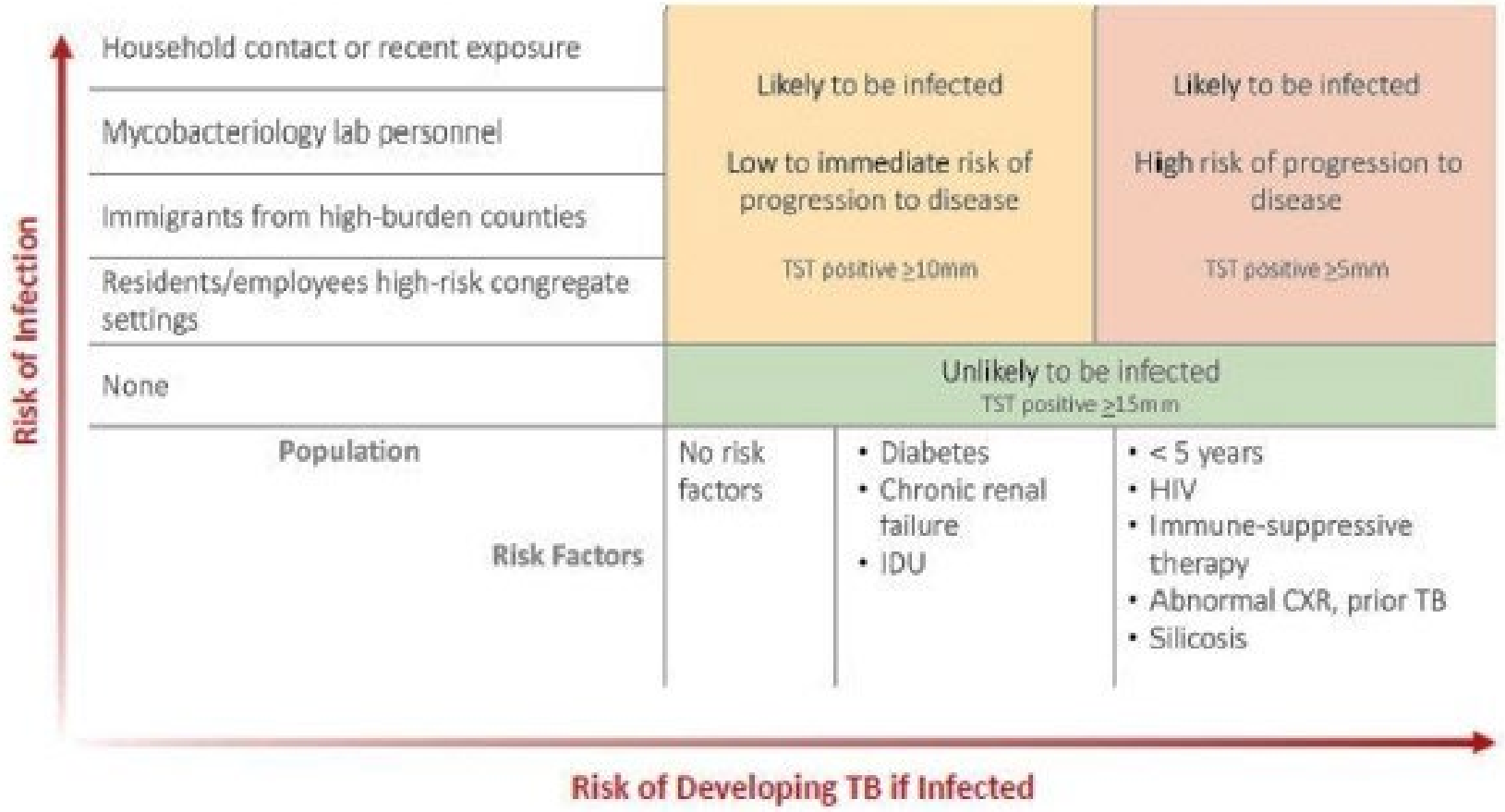
First, consider whether repeat or dual testing is warranted.

Repeat Testing

- If an individual's risk level is unlikely to be infected, consider repeat or dual testing where a negative result from either TST or IGRA would be considered negative:
  - Performing a confirmatory test following an initial positive result is based on both the evidence that false-positive results are common among individuals who are unlikely to be infected with *M. tuberculosis* and the committee's presumption that performing a second test on those whose initial test was positive will help identify initial false-positive results.

- Source: https://www.thoracic.org/statements/resources/tb-opi/diagnosis-of-tuberculosis-in-adults-and-children.PDF

CDC Risk and Testing Strategy



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Positive Screening Test

Anyone with symptoms of TB or anyone with a true positive tuberculin skin test (TST) or interferon gamma release assay (IGRA) should be medically evaluated for TB disease.

Medical Evaluation

A complete medical evaluation for TB disease includes the following five components:

1. Medical history
2. Physical examination
3. Test for *M. tuberculosis* infection
    - IGRA or TST
4. Chest radiograph
5. Bacteriologic examination

Medical History

- To obtain a medical history, the clinician should ask whether the patient has:
  - Any symptoms of TB disease
  - Been exposed to a person with infectious TB or has risk factors for exposure to TB
  - Risk factors for developing TB disease
  - Had latent TB infection (LTBI) or TB disease in the past

- The possibility of TB disease should be suspected in patients with any of these factors.

Pulmonary TB Disease Symptoms

- Are any symptoms of TB disease present and, if so, for how long?
- A visual depiction of symptoms for pulmonary TB disease appears to the right.

Extrapulmonary TB Disease Symptoms

- Blood in the urine (may indicate TB of the kidney)
- Headache/confusion (may indicate TB meningitis)
- Back pain (may indicate TB of the spine)
- Hoarseness (may indicate TB of the larynx)
- Loss of appetite/unexplained weight loss
- Night sweats
- Fever
- Fatigue

Exposure to TB

- Anyone who has been exposed to TB may have TB infection.
- Some people become infected with *M. tuberculosis* without knowing that they were exposed to it.
- The risk of being exposed to TB is higher for some people:
  - It is important to consider demographic factors that may increase the patient's risk for exposure to TB.
    - Examples: country of birth, travel to a country where TB is common, occupation

Risk Factors for Developing TB Disease

- Certain medical conditions can increase the individual's risk for developing TB disease:
  - HIV infection
  - Use of TNF-α antagonists
  - Diabetes
  - End-stage renal disease
  - Certain forms of cancer such as head and neck, leukemia or lymphoma

Previous TB Infection or TB Disease

- During the medical history, the clinician should ask the patient whether he or she has ever been diagnosed with and treated for TB infection or disease:
  - Patients known to have a positive IGRA or TST result probably have TB infection:
    - If they were infected within the past two years, they are at high-risk for developing TB disease.
  - Patients who have had TB infection or disease before should be asked when they had the disease and how the disease was treated.
- Clinicians may also contact the local health department for information about whether a patient has received TB treatment in the past.

Chest Radiograph

- To continue the work-up, refer the patient to a provider to have a chest x-ray performed.
- Pulmonary TB is the most common form of TB, so a chest radiograph is useful for diagnosis purposes:
  - A posterior-anterior radiograph of the chest is the standard view used for the detection of TB-related chest abnormalities.
  - In some cases, a lateral or lordotic view may be helpful, especially in children.

LTBI Diagnosis

Individuals with a positive screening test and no clinical OR radiographic evidence of TB disease have LTBI.

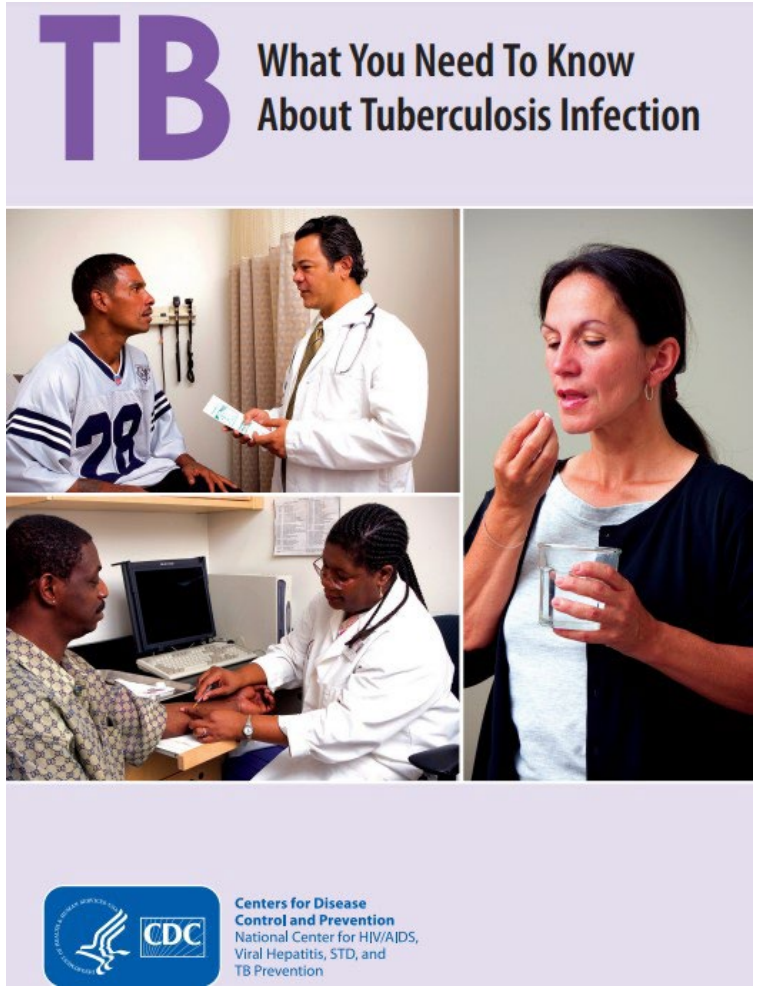
In Indiana, LTBI is reportable.

- Complete and submit a report to the applicable local health department.
- Reporting forms can be located at this link: https://www.in.gov/health/idepd/tuberculosis/information-for-health-professionals/#Reporting_Forms

LTBI Education

- CDC's patient education series is available in English and several other languages and includes a pamphlet on latent TB infection along with Think, Test, Treat patient materials.

- MedlinePlus also has some LTBI resources available in a variety of languages.



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LTBI Treatment

- Treating LTBI prevents TB disease.
- Without treatment, 1 in 10 people will develop TB disease.

- In Indiana, free LTBI treatment is available through local health departments (LHDs).

Bacteriologic Examination

- If the chest x-ray is abnormal or if the patient has TB symptoms, continue the work-up:
  - Collect three sputum specimens for acid-fast bacilli (AFB) smear and culture 8-24 hours apart.
    - One specimen should be from the early morning.

- If TB disease is suspected, report the patient to the applicable LHD within one working day:
  - Reporting forms can be located at this link: https://www.in.gov/health/idepd/tuberculosis/information-for-health-professionals/#Reporting_Forms

TB Disease Education

- Educate the patient:
  - CDC's patient education series is available in English and several other languages and includes pamphlets about TB disease.
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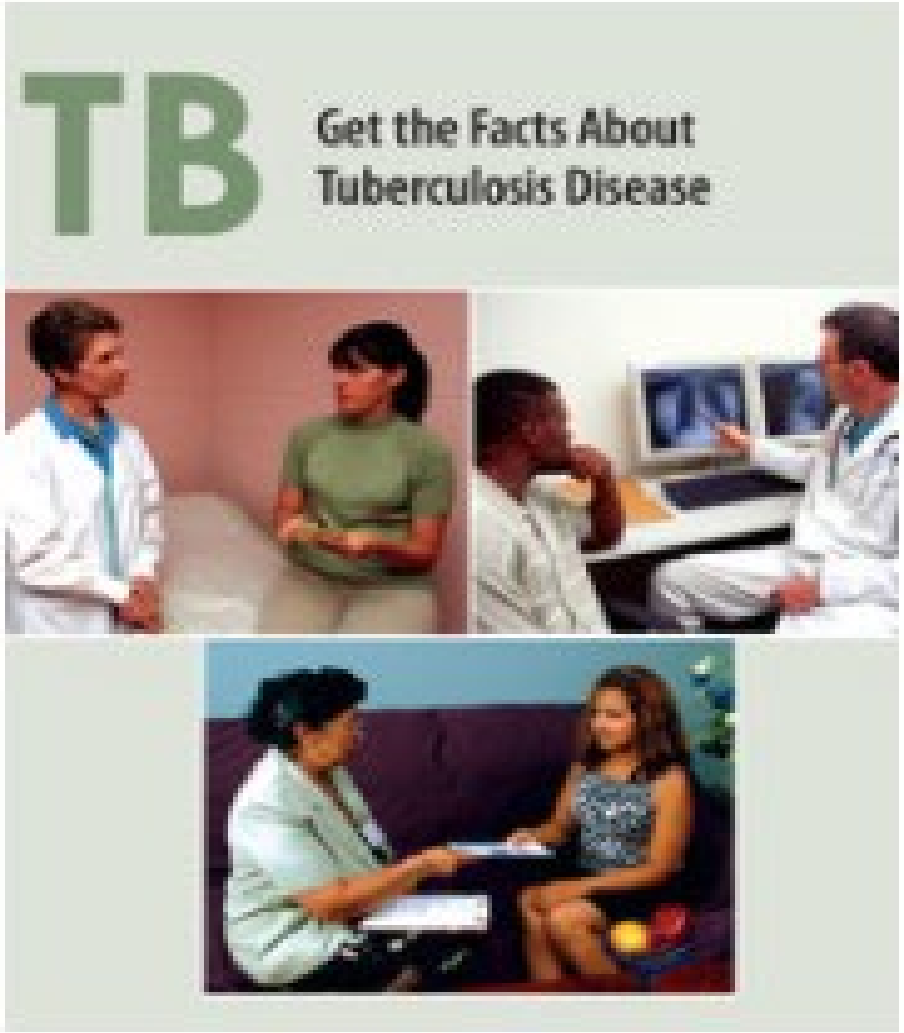

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Additional Information

Additional information about diagnosing LTBI and TB disease can be found on the Centers for Disease Control and Prevention website: https://www.cdc.gov/tb/topic/testing/diagnosingltbi.htm.

Communicable Disease Reporting

Communicable Disease Reporting 101

Indiana Administrative Code (IAC) 410 contains the Communicable Disease (CD) Rule

- Definitions
- Reporting Requirements for Physicians and Hospital Administrators
- Laboratories Reporting Requirements
- Disease Intervention Measures
- Control Measures

Wait … why do we have the CDR?

The communicable disease rule, and disease reporting, allows public health to be informed about conditions/results that require public health action

- Isolate infectious patients to stop the spread of disease
- Quarantine exposed contacts
- Provide prophylaxis to exposed contacts to prevent disease
- Provide treatment to patients to cure disease
- Track disease patterns to inform other public health actions

Communicable Disease Reporting 101

Two important types of communicable disease reporting

- Hospital/Clincian Reporting
  - Disease/Diagnosis
  - Ex. Tuberculosis Disease
- Laboratory Reporting
  - Laboratory Result/Pathogen
  - Ex. *Mycobacterium Tuberculosis*

Why both disease and laboratory reporting?

- Won't always have both for a reportable event
  - Ex. Suspected clinical disease might not have a positive lab result
- Different actions may be taken depending on if report is diagnosis or lab result
- Reporting isn't perfect – gives us more chances of catching the information and taking quick public health action

"Reporting of specimen results by a laboratory to health officials does not nullify the physician's or administrator's obligations to report the case"

410 IAC 1-2.5-77 Disease intervention measures; responsibility to investigate and implement

(a) Case reports submitted to the local health department or the department may be used for: (1) epidemiological investigation; or (2) other disease intervention activities; as warranted. *Prior approval from a patient is not required before releasing medical or epidemiological information to the local health department or the department or state designated districts.*

*(b) Unless otherwise indicated**, the local health department** in the jurisdiction where the patient is a resident is responsible for: (1) performing any epidemiological investigation required; and (2) instituting control measures.*

HIPAA and Communicable Disease Reporting

Indiana communicable disease laws and the federal Health Insurance Portability and Accountability Act of 1996 (HIPAA) allows for release of information to Indiana Department of Health (IDOH) staff during an epidemiological investigation

"Prior approval from a patient is not required before releasing medical or epidemiological information to the local health department or the department or state designated districts."

410 IAC 1- 2.5-77(a)

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TB Disease & LTBI Reporting

In Indiana:

- Suspected and confirmed TB disease is reportable within one working day.
- LTBI is reportable within one working day.
  - Also, positive TST results are reportable within Marion County.
- **It is the diagnosing/treating provider's responsibility to report to the local health department**
  - TB and LTBI State of Indiana Reporting Forms link
- Additional information on reporting can be found in the Indiana Communicable Disease Rule.

Summary

- TSTs and IGRAs should be used as aids in diagnosing TB disease or LTBI:
  - These tests on their own do not exclude TB disease or LTBI.
  - If a patient receives a positive test result, they need to be evaluated for TB disease.

- Both LTBI and TB (suspected or confirmed) are reportable to your local health department:
  - Marion County providers must also report any positive TST results.

Contact Information

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