Center for Infectious Diseases
California Department of Public Health

Latent Tuberculosis Infection: Opportunities for Preventing Tuberculosis

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Who are we?

CDPH

Center for Infectious Diseases
California Department of Public Health

Disclosures

I have no financial disclosures or conflicts of interest with the materials in this presentation.

Objectives

- **Understand…**
  - The basics of tuberculosis (TB) and latent TB infection (LTBI)
  - The burden of TB
  - The relevance of LTBI
- **Know…**
  - The patient populations at risk for LTBI and TB
  - The importance and options for testing/treating for LTBI
  - Where to find and utilize additional resources

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Tuberculosis (TB) Basics

- Infectious disease caused by organisms of the ***Mycobacterium tuberculosis* complex**
  - Acid-fast aerobic bacillus with lipid cell wall
  - Bacterium discovered in 1882
- First TB drugs developed in 1940s-50s
  - Resistance an evolving issue
- **Airborne spread**, person-to-person
- Lungs most common site of disease
  - Can be found in any part of the body (kidney, spine, brain, lymph nodes, bones)

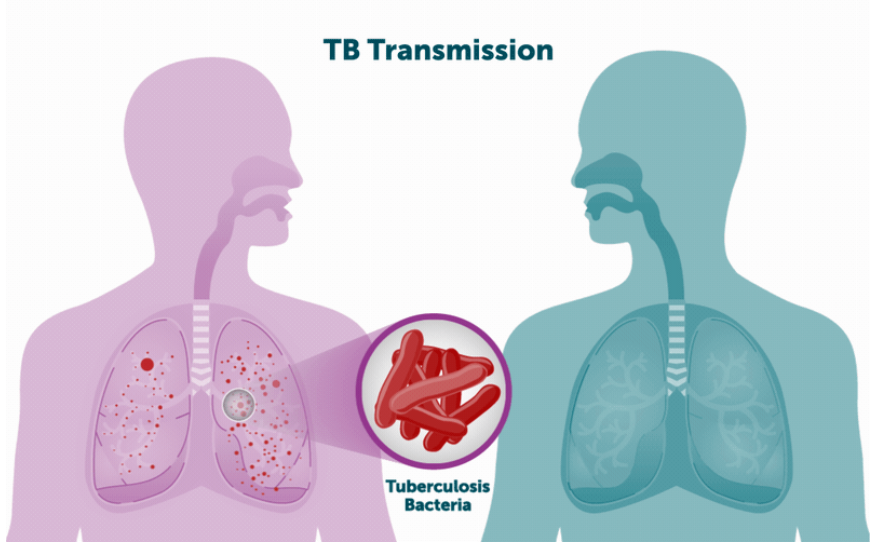
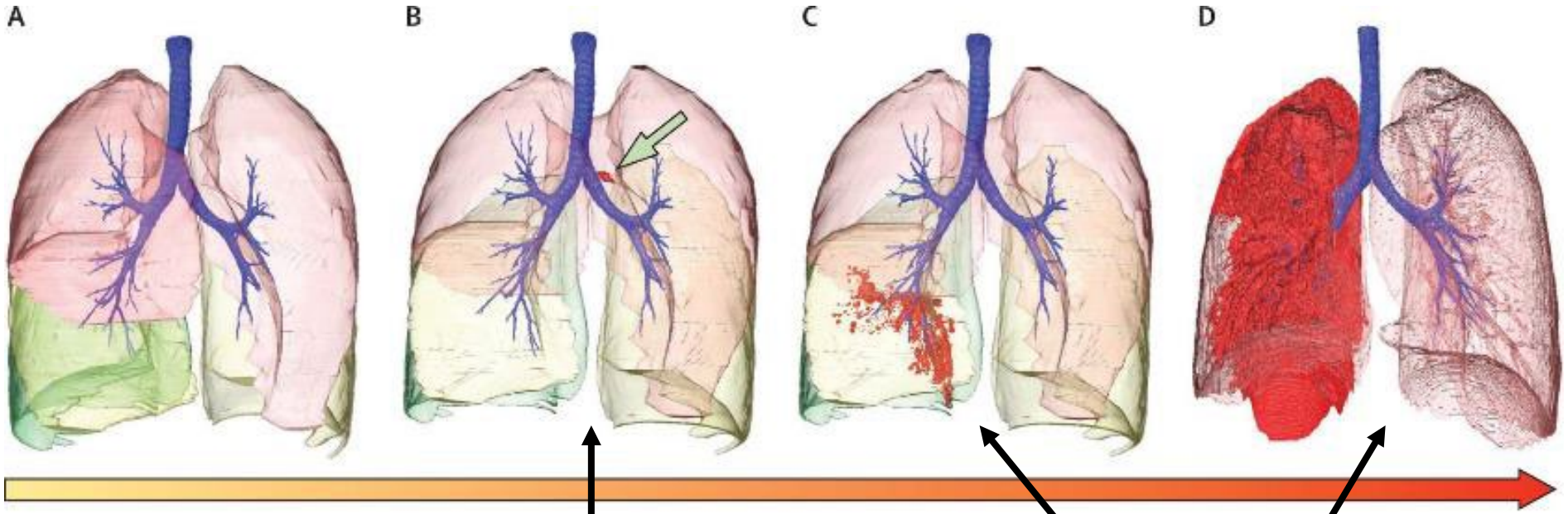


Image: CDC Think. Test. Treat TB

The Spectrum of Tuberculosis



A – Clearance
B – Latent infection
C – Pulmonary disease (active)
D – Disseminated disease (active)

Latent TB Infection

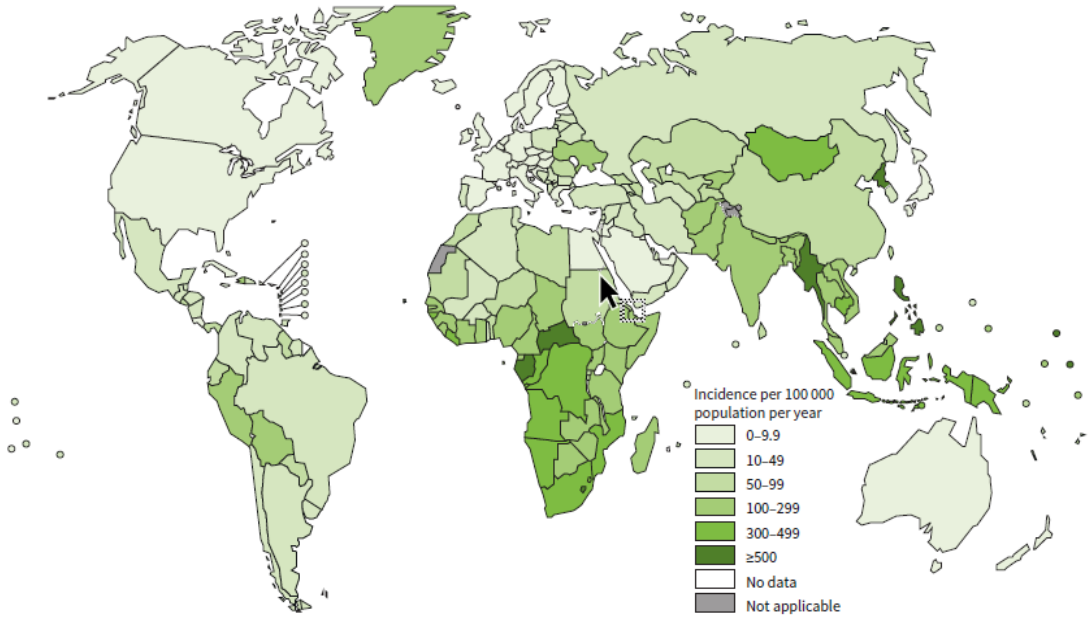
Active TB Disease

Image: Dheda K. Lancet, 2016

Global **Burden** of TB

- Major cause of morbidity and mortality worldwide
- **#1** infectious disease killer globally
- In 2023: **10.8 million** developed TB and **1.25 million** died
- Estimated **25% have LTBI**

Estimated TB Incidence rates, 2023



WHO Global Tuberculosis Report 2024

TB in the United States

- **9,633** TB cases reported (2023)
- **602** TB-related deaths (2021)
- Low-burden country: incidence of **2.9** cases per 100,000 persons (2023)

CDC, 2024

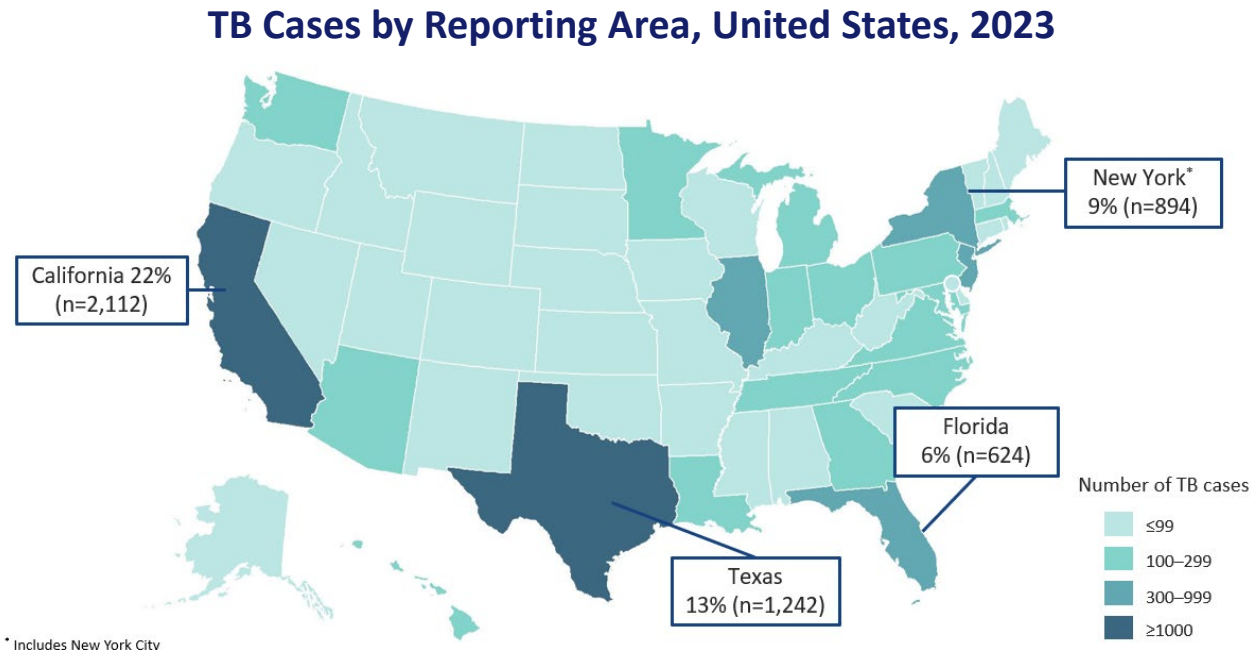


Image: CDC, 2024

TB in California

In 2023:

- **5.4 cases** per 100,000 persons (2x U.S. rate)
- **2,113** new TB disease cases
  - Half are hospitalized
  - **1 in 6** die within 5 years of diagnosis
  - 27 cases of TB among children <5 years old
  - 27 MDR TB cases
- Cases reported in **45** of 61 local health jurisdictions
- **8** new outbreaks, **13** ongoing outbreaks

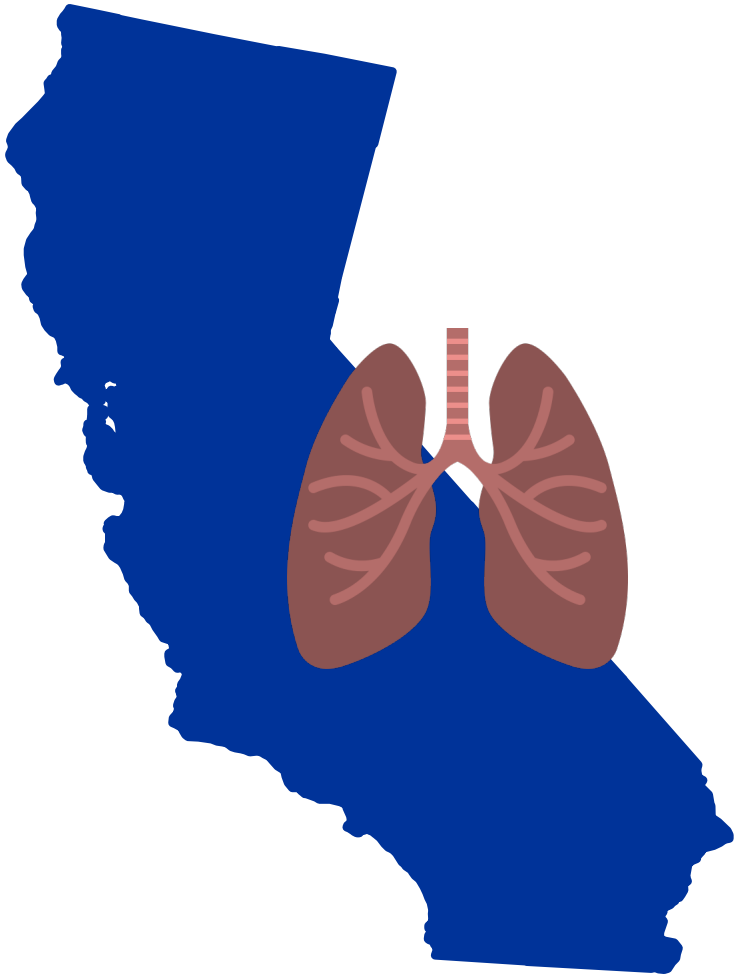


Image of Lungs: Flaticon.com

TBCB CDPH, 2023

TB is a Health Disparity

In California, 2023:

- Race/ethnicity of TB cases:
  - **47%** in non-Hispanic **Asian persons**
  - **40%** in **Hispanic persons**
- Place of birth:
  - Rate of TB in non-U.S.-born persons **14x higher** than those born in the U.S.
  - **U.S.-born cases**: Asian, Black, and Hispanic persons had higher rates than white persons

Image: AAFP

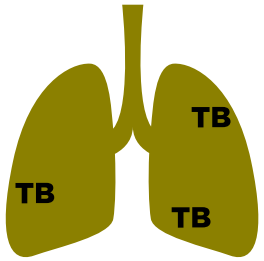
TBCB CDPH, 2023

LTBI

- ***No TB symptoms***
- **Not infectious**
- Positive TB test (TST[1] or IGRA[2])
- Chest x-ray (CXR) normal
- May be unaware of infection
- Treat with 1-2 drugs

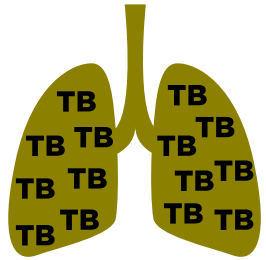
[1]TB skin test

[2]Interferon gamma release assay



TB Disease

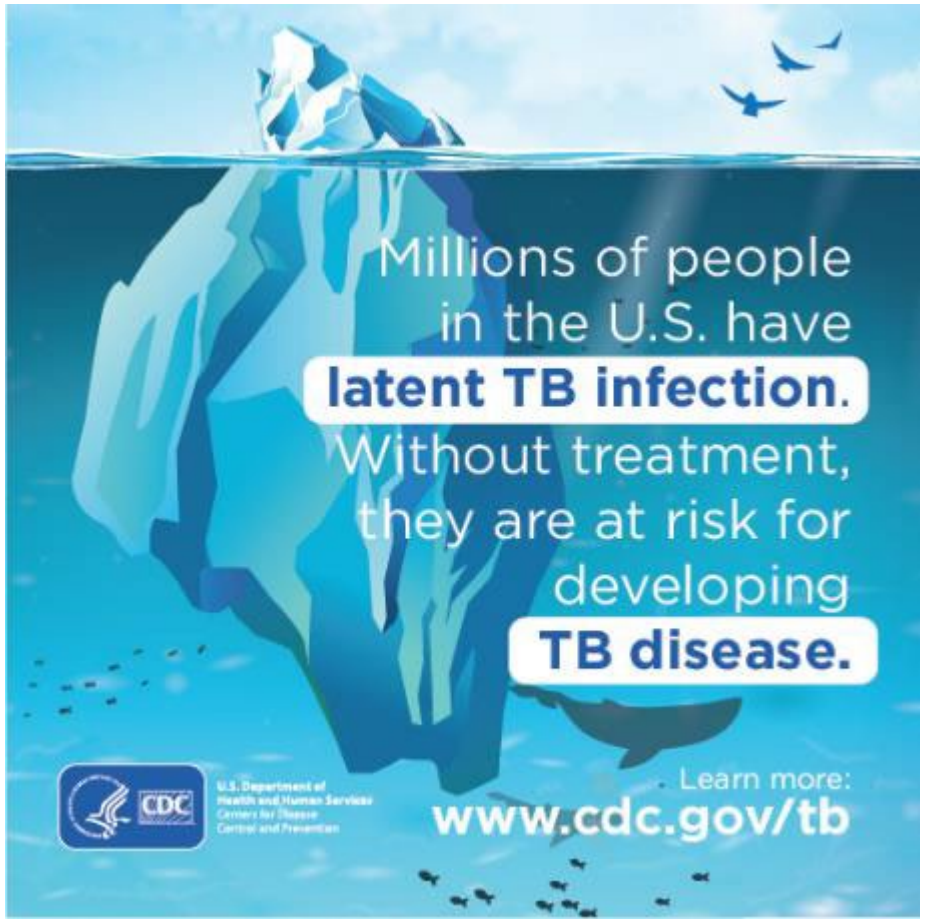
- ***Symptoms (cough, fever, weight loss)***
- **Infectious and can be deadly**
- TST or IGRA usually positive
- CXR usually abnormal
- Respiratory specimens usually culture positive; smear positive for ~50%
- Treat with multiple drugs



CDC, 2020

Always rule out TB disease before starting treatment for LTBI!

Why is LTBI Important?



Why Address LTBI in the U.S.?

- **Lifetime risk of progressing to TB ~10%**
  - Higher in certain risk groups
  - Treatment reduces risk of progression **~90%**
- **TB has tragic consequences**: **death, disability, hospitalization**
- TB prevention cheaper than treating TB disease
  - In CA: TB prevention **($857/person)** vs Treating TB disease **($43,000/person)**
- No effective TB vaccine (LTBI treatment = prevention)
- Protect individuals, families, and the community

USPSTF, 2023; TBCB 2021

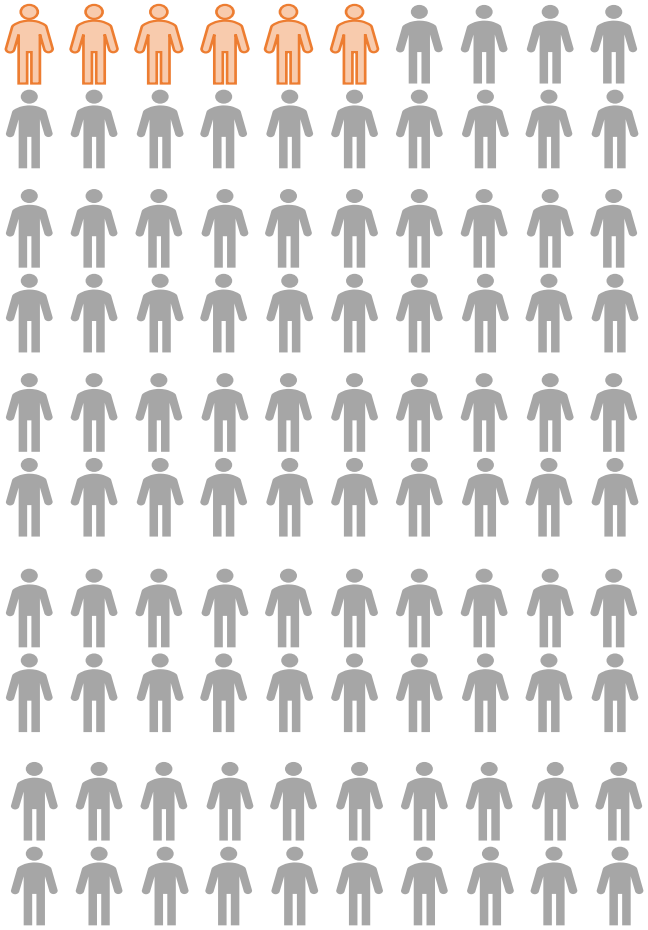
TB Vaccine

- No effective vaccine to prevent TB infection
- Many non-U.S. born persons vaccinated with **BCG** (bacilli Calmette-Guerin)
  - Used in countries with higher burden of TB to prevent TB meningitis and miliary disease **during childhood**
  - BCG World Atlas (to look up specific countries)
  - Contraindications: immunosuppression, pregnancy
  - **Not** generally recommended (or available) in U.S.

CDC, 2016; WHO, 2023; StatPearls, 2023

LTBI in California

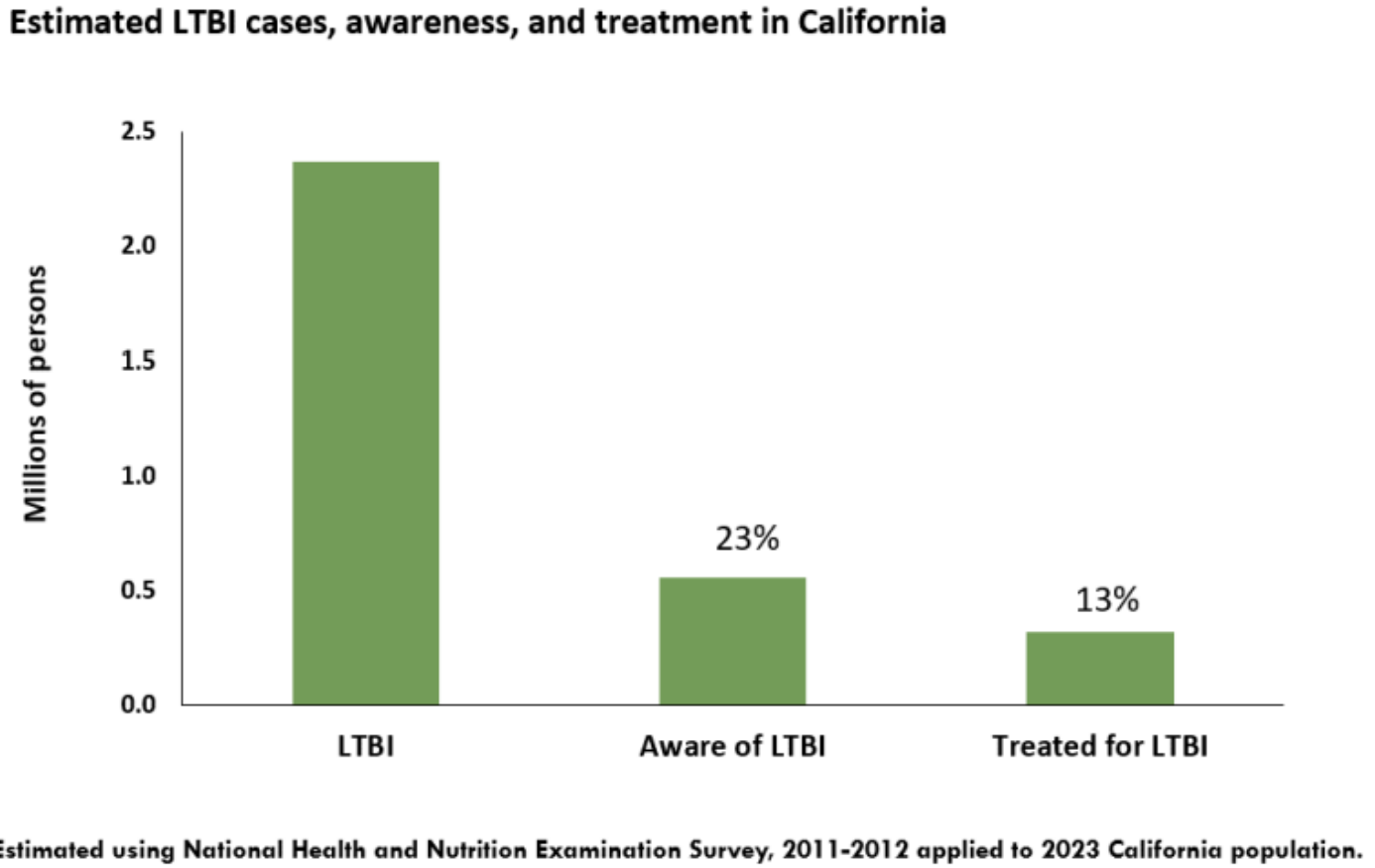
Estimated >2 million Californians have LTBI (~6% of population!)



Majority unaware and untreated

4,200 deaths from TB could be prevented by 2040

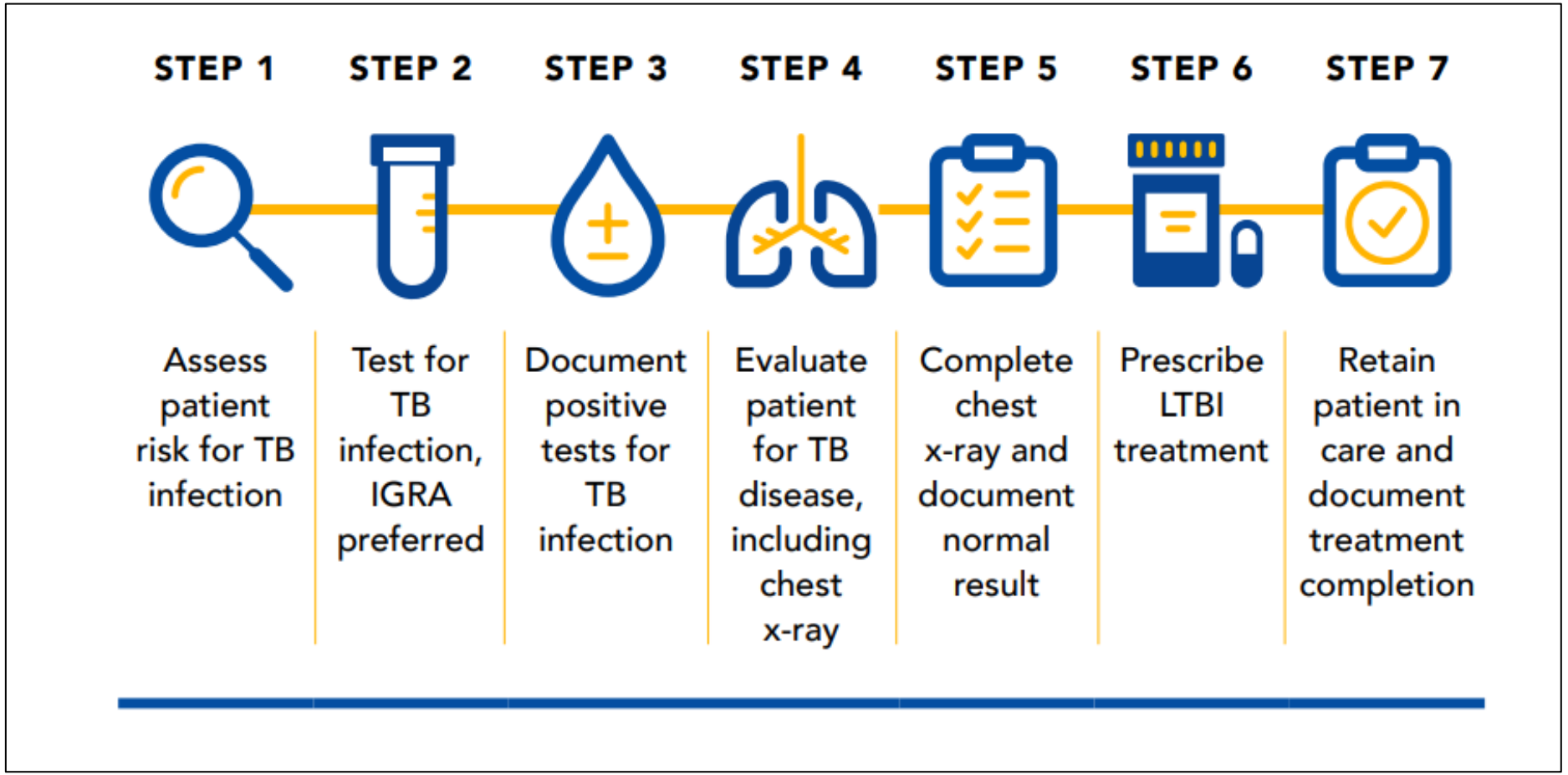
LTBI in California (cont'd)



CDPH TBCB, 2021 & 2022

TB PREVENTION GUIDEBOOK

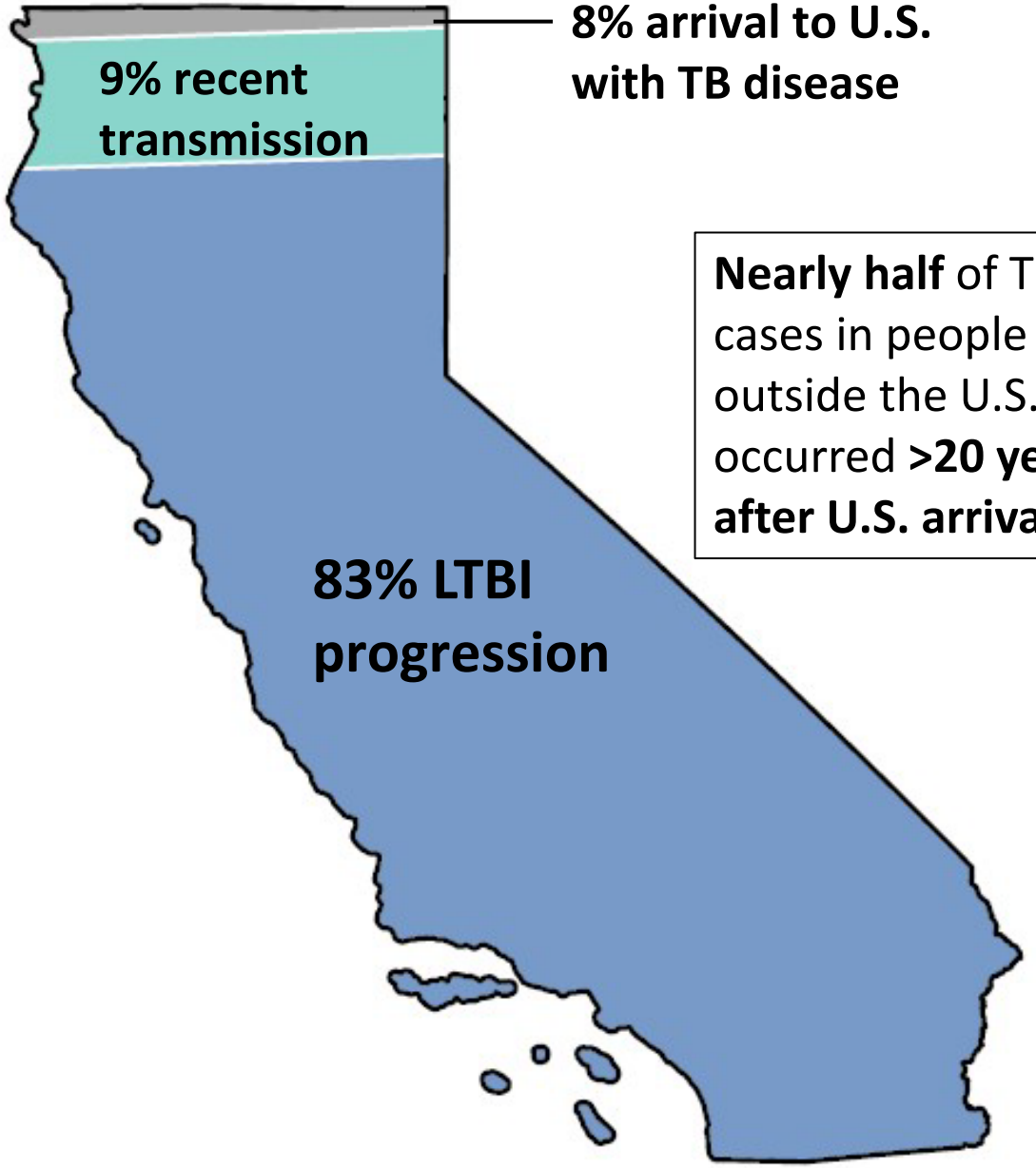
LTBI Care Cascade



TBCB CDPH, 2022

Relevance of LTBI in CA

2,113 new TB cases reported (2023)



Nearly half of TB cases in people born outside the U.S. occurred **>20 years after U.S. arrival**.

CDPH TBCB, 2024

Screen	Screen for risk of TB infection
Test	Test using an IGRA, if risk present
Treat	Treat with short-course rifamycin-based regimens

CA Assembly Bill 2132

CTCA
CALIFORNIA TUBERCULOSIS CONTROLLERS ASSOCIATION

- New **TB screening bill** , sponsored by CTCA
- Signed into law on 9/29/24; effective January 1, 2025
- Requires adult patients receiving primary care services to be offered TB screening test if risk factors identified (and covered by health insurance).
  - **Positive test** = appropriate/recommended treatment or referral to follow-up care
- Incentive: **increase in TB cases** from 2022-2023
  - Statewide (15%)
  - Santa Clara County (19%)

Goal:

Increase TB Screening → **Ensure Early Detection** → **Provide Treatment to Save Lives** → **Reduce Burden of TB in CA**

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Why Test for TB Infection?

- **TB is preventable and treatable**
- Without treatment, **1 in 10** persons with LTBI will progress to TB disease
- **15%** increase in new CA TB cases reported in 2023 compared to 2022

CDC, 2023

Who to Test for TB Infection?

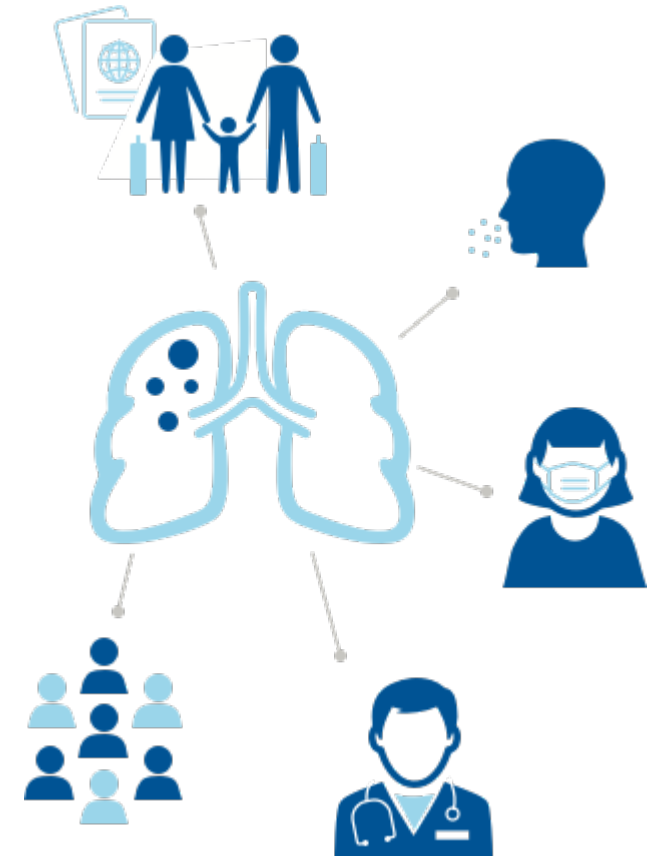
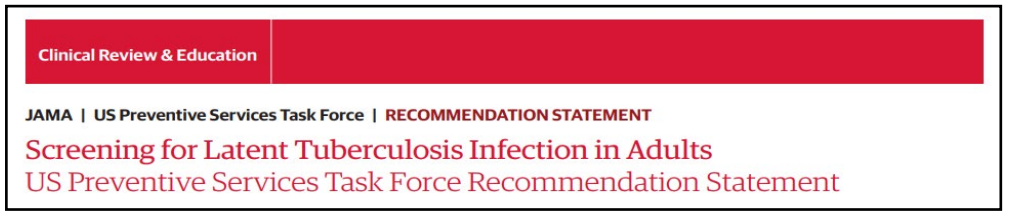


Image: CDC Think. Test. Treat TB

- Use **California TB Risk Assessments**
- Test patients with TB **risk factors**
  - Birth/travel/residence outside U.S. >1 month
  - Contacts of TB cases
  - Immunosuppressed
  - Homelessness or incarceration
- Testing populations with low prevalence may result in false-positive results
- Most with positive test should be treated, **after TB disease ruled out**

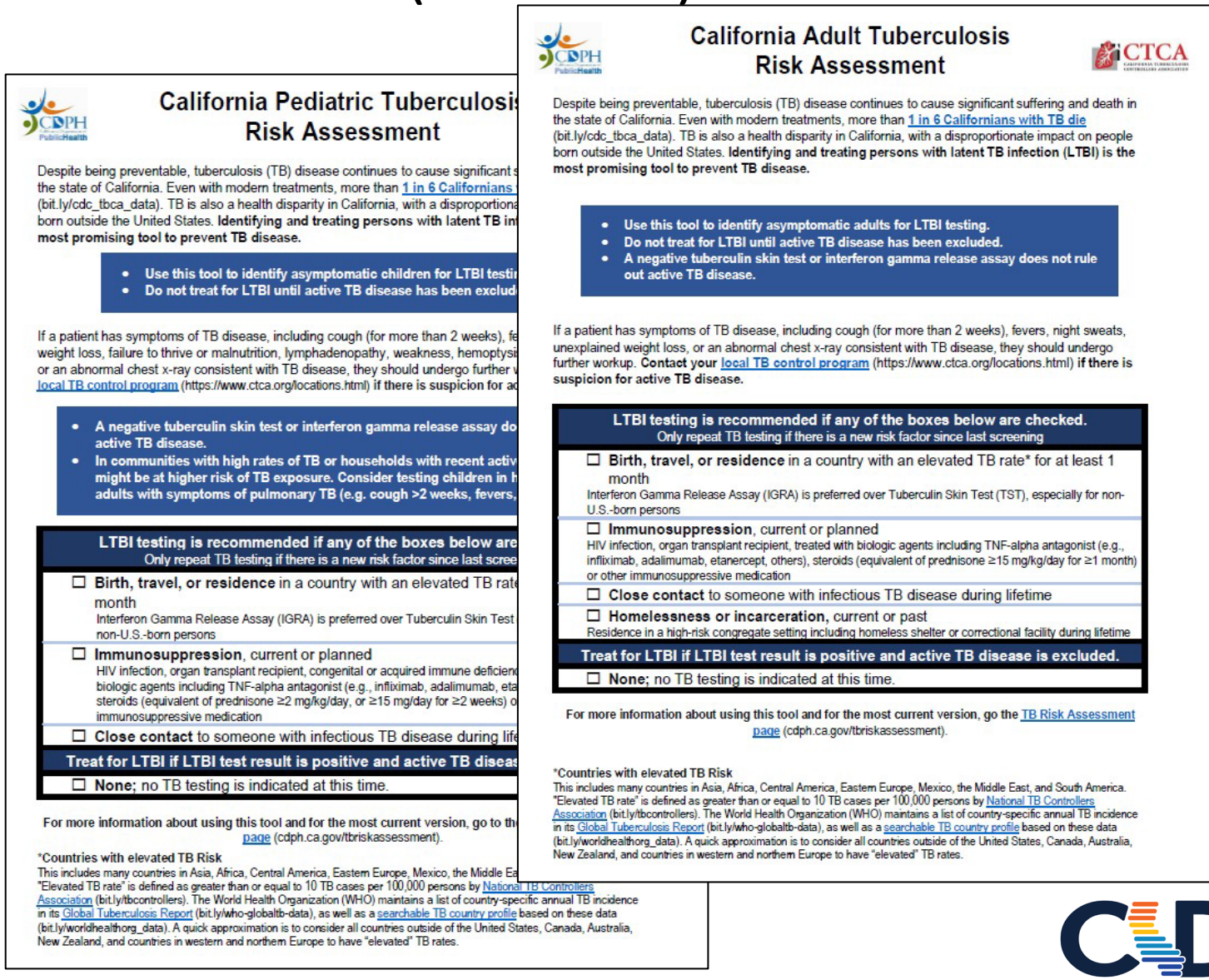
TB Risk Assessments



- CA TB risk assessments are based on **national guidelines**
  - USPSTF
  - CDC
  - NTCA
- **All** patients at increased risk for TB disease should be screened
- Test those with **risk factors**:
  - Persons born outside the U.S.
  - Contacts of TB cases
  - Immunosuppressed
  - Adults who have resided in congregate settings

California TB Risk Assessments (cont'd)

- All patients at increased risk for TB disease should be **screened**
- To prevent TB disease: **test** those who answer **"yes"** to any question(s)
- Some settings/counties utilize population-specific risk assessments



California Adult Tuberculosis Risk Assessment

Despite being preventable, tuberculosis (TB) disease continues to cause significant suffering and death in the state of California. Even with modern treatments, more than 1 in 6 Californians with TB die (bit.ly/cdc_tbca_data). TB is also a health disparity in California, with a disproportionate impact on people born outside the United States. **Identifying and treating persons with latent TB infection (LTBI) is the most promising tool to prevent TB disease.**

- **Use this tool to identify asymptomatic adults for LTBI testing.**
- **Do not treat for LTBI until active TB disease has been excluded.**
- **A negative tuberculin skin test or interferon gamma release assay does not rule out active TB disease.**

If a patient has symptoms of TB disease, including cough (for more than 2 weeks), fevers, night sweats, unexplained weight loss, or an abnormal chest x-ray consistent with TB disease, they should undergo further workup. **Contact your local TB control program** (https://www.ctca.org/locations.html) **if there is suspicion for active TB disease.**

LTBI testing is recommended if any of the boxes below are checked.
Only repeat TB testing if there is a new risk factor since last screening

- ☐ **Birth, travel, or residence** in a country with an elevated TB rate* for at least 1 month
  Interferon Gamma Release Assay (IGRA) is preferred over Tuberculin Skin Test (TST), especially for non-U.S.-born persons
- ☐ **Immunosuppression**, current or planned
  HIV infection, organ transplant recipient, treated with biologic agents including TNF-alpha antagonist (e.g., infliximab, adalimumab, etanercept, others), steroids (equivalent of prednisone ≥15 mg/kg/day for ≥1 month) or other immunosuppressive medication
- ☐ **Close contact** to someone with infectious TB disease during lifetime
- ☐ **Homelessness or incarceration**, current or past
  Residence in a high-risk congregate setting including homeless shelter or correctional facility during lifetime

Treat for LTBI if LTBI test result is positive and active TB disease is excluded.

- ☐ **None;** no TB testing is indicated at this time.

For more information about using this tool and for the most current version, go to the TB Risk Assessment page (cdph.ca.gov/tbriskassessment).

*Countries with elevated TB Risk
This includes many countries in Asia, Africa, Central America, Eastern Europe, Mexico, the Middle East, and South America. "Elevated TB rate" is defined as greater than or equal to 10 TB cases per 100,000 persons by National TB Controllers Association (bit.ly/tbcontrollers). The World Health Organization (WHO) maintains a list of country-specific annual TB incidence in its Global Tuberculosis Report (bit.ly/who-globaltb-data), as well as a searchable TB country profile based on these data (bit.ly/worldhealthorg_data). A quick approximation is to consider all countries outside of the United States, Canada, Australia, New Zealand, and countries in western and northern Europe to have "elevated" TB rates.

California Pediatric Tuberculosis Risk Assessment

Despite being preventable, tuberculosis (TB) disease continues to cause significant s
the state of California. Even with modern treatments, more than 1 in 6 Californians
(bit.ly/cdc_tbca_data). TB is also a health disparity in California, with a disproportiona
born outside the United States. **Identifying and treating persons with latent TB in**
most promising tool to prevent TB disease.

- **Use this tool to identify asymptomatic children for LTBI testi**
- **Do not treat for LTBI until active TB disease has been exclud**

If a patient has symptoms of TB disease, including cough (for more than 2 weeks), fe
weight loss, failure to thrive or malnutrition, lymphadenopathy, weakness, hemoptysi
or an abnormal chest x-ray consistent with TB disease, they should undergo further
local TB control program (https://www.ctca.org/locations.html) **if there is suspicion for a**

- **A negative tuberculin skin test or interferon gamma release assay do**
  active TB disease.
- **In communities with high rates of TB or households with recent activ**
  might be at higher risk of TB exposure. Consider testing children in h
  adults with symptoms of pulmonary TB (e.g. cough >2 weeks, fevers,

LTBI testing is recommended if any of the boxes below are
Only repeat TB testing if there is a new risk factor since last scree

- ☐ **Birth, travel, or residence** in a country with an elevated TB rat
  month
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  non-U.S.-born persons
- ☐ **Immunosuppression**, current or planned
  HIV infection, organ transplant recipient, congenital or acquired immune deficien
  biologic agents including TNF-alpha antagonist (e.g., infliximab, adalimumab, eta
  steroids (equivalent of prednisone ≥2 mg/kg/day, or ≥15 mg/day for ≥2 weeks) o
  immunosuppressive medication
- ☐ **Close contact** to someone with infectious TB disease during life

Treat for LTBI if LTBI test result is positive and active TB disease

- ☐ **None;** no TB testing is indicated at this time.

For more information about using this tool and for the most current version, go to th
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TB Risk Factors

Exposure	Progression
Non-U.S. born*	Persons with HIV/AIDS
Prolonged travel (>30 days)	Patients that received transplant(s)
Known contact to infectious case (highest risk within 2 years)	Patients taking TNF-alpha inhibitors
Persons experiencing homelessness	Patients taking steroids
Persons who are incarcerated/detained	Persons with cancer (head/neck, leukemia/lymphoma)
Persons who use drugs	Patients with end stage renal disease on dialysis
Persons living in long term care facilities	Persons with a recent infection
Healthcare workers	Persons with silicosis
	Persons with diabetes mellitus
	Persons who are underweight, have malabsorption
	Persons who smoke
*From a country with elevated TB rate	Children age < 5

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30-year-old female:

- Born in U.S.
- Travels for work
- Has two kids under 5 years of age
- Seen at primary care visit

Should this patient be tested for TB infection?

Polling Question

LTBI Case 1

Image: Flaticon.com

20-year-old student:

- Born in country in Asia
- Moved to the U.S. for graduate school
- No symptoms and no known TB exposures
- Received BCG vaccine as a child
- Seen at primary care visit for first time

Should this patient be tested for TB infection?

Polling Question

LTBI Case 2

Image: Flaticon.com

Retesting for New Risk Factors

- Only retest for **new** risk factors:
  - New close contact to person with infectious TB disease
  - Residence or travel in high-incidence country for >1 month
  - New or anticipated immunosuppressive therapy
  - Patient was <6 months of age at time of last test
- Especially important for those with **immunosuppression**
  - i.e., HIV, organ transplantation, treatment with certain medications
- Know local and employer guidelines/policies

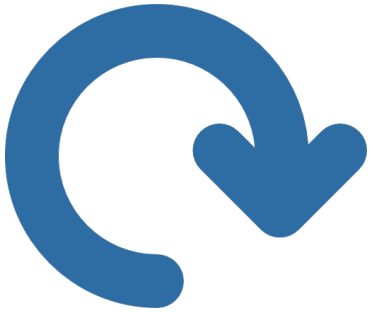


Image: Flaticon.com

NTCA, 2021

Methods to Test for TB Infection

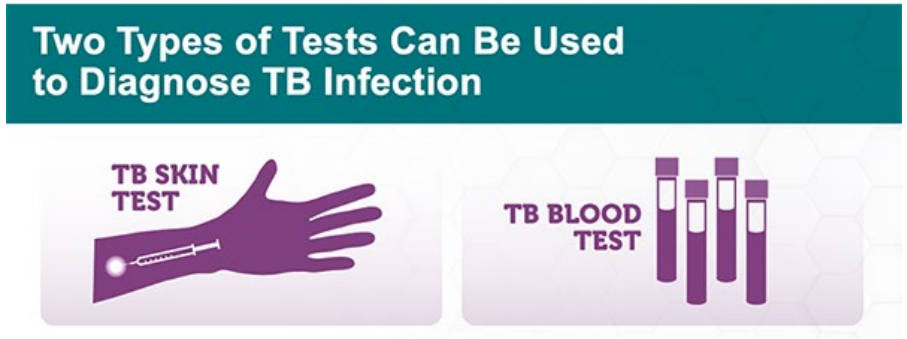


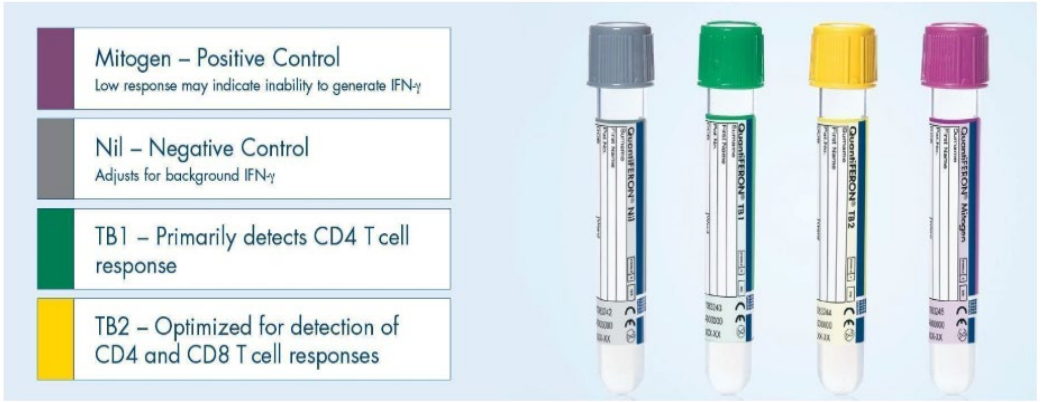
Image: CDC

1. **IGRA: interferon-gamma release assays**
   - Blood test
   - More **specific** than TST
   - No boosted response
   - **Preferred test** for all ages (esp. hx of BCG)
2. **TST: tuberculin skin test**
   - Intradermal
   - Cheap
   - **Cross-reacts** with BCG and other NTM
   - Requires 2 visits, 48-72 hours apart

Lewinsohn et al., 2017; NTCA, 2021; Turner et al, 2023

Interferon Gamma Release Assays

- 3 commercial tests approved by FDA:
  - QuantiFERON-TB Gold Plus (QFT-Plus) and QuantiFERON-TB Gold In-Tube
  - T-SPOT.TB
- Administered via **blood test**
- Measures cellular response to MTB complex-specific antigens, with positive and negative controls



NTCA, 2021

Images: Qiagen, www.quantiferon.com; Oxford Immunotec Ltd, www.tspot.com

Tuberculin Skin Test

- 2 FDA-approved tuberculin-purified protein derivative (PPD) solutions: **Aplisol** and **Tubersol**
- Administered via 0.1ml antigen solution
- Measure **induration** (not erythema) at 48-72hrs; record in mm
- Positive test criteria:
  - ≥5mm for immunosuppressed, recent contacts, organ transplants, CXR findings
  - **≥10mm for all others (in CA)**

NTCA, 2021; CDPH/CTCA, 2019

Images: CDC, 2016

Reliability of Test Results

- **Sensitivity:** test's ability to identify LTBI
  - Highly sensitive = few false negative results
- **Specificity:** test's ability to identify not LTBI
  - Highly specific = few false positive results

		Test Result: Positive	Test Result: Negative
True condition	disease	True Positive	False Negative
True condition	no disease	False Positive	True Negative

Image: Statistics.com

IGRAs and TST: similar good **sensitivity** for diagnosing infection

But… IGRA is more **specific** (not affected by BCG; does not respond to NTM infection)

NTCA, 2021

Discordance of Test Results

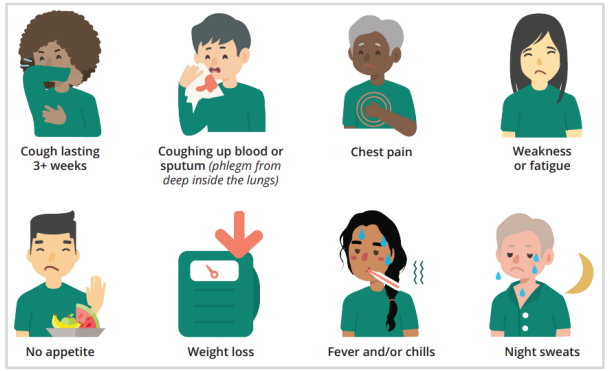
- Common but not well understood…
- **TST+/IGRA-** or **TST-/IGRA+**
  - False positives more common with TST
  - More common in children, pregnant women, immunosuppressed
- Routine testing using both IGRA and TST **not** generally recommended
- Performing second test might be useful when initial IGRA result indeterminate, borderline, or invalid

NTCA, 2021

Ruling Out Active TB Disease

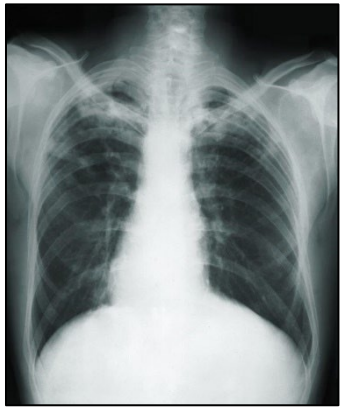
1. Symptom Screen

- Cough
- Hemoptysis
- Weight loss
- Fevers/sweats
- Extreme fatigue



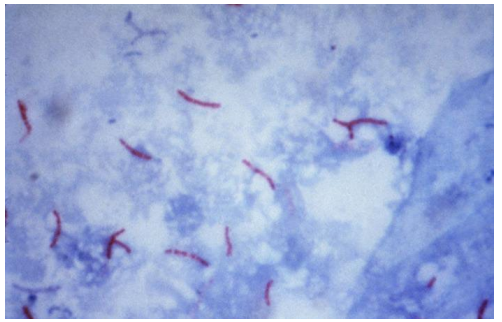
2. Chest X-Ray

- Infiltrate
- Cavitary lesion
- Nodule
- Effusion
- Hilar lymphadenopathy



3. Sputum Collection

- Only collect if symptoms &/or CXR findings present
- AFB smear and culture
- MTB PCR (gene Xpert)



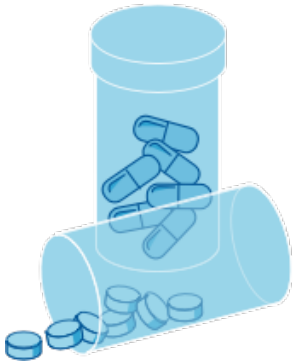
Treatment Regimens for LTBI

Regimen	Priority Rank	Recommendation	Quality of Evidence
3HP: 3 months of isoniazid and rifapentine once weekly	Preferred	Strong	Moderate
4R: 4 months of rifampin daily	Preferred	Strong	Moderate (HIV-negative)*
3HR: 3 months of isoniazid and rifampin daily	Preferred	Conditional	Very low (HIV-negative) Low (HIV-positive)
6H: 6 months of isoniazid daily or twice weekly	Alternative	Strong^ Conditional	Moderate (HIV-negative) Moderate (HIV-positive)
9H: 9 months of isoniazid daily or twice weekly	Alternative	Conditional	Moderate

* No evidence reported in persons with HIV infection.

^ Strong recommendation for persons unable to take a preferred regimen (e.g., because of drug intolerability or drug-drug interactions)

Source: Adapted from Sterling TR, et al. Guidelines for the treatment of latent tuberculosis infection: recommendations from the National Tuberculosis Controllers Association and CDC, 2020. *MMWR Recomm Rep.* 2020 Feb 14;69(1):1-11.



LTBI Treatment Regimen Dosing

	DRUG	DURATION	FREQUENCY	TOTAL DOSES	DOSE AND AGE GROUP
Preferred	ISONIAZID† AND RIFAPENTINE†† (3HP)	3 months	Once weekly	12	**Adults and children aged ≥12 yrs** INH: 15 mg/kg rounded up to the nearest 50 or 100 mg; 900 mg maximum RPT: 10–14.0 kg; 300 mg 14.1–25.0 kg; 450 mg 25.1–32.0 kg; 600 mg 32.1–49.9 kg; 750 mg ≥50.0 kg; 900 mg maximum
					Children aged 2–11 yrs INH†: 25 mg/kg; 900 mg maximum RPT††: See above
	RIFAMPIN§ (4R)	4 months	Daily	120	**Adults:** 10 mg/kg; 600 mg maximum
					Children: 15–20 mg/kg; 600 mg maximum
	ISONIAZID† AND RIFAMPIN§ (3HR)	3 months	Daily	90	**Adults** INH†: 5 mg/kg; 300 mg maximum RIF§: 10 mg/kg; 600 mg maximum
					Children INH†: 10-20 mg/kg#; 300 mg maximum RIF§: 15-20 mg/kg; 600 mg maximum
Alternative	ISONIAZID† (6H/9H)	6 months	Daily	180	**Adults** Daily: 5 mg/kg; 300 mg maximum Twice weekly: 15 mg/kg; 900 mg maximum
			Twice weekly¶	52	
		9 months	Daily	270	**Children** Daily: 10-20 mg/kg#; 300 mg maximum Twice weekly: 20–40 mg/kg#; 900 mg maximum
			Twice weekly¶	76	

Image: CDC

4r Treatment Regimen

Rifampin (RIF) *daily* x 4 months

- First line TB drug, suitable for:
  - Adults (inc. pregnant), **children**
  - **Avoid** in most persons living with HIV
- Clinical Considerations:
  - RIF drug interactions (lowers plasma levels of some drugs)
  - Adverse drug reactions including hepatotoxicity, rash, GI upset
  - Orange discoloration of body fluids

Sterling, et al., 2020

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3HP Treatment Regimen

Rifapentine (RPT) + isoniazid (INH) *once weekly* x 3 months

- First line TB drugs, suitable for:
  - Able to take weekly medication
  - Adults, children > 2 years, HIV*
- Clinical Considerations:
  - High pill burden and higher dose
  - Drug interactions
  - Hypersensitivity or flu-like reaction, rash, hepatotoxicity
- Be aware of potential drug shortages

*not on ART, or no significant drug interactions

Sterling, et al., 2020

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Patient Monitoring

- **At least monthly***:
  - Assess for s/s of TB disease, med adherence, adverse effects
  - Perform baseline/periodic laboratory testing as indicated
  - Offer HIV testing for those with unknown status
- Educate patients to **STOP and CALL** if any symptoms of adverse drug effects suspected
- Frequent and effective communication is important to ensure patient does not miss doses or appointments

Image: CDC

*Does not have to be in-person visit

NTCA, 2021

Adverse Drug Effects

- Patients should **report** signs/symptoms of adverse drug reactions:
  - Unexplained loss of appetite, nausea or vomiting, brown urine, or jaundice
  - Persistent tingling, numbness, or burning of hands or feet
  - Persistent weakness, fatigue, fever, or abdominal tenderness
  - Easy bruising or bleeding
  - Rash
  - Blurred or changed vision
- Management depends on type/severity of reaction
- Patients should first provide **list of current meds**

Drug-Drug Interactions

- Many rifamycin drug interactions can be managed with clinical monitoring and/or dose adjustment
- Find your favorite **resource**:
  - Lexicomp
  - Micromedex
  - Curry Center Rifamycin Drug-Drug Interactions guide
  - Heartland TB Medication Drug and Food Interactions guide
  - HIV.gov Guidelines for the Use of Antiretroviral Agents
  - University of Liverpool HIV Drug Interactions checker

Baseline Labs During LTBI Treatment

Image: Johns Hopkins Medicine

Baseline labs: CBC, CMP, HIV

- Who?
  - Persons living with HIV
  - Pregnancy/early postpartum (<3 mos)
  - Liver disease (HBV, HCV, alcoholic hepatitis, cirrhosis)
  - Regular EtOH use or currently injecting drugs
  - Consider for others **based on clinical discretion**:
    - ❖Statin/other hepatotoxic meds
    - ❖Age >50 years
    - ❖Other comorbidities (DM, renal disease, etc.)
    - ❖Meds with known interactions with INH or RIF

NTCA, 2021

Treating LTBI in Pregnant Persons

Image: CDC

*If LTBI treatment needed:

- **Provide immediately:**
  - immunosuppressed, TB contact, or TB test conversion in past 2 years
- Preferred treatment: 4 months RIF (4R)
  - 9H possible but not preferred
  - Avoid 3HP
- Breastfeeding is <u>not</u> a contraindication
- Many patients lost to follow-up postpartum

***Must always first rule out active TB disease!**

Kilpatrick et al., 2017; Miele et al., 2020; NTCA, 2021

Image: TB Alliance

Treating LTBI in Children

- ***Reasons to treat:**
  - Higher risk for progression to TB disease
  - Infection more likely to have been recent
  - Medications generally well tolerated
- Treatment options:
  - No 3HP for <2 years
  - Meds may be crushed, or capsules opened
  - Liquid formulations compounded by pharmacy
- Window period treatment
  - LTBI treatment given for neg test results if recent close contact to pulmonary TB disease
  - Usually for children <5 years of age
  - 8-10 weeks after period of last potential exposure

***Must always first rule out active TB disease!**

Sterling, et al., 2020; NTCA, 2021

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5-year-old student:

- Positive TST (routine screen for kindergarten)
- Referred to pediatrician
- Born in U.S., but spent 2 months in Africa last summer visiting family
- No symptoms, no previous TB testing

What exam(s) should this patient undergo?

Polling Question

LTBI Case 3

Image: Flaticon.com

Treating LTBI in Older Adults

- LTBI prevalence increases with age
- **25-30% of TB cases** in 65+ age group
- *Risk factor for death if active TB develops
- No upper limit of age set for TB screening
  - Consider individual risks, comorbidities, life expectancy
- Risk factor for **hepatotoxicity**
  - Short-course, RIF-based, 3- or 4-month LTBI treatment regimens recommended

***Must always first rule out active TB disease!**

Wu et al., 2022; NTCA, 2021

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65-year-old male:

- Born in Eastern Europe; moved to CA in his 40's
- No hx of abnormal CXR
- No symptoms, no new exposures
- Seen at primary care visit

Should this patient be tested for TB infection?

If positive, would you offer him treatment?

Polling Question

LTBI Case 4

Image: Flaticon.com

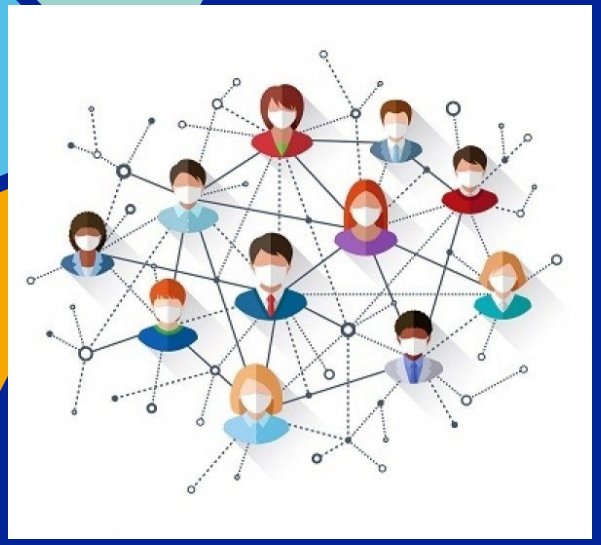

Image: NACCHO, 2022

Treating LTBI in TB Contacts

- **Recent contacts** at greatest risk of progression
  - Especially those <5 years old and/or immunosuppressed
- *Adjust treatment based on drug-susceptibility testing (DST) of source case
- For contacts of multi-drug resistant (MDR) TB:
  - 6 months fluroquinolone (FQ)

***Must always first rule out active TB disease!**

Bamrah S, et al., 2014; NTCA, 2021

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45-year-old nurse:

- Born in U.S., works in a long-term care facility
- Contact to active TB cases 3 years ago
  - TST positive
  - Completed 9 months of INH treatment
  - Treated for community acquired pneumonia several times
- <u>Now</u>:
  - IGRA and smear positive, cavitary lung lesion, INH resistant TB
  - Prior CXR: “faint irregular 1cm density” in area of current cavity
  - Genotype matches prior cases (INH sensitive)

Polling Question

LTBI Case 5

What happened?

Image: Flaticon.com

Common Patient Concerns

- **“Why should I take LTBI medication if I am not sick?”**
  - TB germs hide in the body…
- **“Why do I have to take medication for so long?”**
  - Slow-growing germ…
- **“I had the vaccine; how can I get TB?”**
  - Not completely effective…
- **“What will happen if people find out I have LTBI?”**
  - This infection is very common….
- **“How do I know if the treatment was successful?”**
  - No progression to TB disease…

Education & Communication

- **Patient:**
  - Get to know the patient/family
  - Use preferred language, method of communication
  - Be aware of common concerns; offer talking points at basic level
  - Focus on protecting patient's family and community
- **Community:**
  - Get to know the community
  - Develop trusting relationships
  - Provide appropriate and timely outreach and education
  - Collaborate with other leaders in the community

CDPH TBCB, 2022

Image: CDC

LTBI Resources

1. CTCA Directory of TB Control Staff in California
2. TB Free California
3. CDPH TB Control Branch
4. NTCA 2025 LTBI Clinical Guide
5. Prevent Tuberculosis in 4 steps: A Guide for Medical Providers
6. CDC LTBI Testing & Treatment: Summary of U.S. Recommendations
7. CDC Guidelines for Diagnosis of Tuberculosis in Adults and Children
8. California TB Risk Assessments
9. How to talk to adult patients about LTBI & How to talk to pediatric patients about LTBI
10. Curry International Tuberculosis Center (UCSF)
11. California Tuberculosis Controllers Association: For Providers
12. The Spectrum of TB from Infection to Disease
13. TB Case Management: A Guide for Nurses
14. CDC Core Curriculum on TB: What the Clinician Should Know

Summary

- TB is **preventable!**
- **IGRA test preferred** over TST when possible
- Neither TST nor IGRA can distinguish LTBI from active TB disease
- Test persons with **TB risk factors**
- LTBI treatment with a **short-course rifamycin-based regimen** is recommended

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Questions & Discussion

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