



Department of Public Health
Communicable Disease Section

Tuberculosis Update 2019

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Communicable Disease Section

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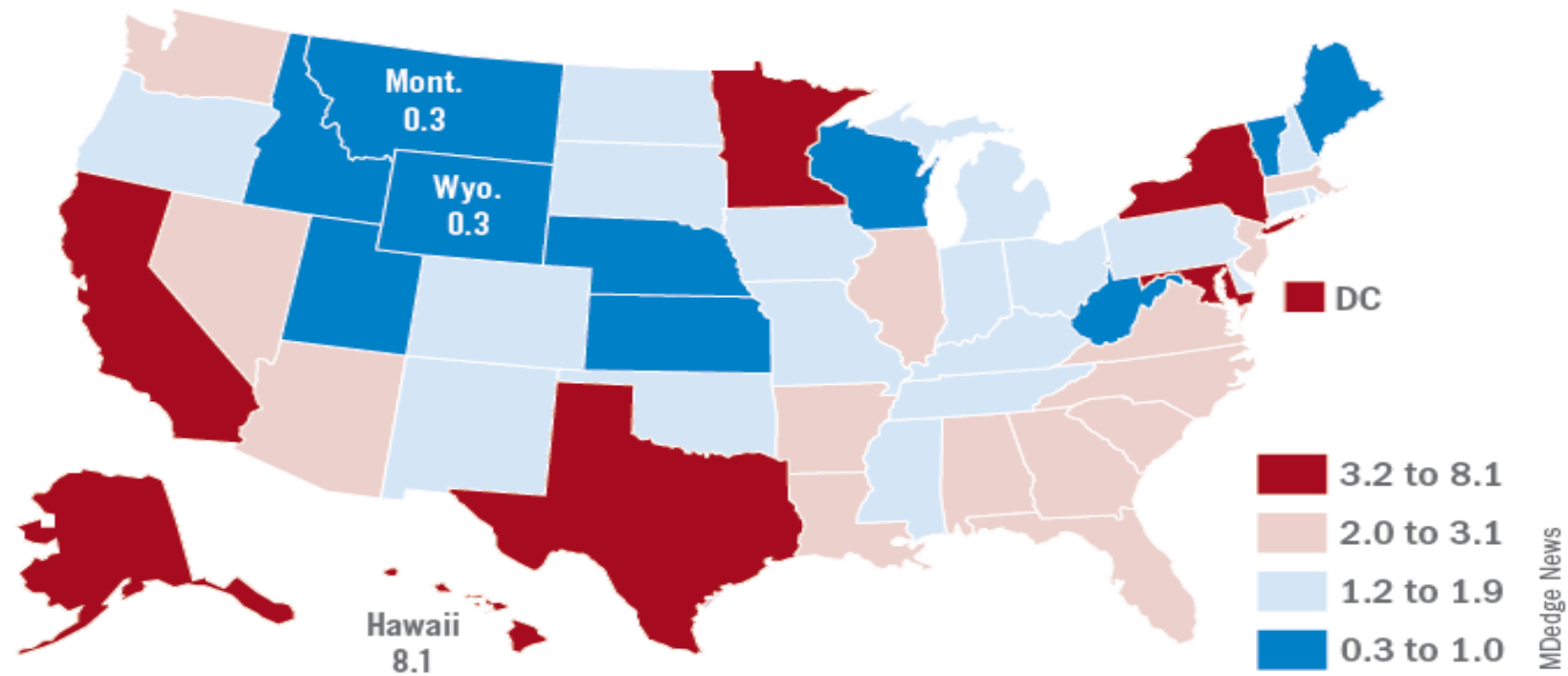
- Geographical distribution
- TB statistics
- Differences between infectious TB disease and Latent TB
- Civil surgeon updates
- Latent TB
- Goals for TB Elimination



- TB Testing
- Latent Infection Treatment
- How and what to report to Public Health TB Control



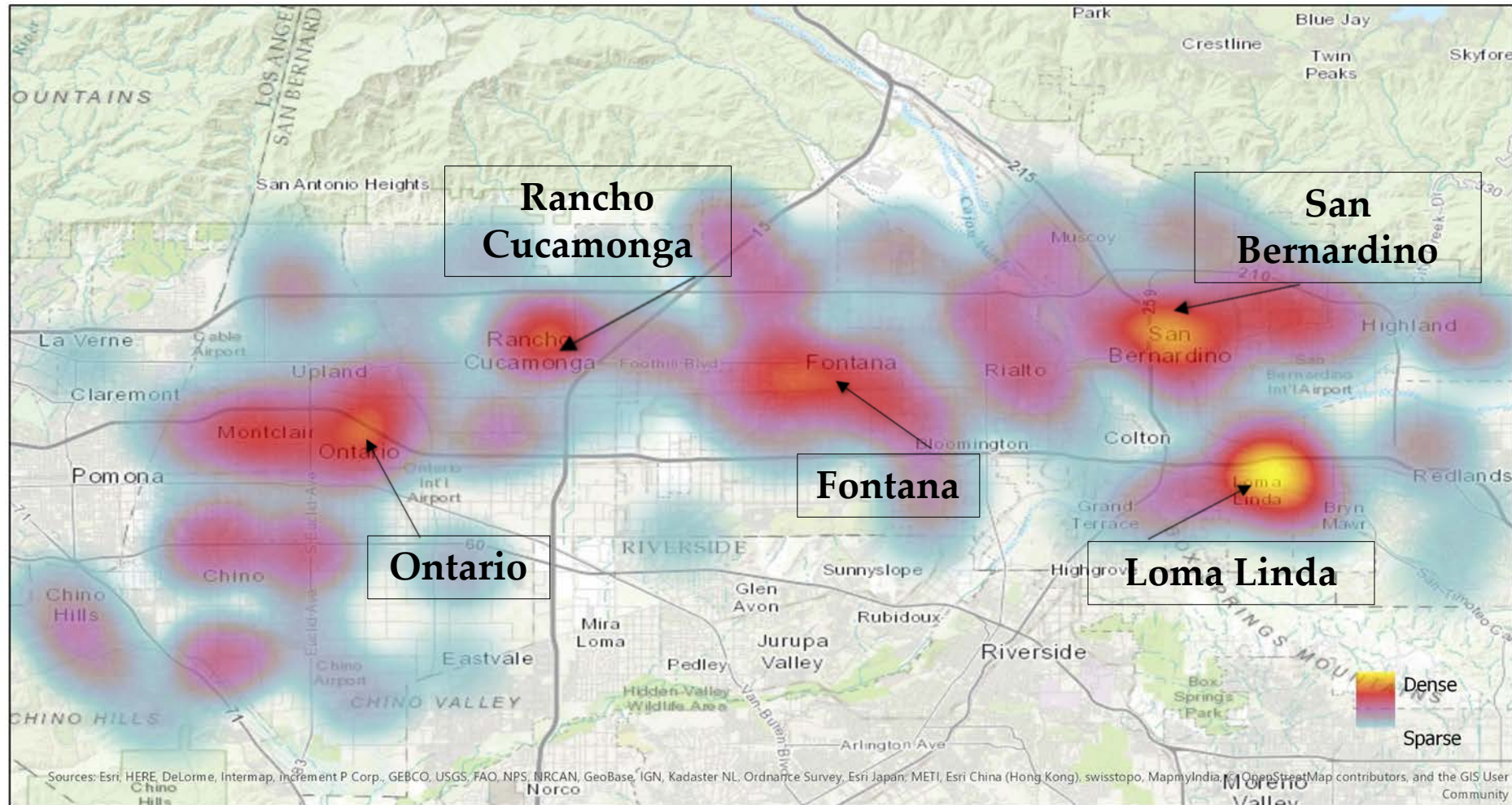
Tuberculosis incidence per 100,000 persons, 2017



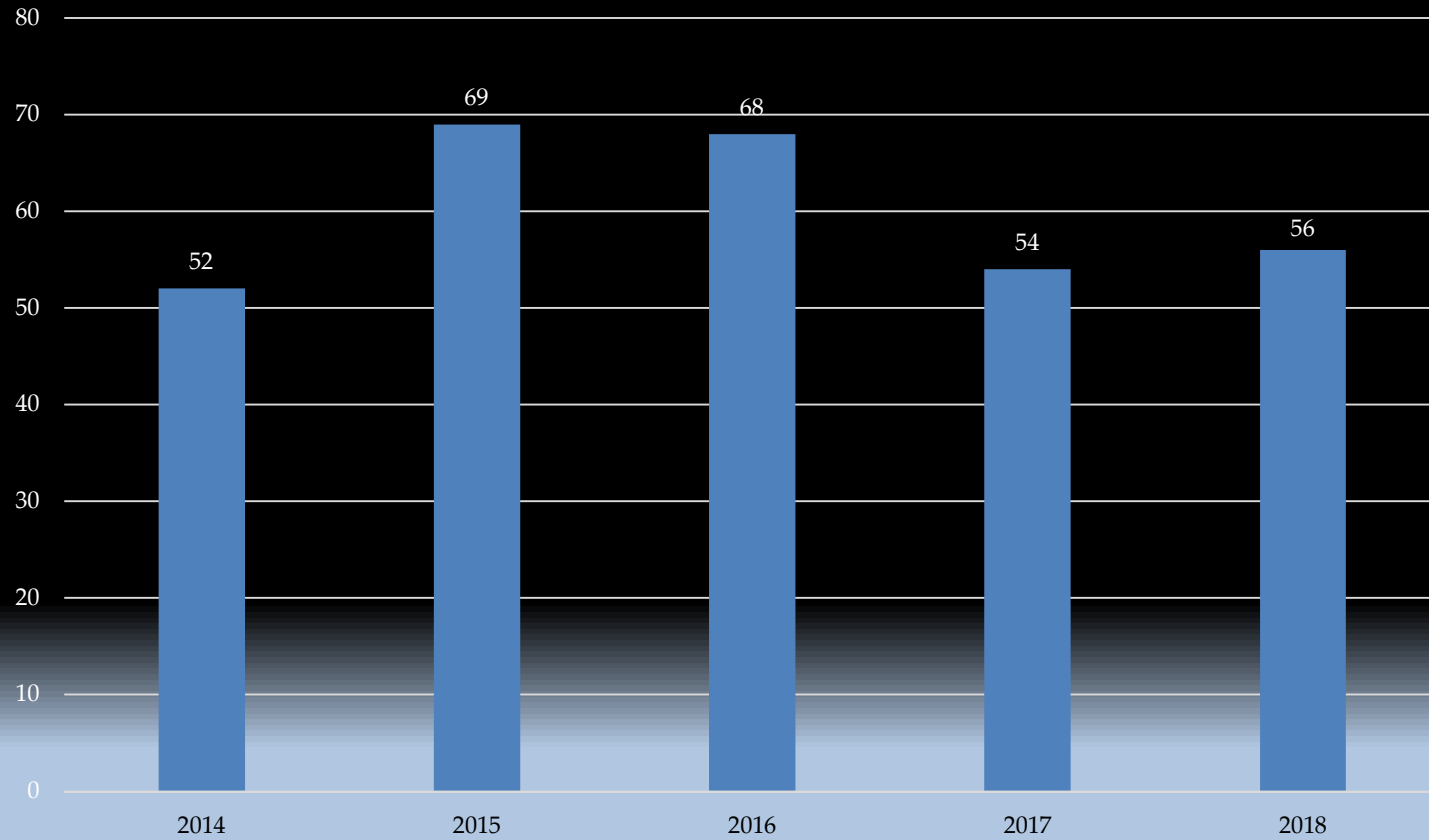
Note: Based on cases reported to the National Tuberculosis Surveillance System.

Source: MMWR. 2018 Mar 23;67(11):317-23

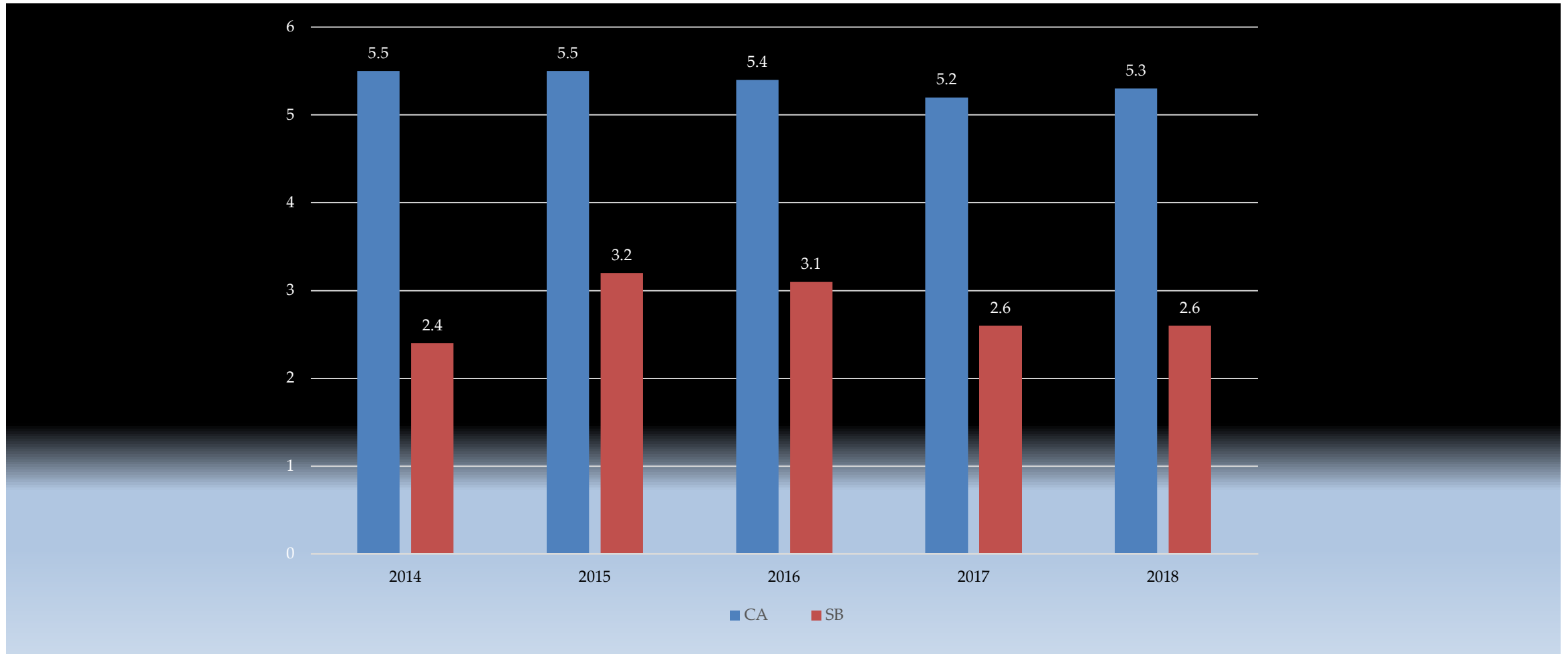
TB Hotspots in San Bernardino County



TB Case County



San Bernardino County compared to CA



What is TB?



Latent tuberculosis infection (LTBI) is the presence of *M. tuberculosis* organisms without signs and symptoms or radiographic or bacteriologic evidence of tuberculosis (TB) disease.^{1, 2}



Latent TB Infection



TB Disease

Latent TB Infection

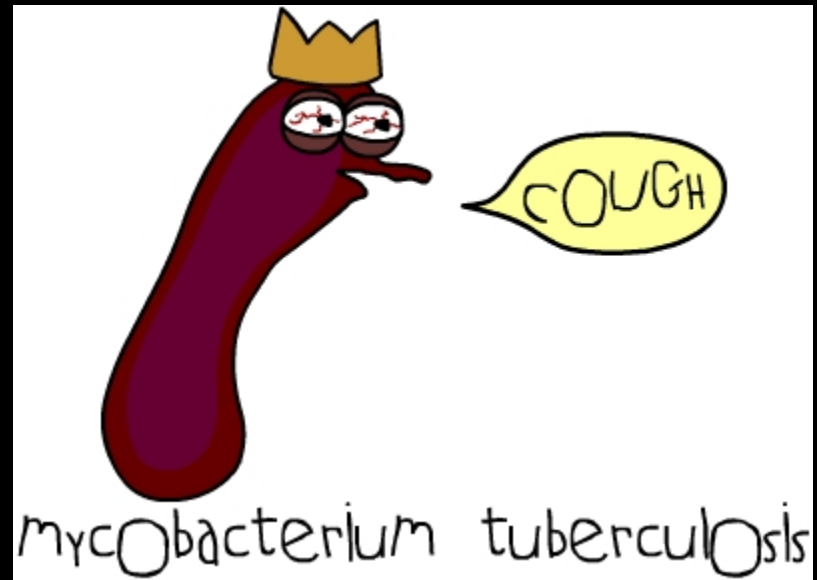
- The TB bacteria is present in their body.
- The person is not sick.
- They cannot spread the bacteria to others.



TB Disease

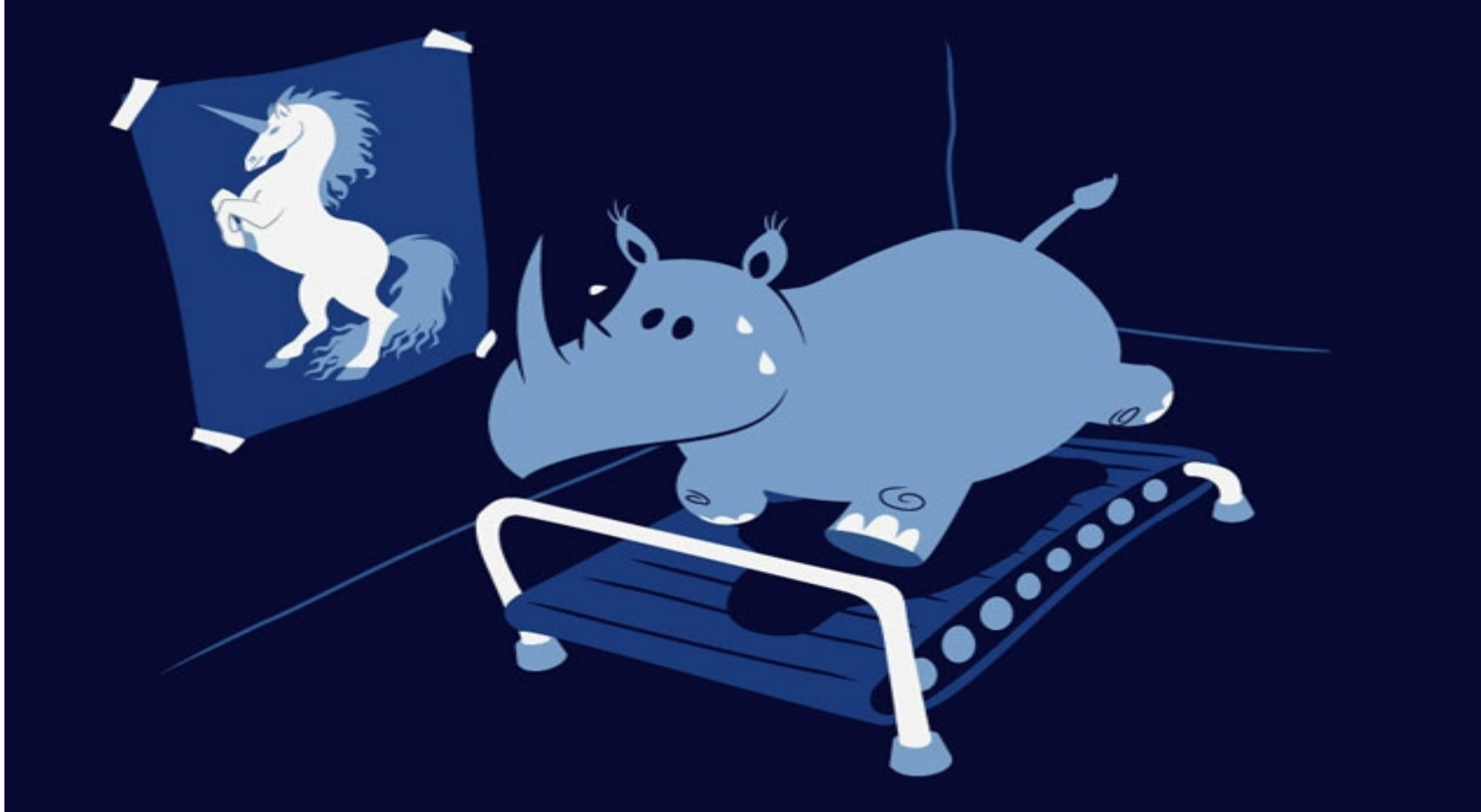
- These people are sick.
- They usually have one or more of the classic TB symptoms.
- They can spread the infection to others.





- In 2019, TB remains one of the world's leading infectious disease killer
- The US has comparatively low incidence of active TB
- More than 2 million Californians are infected with latent TB
- On average 1 in 10 will convert to active TB disease
- About 80% of all TB cases in California arise from reactivation LTBI

What are our goals in TB?



- TB elimination by 2100, a sustained annual decline of 3.9% is required
- Increases in LTBI testing and treatment completion would accelerate progress toward TB elimination
- Developing comprehensive and innovative approaches to diagnosing, treating, and monitoring LTBI



- TB elimination will not be achieved without steadfast engagement among public health partners and sustained prevention and control programs.
- Several accepted treatment regimens are available for Latent TB Infection (LTBI)

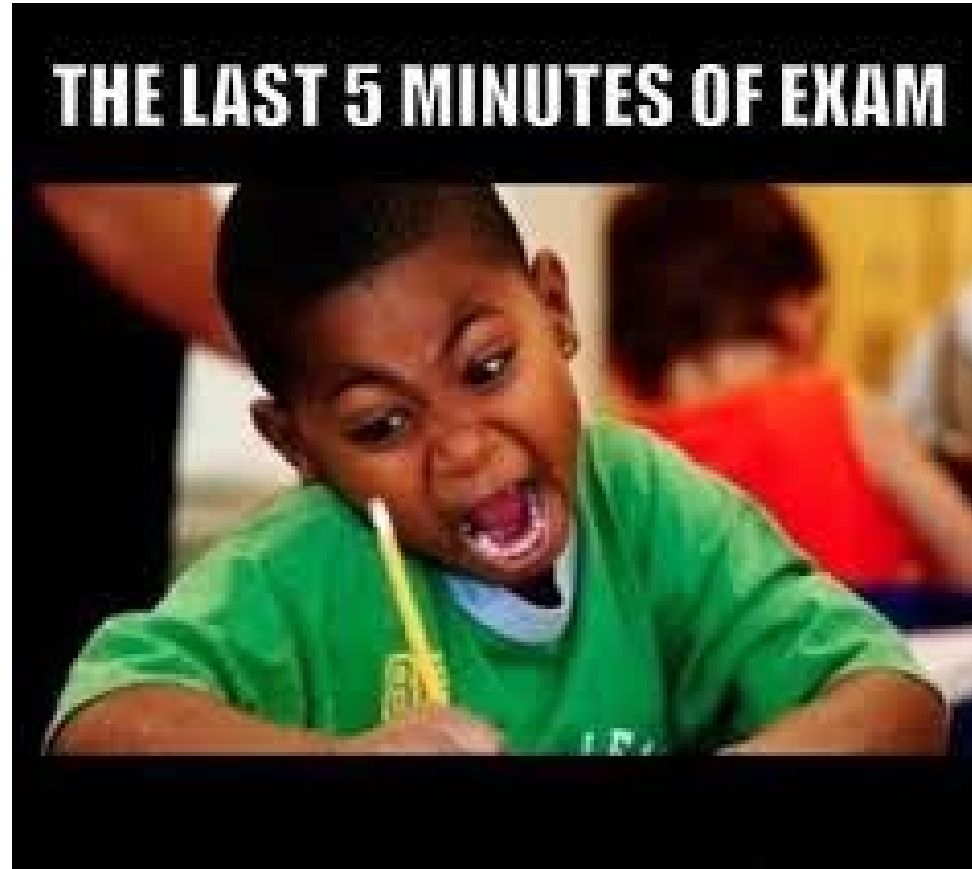
- 9-months Isoniazid (INH) Regimen
 - Daily
- 12-Dose (3 months) Isoniazid and Rifapentine [RPT] Regimen
 - Once weekly
- 4-months Rifampin (RIF) Regimen
 - Daily



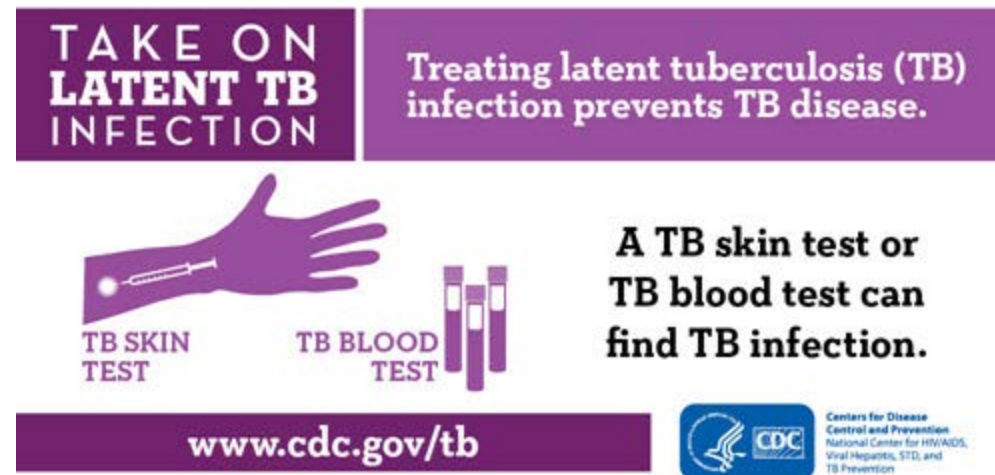
Technical Instructions

- Highlights
 - All applicants 2 years of age or older must have an IGRA test to determine immune response to M. tuberculosis antigens.
 - All applicants diagnosed with latent tuberculosis infection (LTBI) must be reported to the local health department.





- 1. TST (Tuberculin Skin Test)
 - A TST is an acceptable alternative in settings where an IGRA is unavailable, too costly, or too burdensome.
- 2. IGRA (Interferon-Gamma Release Assays)
 - Recommended for individuals 5 years or older



Mantoux: TB skin test, tuberculin skin test, and PPDs

- Use a tuberculin Syringe
- TST is an intradermal injection
- Apply 0.1 ml of mantoux solution
Into the inner surface of the forearm
- Goal is to make a wheal
- Gloves are not required





≥ 5 mm of induration

- Known or suspected to have HIV infection
- Recent contacts to an active case of pulmonary or laryngeal TB
- Fibrotic changes seen on chest radiograph consistent with TB
- Immunosuppressed individuals

≥ 10 mm of induration

- Individuals with no known underlying conditions

IGRA Interferon-Gamma Release Assays *Blood Tests for TB Infection*₁

- QuantiFERON®-TB Gold
- T-SPOT®.TB test (T-Spot)



What's New?




- U.S. Preventive Services Task Force recommends testing for TB as a part of standard preventive care for certain at-risk groups
 - Populations at increased risk for LTBI include persons who were born in, or are former residents of, countries with increased tuberculosis prevalence¹
 - Persons who live in, or have lived in, high-risk congregate settings (e.g., homeless shelters and correctional facilities)
- CDC recommends treatment of LTBI to reduce the number of persons developing TB disease

- Persons with silicosis, diabetes mellitus, chronic renal failure, gastric bypass
- Contacts to active cases
- People with weaken immune system ¹
- People who have symptoms of TB disease ²
- People who live or work where TB disease is more common ³
- People who use illegal drugs



Reporting Tuberculosis Infection

- Health care providers can submit a report of a TB infection, such as a positive skin tuberculin test or interferon-Gamma Release Assay (IGRA) using a Confidential Morbidity Report (CMR).
- Any active or suspect cases must be reported using the forms outlined in “Report a Case of Tuberculosis” section. These types of cases will not be accepted on a CMR form.



**TUBERCULOSIS DISCHARGE PLAN
SUSPECT / DISCHARGE REPORT FORM**
Phone: (800) 722-4794 Fax: (909) 387-6377

Hospital: _____ Phone: _____
 Contact person: _____ Fax: _____

(A) SUSPECT REPORT Date Submitted: _____

| | | | | |
|------------------------|---------------------|-------------------|---|------------|
| Name: _____ | | Sex: _____ | D.O.B.: _____ | Age: _____ |
| Current Address: _____ | | | Phone: _____ | |
| Legal Guardian: _____ | Payor Source: _____ | SSN: _____ | Country of origin/travel history ⁴ : _____ | |
| MR #: _____ | Location: _____ | Admit Date: _____ | | |

Clinical Information

| | | | | |
|--|--|--|--|--|
| Admission CXR ² : <input type="checkbox"/> NEAD <input type="checkbox"/> ABN-Cavitary <input type="checkbox"/> ABN Non-cavitary | | Current CXR: <input type="checkbox"/> Worse <input type="checkbox"/> Improved <input type="checkbox"/> No change <input type="checkbox"/> None | | |
| Patient weight/Kg _____ | IGRA blood test: <input type="checkbox"/> Yes <input type="checkbox"/> No | Previous HX of TB: <input type="checkbox"/> Yes <input type="checkbox"/> No | Major site of disease ³ : _____ | |
| Date: _____ | <input type="checkbox"/> Positive <input type="checkbox"/> Negative <input type="checkbox"/> Indeterminate | | | |

HIV Status⁵: _____ Provide copies of HIV results, CD4 count, and Viral Load for HIV positive patients⁵.

Why is patient a TB suspect? Symptoms CXR Other (explain) _____

TB Symptoms: Cough Hemoptysis Fatigue Fever/Chills Night Sweats Wt. loss Other: _____

Co-morbidities/comments⁶: _____

(B) DISCHARGE PLAN REQUEST Date Submitted: _____

BACTERIOLOGY⁷

| PULMONARY TB REQUIRES 3 CONSECUTIVE SPECIMEN SMEARS | | | | Specimen submitted for sensitivities to laboratory ⁸ <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |
|---|--------|-------|---------|--|--------|-------|---------|
| Specimen Date | Source | Smear | Culture | Specimen Date | Source | Smear | Culture |
| | | | | | | | |
| | | | | | | | |

TB Medication Regimen⁹

| Medication | Dosage | Start Date | Medication | Dosage | Start Date |
|----------------|--------|------------|------------|--------|------------|
| Rifampin | | | | | |
| INH | | | | | |
| PZA | | | | | |
| Ethambutol | | | | | |
| B ₆ | | | | | |

DISCHARGE PLANS¹⁰

| | | |
|---|--|--|
| Date of Discharge: _____ | Discharge to: <input type="checkbox"/> Home <input type="checkbox"/> SNF | Discharge Address if not home: _____ |
| Household: # of Adults _____ # of children _____ | ages of children _____ | # of immunocompromised _____ |
| Patient's Verbal Understanding of TB dx: <input type="checkbox"/> Yes <input type="checkbox"/> No | TB Meds: <input type="checkbox"/> Yes <input type="checkbox"/> No | Home/LTACH / SNF Isolation: <input type="checkbox"/> Yes <input type="checkbox"/> No |
| | # of days of meds _____ | |
| TB Care provided by ¹¹ : _____ Other _____ | Follow up TB provider Name: _____ | Medical Provider Name: _____ |
| Health Dept: 606 E. Mill St. San Bernardino, CA 92415 | Phone: _____ | Phone: _____ |
| Phone Number: 800-722-4794 | Appt Date: _____ | |
| Appt Date: _____ | | |
| Final DX (if not TB): _____ | | |

(C) TUBERCULOSIS CONTROL PROGRAM REVIEW

| | | |
|--|---|---|
| Discharge Approved: <input type="checkbox"/> Yes <input type="checkbox"/> No | Problems Identified: <input type="checkbox"/> Yes <input type="checkbox"/> No | Action required prior to approval: <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Comments: _____ | | |

Signed: _____ Title: _____ Date: _____ Time: _____
 For: SUSAN STRONG, NP, MSH, Tuberculosis Control
 Rev. Jan. 31, 2017

- Fax all records and completed forms to (909) 387-6377.
- Follow up with a phone call to one of our TB nurses at (800) 722-4794.
- For additional questions go to <http://wp.sbcounty.gov/dph/programs/cds/emerging-diseases/>

- Visit the Centers for Disease Control website for updated information
www.cdc.gov/tuberculosis
- Visit the California Department of Public Health website for information
www.cdph.ca.gov/programs/tuberculosis.
- Visit the San Bernardino Public Health Department general information
<http://wp.sbcounty.gov/dph/programs/cds/>
- CTCA-California Tuberculosis Controllers Association
www.ctca.gov
- SNTC-Southeastern National Tuberculosis Center
www.sntc.medicine.ufl.edu/

- <https://academic.oup.com/cid/article/64/2/111/2811357>
- https://www.huffingtonpost.in/urvashi-prasad/busting-five-popular-misc_b_8210240.html
- <https://choma.co.za/articles/403/myths-and-misconceptions-about-tb>
- <https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/TBCB-TB-Provisional-Tables-2017.pdf>
- <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/TB-Disease-Data.aspx>
- NIH – National Institute of Health
- NTCA - National Tuberculosis Controllers Association
- Stewart RJ et al. MMWR 2018 Mar 23;67(11):317-23



- San Bernardino Department of Public Health Disease Control Section
- Phone number: 1-800-722-4794