TB AND LTBI IN PRIMARY CARE

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AGENDA

TB Incidence Data

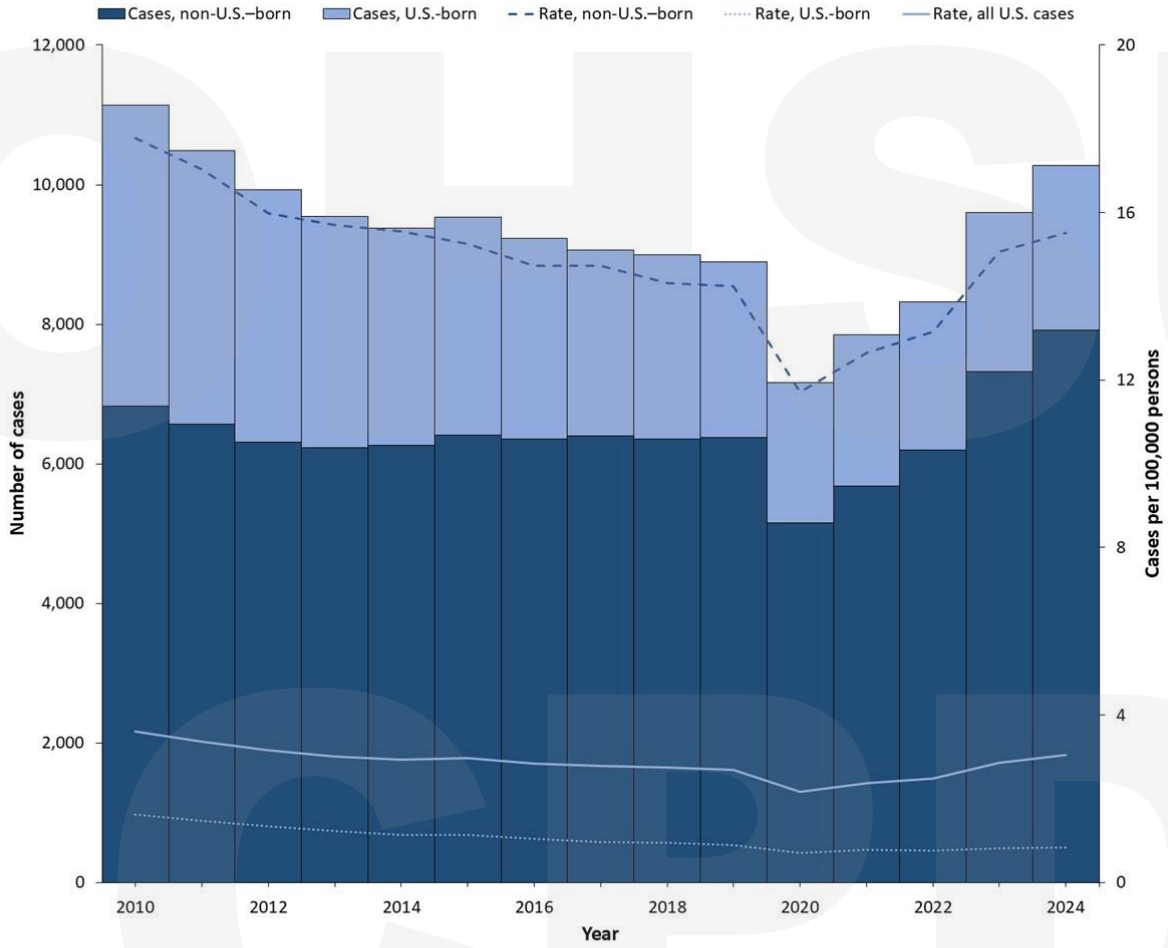
TB Transmission

Who is at highest risk?

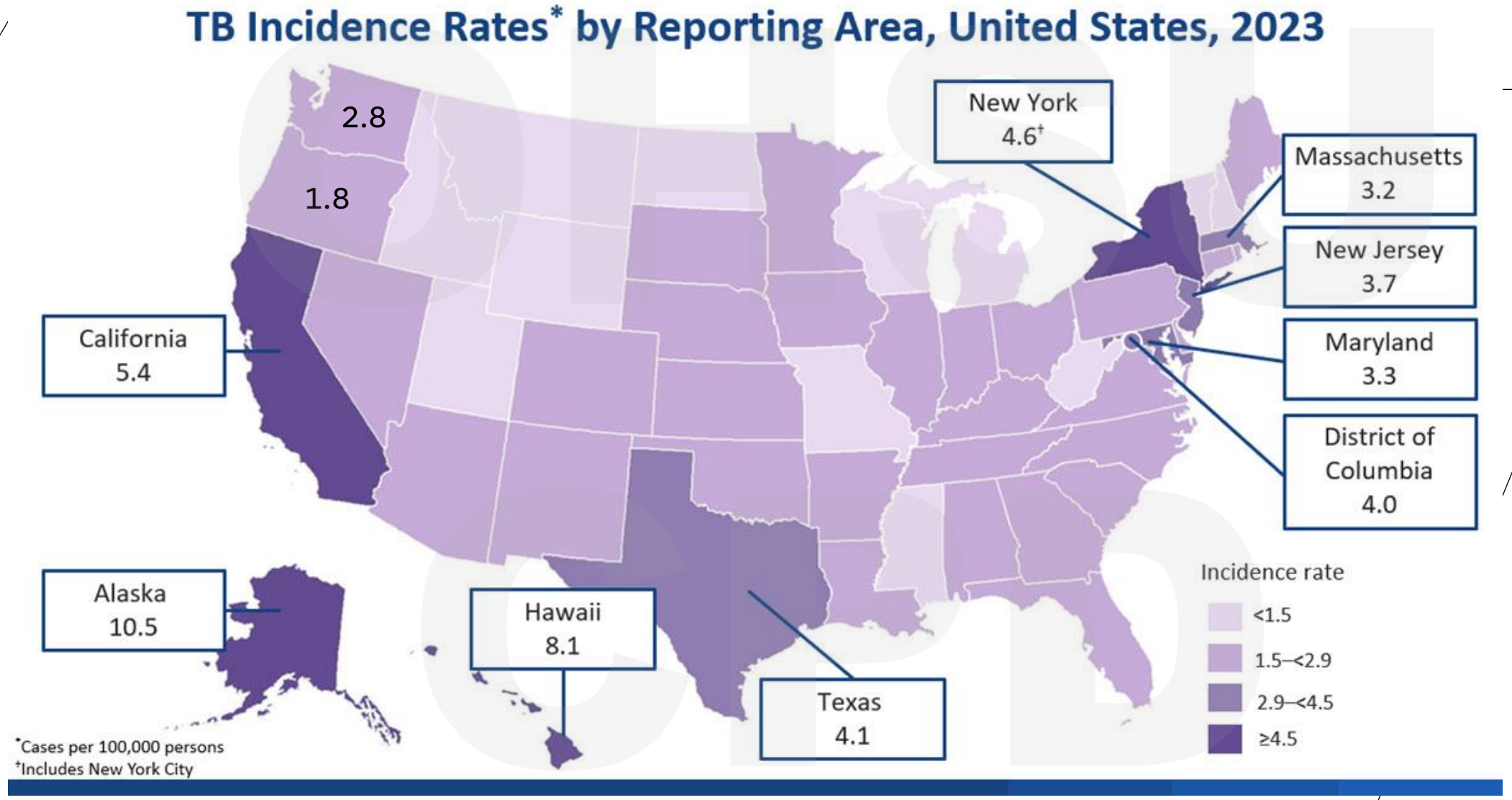
TB diagnostics: LTBI and Active TB

LTBI Treatment

Tuberculosis cases* and rates† by birth origin§ — United States, 2010–2024



*Case counts are based on data reported to the National Tuberculosis Surveillance System as of March 4, 2025.
†Annual tuberculosis rates were calculated as cases per 100,000 persons. Rates for all U.S. cases were calculated using midyear population estimates from the U.S. Census Bureau's 2010-2020 National Intercensal Population Totals and Vintage 2024 data; rates by birth origin were calculated using midyear estimates from the Current Population Survey.
§Persons born in the United States or certain U.S. territories or elsewhere to at least one U.S. citizen parent are categorized as U.S.-born. All other persons are categorized as non-U.S.–born. Case counts for persons without a known origin of birth are not represented in the figure.

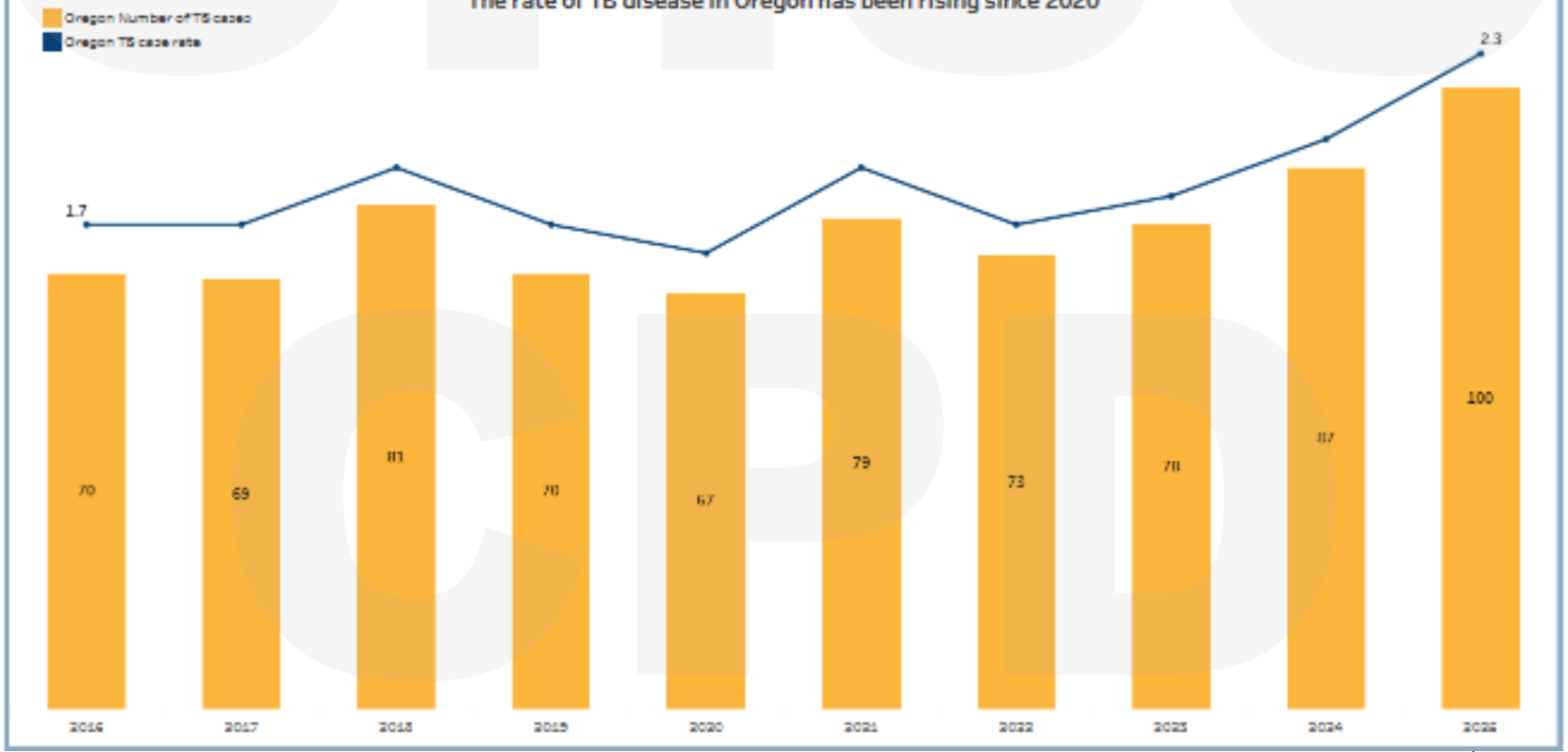

TB Incidence Rates* by Reporting Area, United States, 2023
2.8
1.8
New York
4.6†
Massachusetts
3.2
New Jersey
3.7
Maryland
3.3
District of Columbia
4.0
California
5.4
Alaska
10.5
Hawaii
8.1
Texas
4.1
Incidence rate
<1.5
1.5–<2.9
2.9–<4.5
≥4.5
*Cases per 100,000 persons
†Includes New York City

Tuberculosis disease (TB) in Oregon

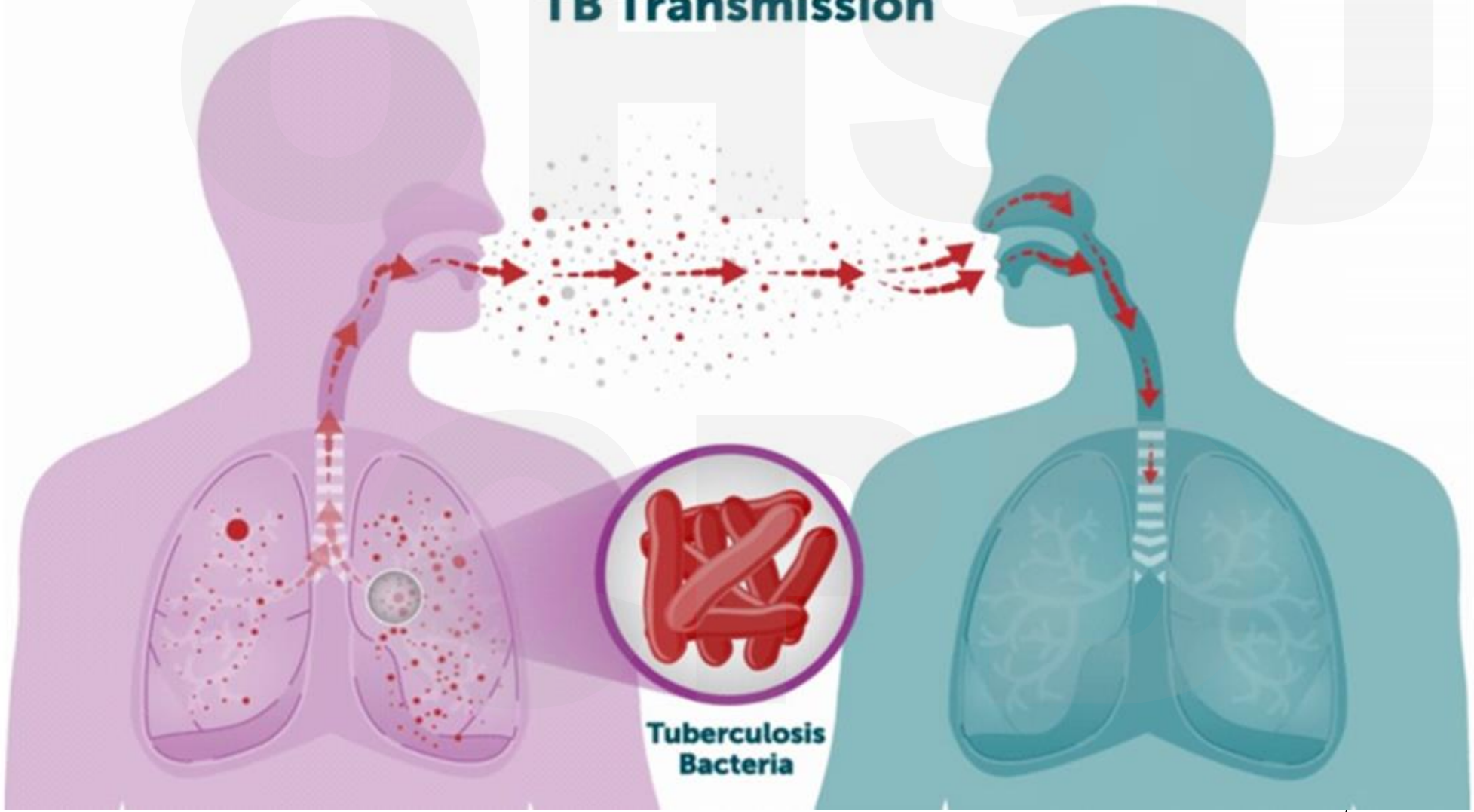
Home Page | County data | Demographics | Risk Factors | Clinical | Treatment | Glossary

Click tabs above to navigate to other pages | Hover over the graphs for more information

Home Page



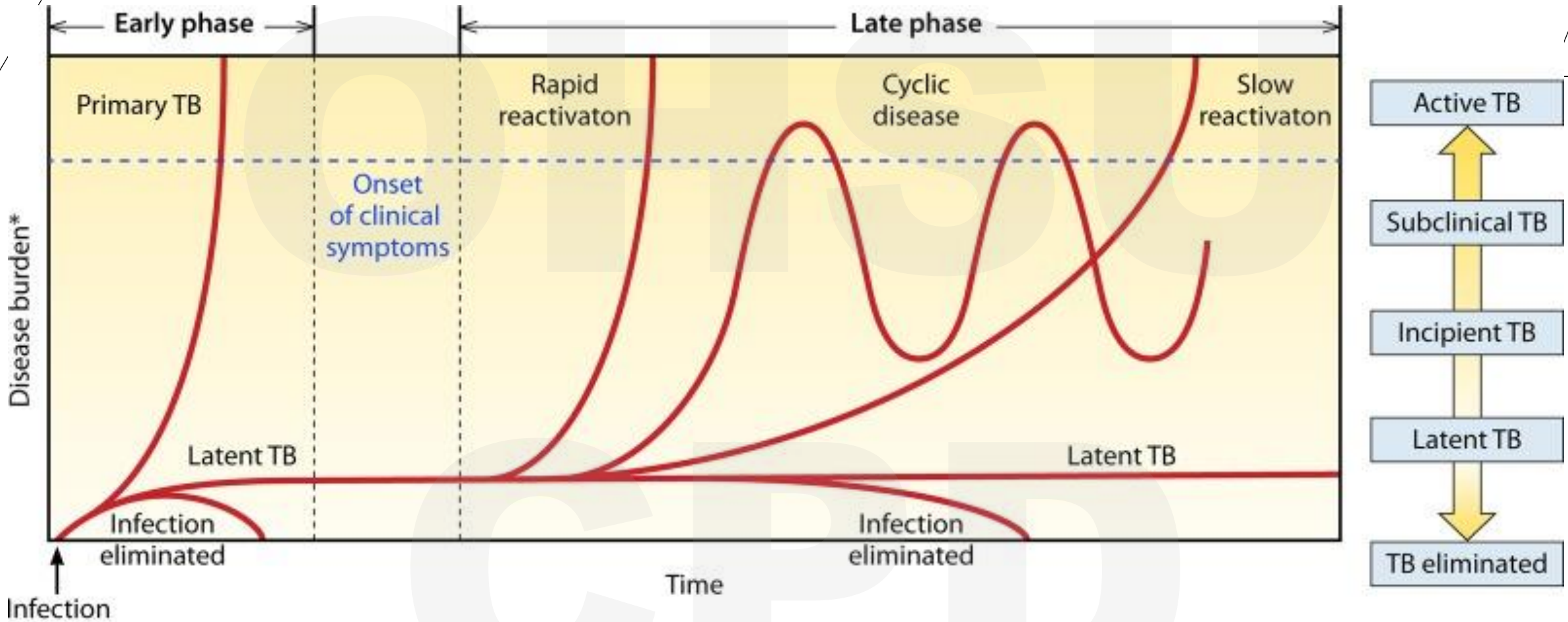
TB TRANSMISSION


TB Transmission
Tuberculosis
Bacteria

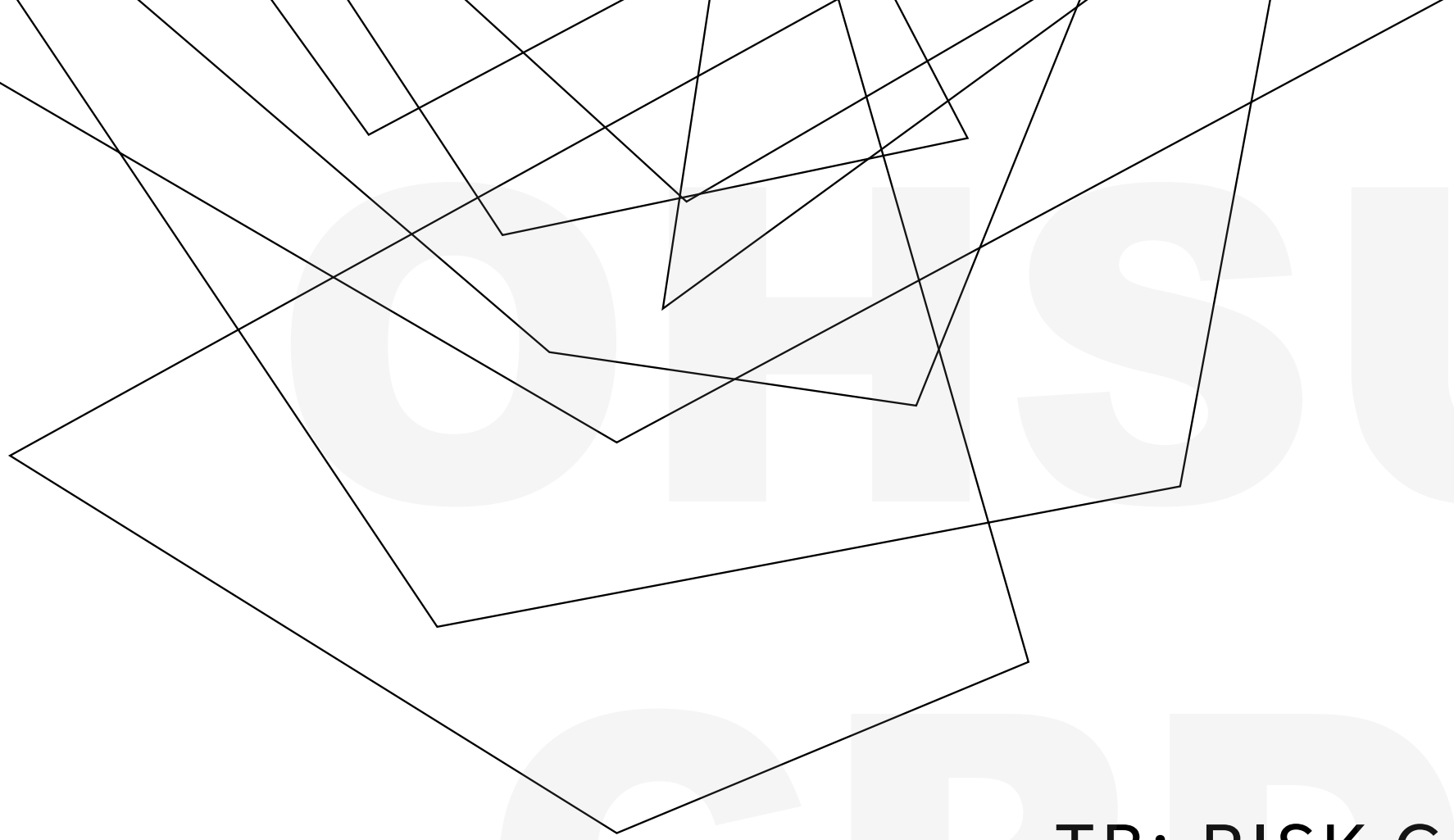
WHO TRANSMITS TB

- **We know that people with more TB in their lungs are more likely to transmit on an individual level**
  - Cavities
  - Smear microscopy positive
- **As much as 35% of global TB transmission is from people with subclinical TB**
  - Usually abnormal CXR
  - Few or no symptoms

Most people worldwide do not know where they acquired TB



*Rising TB burden implies an increase in abundance of TB and pathogen biomarkers, compartment-specific changes in immunological responses, and a decrease in the probability of disease resolution in the absence of treatment.



TB: RISK GROUPS

WHO IS AT HIGHEST RISK OF INFECTION

More TB in the community, more risk to an individual

App for iPhone: WHO Global TB report 2025

Congregate settings

People who are incarcerated, or have lived in shelters

Household contacts of people with TB disease

WHO IS AT HIGHEST RISK OF DISEASE?

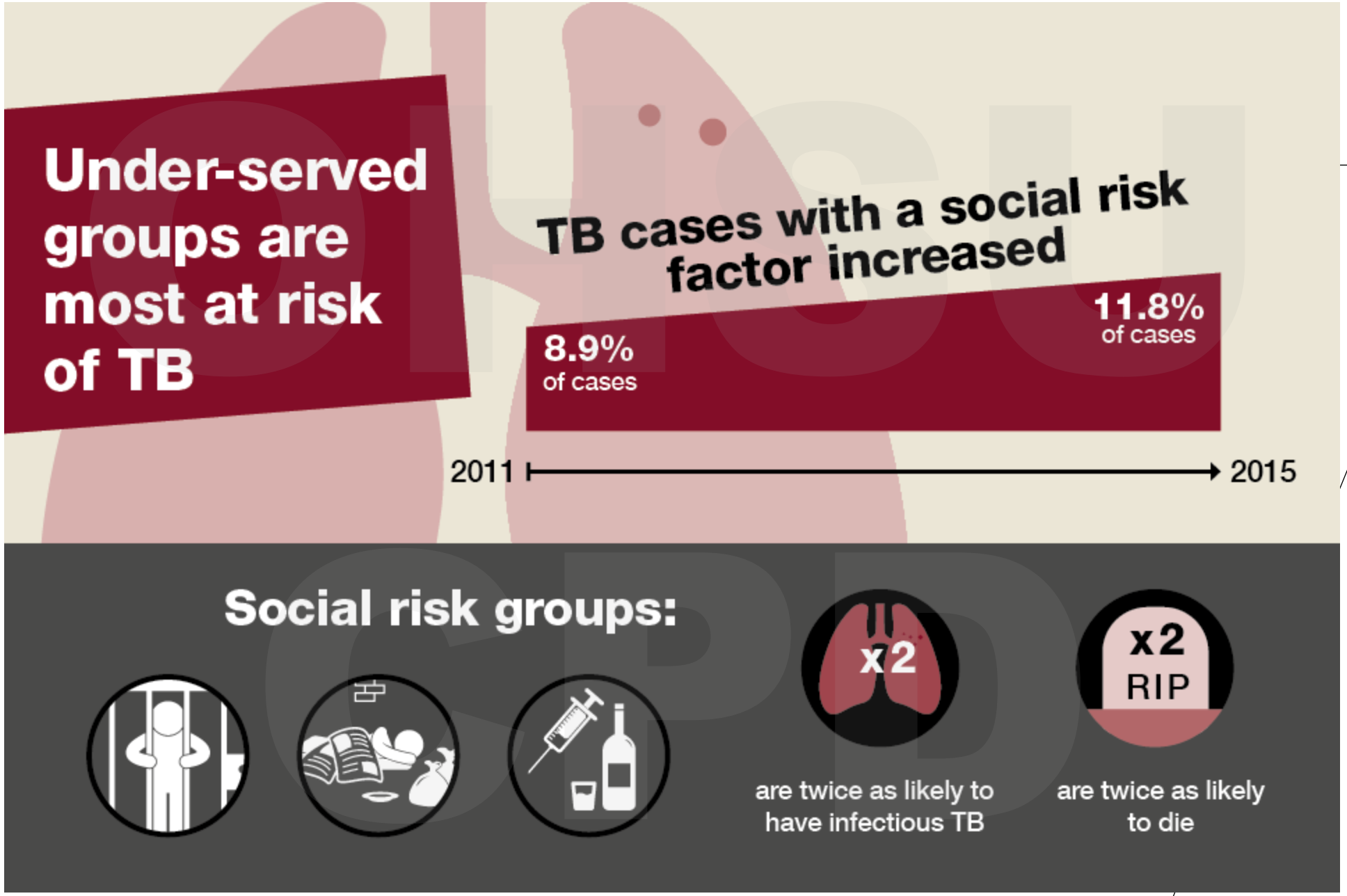
Immunocompromised hosts:

- **HIV, autoimmune disease on treatment, transplant**
- **But also: diabetes, people who smoke**

Children

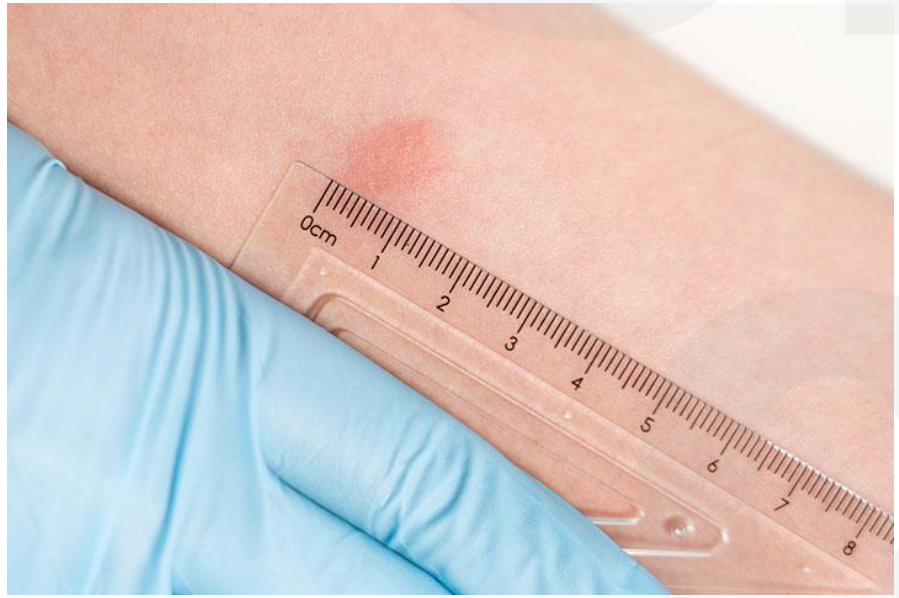
- **Age 5 or under highest risk**
- **Age 5-12 relatively protected**
- **Age 13 or older – adult type disease**

How much lifetime does a person have to progress from latent to active TB?

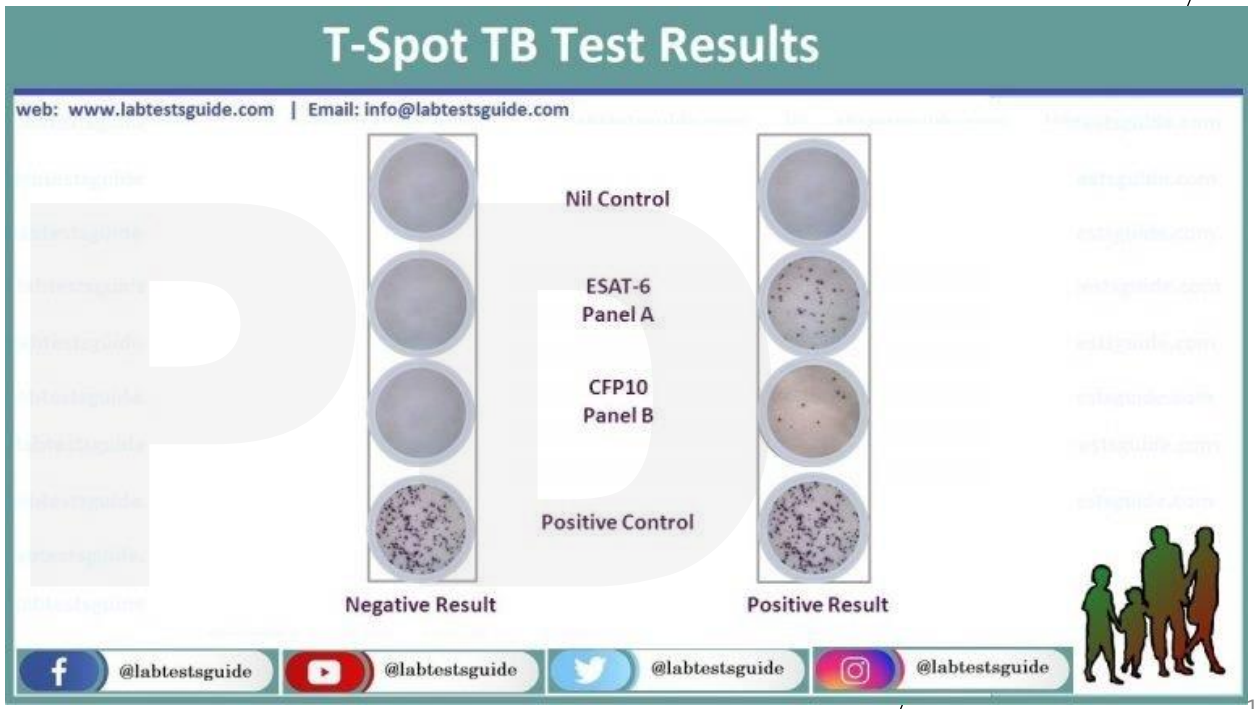

Under-served groups are most at risk of TB
TB cases with a social risk factor increased
8.9% of cases
11.8% of cases
2011
2015
Social risk groups:
x2
are twice as likely to have infectious TB
x2 RIP
are twice as likely to die

TB DIAGNOSIS

LATENT TB



Quantiferon Nil Result	1.24
Quantiferon TB1 Ag minus Nil Result	6.91
Quantiferon TB2 Ag minus Nil Result	6.18
Quantiferon TB Mitogen minus Nil Result	0.31
Quantiferon TB Interpretation	Positive !



LATENT TB TESTING

PPD

- Difficult to interpret in people who have had BCG
- Unable to tell if a lack of response is true negative or poor immune response
- Requires people to return for reading
- Has cross-reactivity with environmental mycobacteria

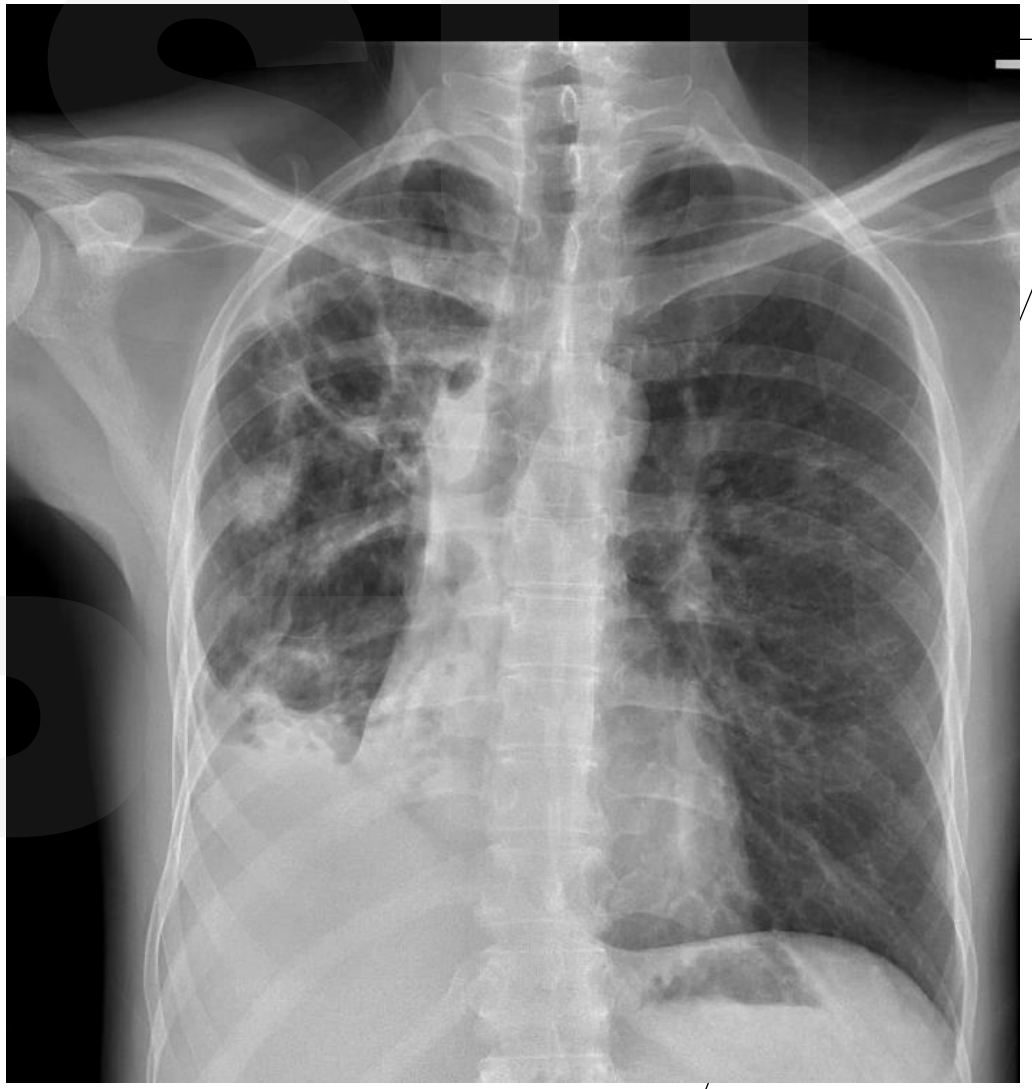
IGRAs (QFT and T-spot)

- QFT is often indeterminate in acutely ill people, immunosuppressed
- No cross-reactivity with BCG
- Limited cross-reactivity with other mycobacteria (M. marinum, M. kansasii)

Both:

- Reduced sensitivity in people with active TB
- Will likely be positive in people who have been treated for active TB – no need to treat again

QFT TB1 Ag Value IU/mL	**0.44**
QFT TB2 Ag Value IU/mL	**0.35**
QFT Nil Value IU/mL	**0.10**
QFT Mitogen Value IU/mL	**2.44**
QFT-TB Gold Plus Clt Inc Negative	**Negative**



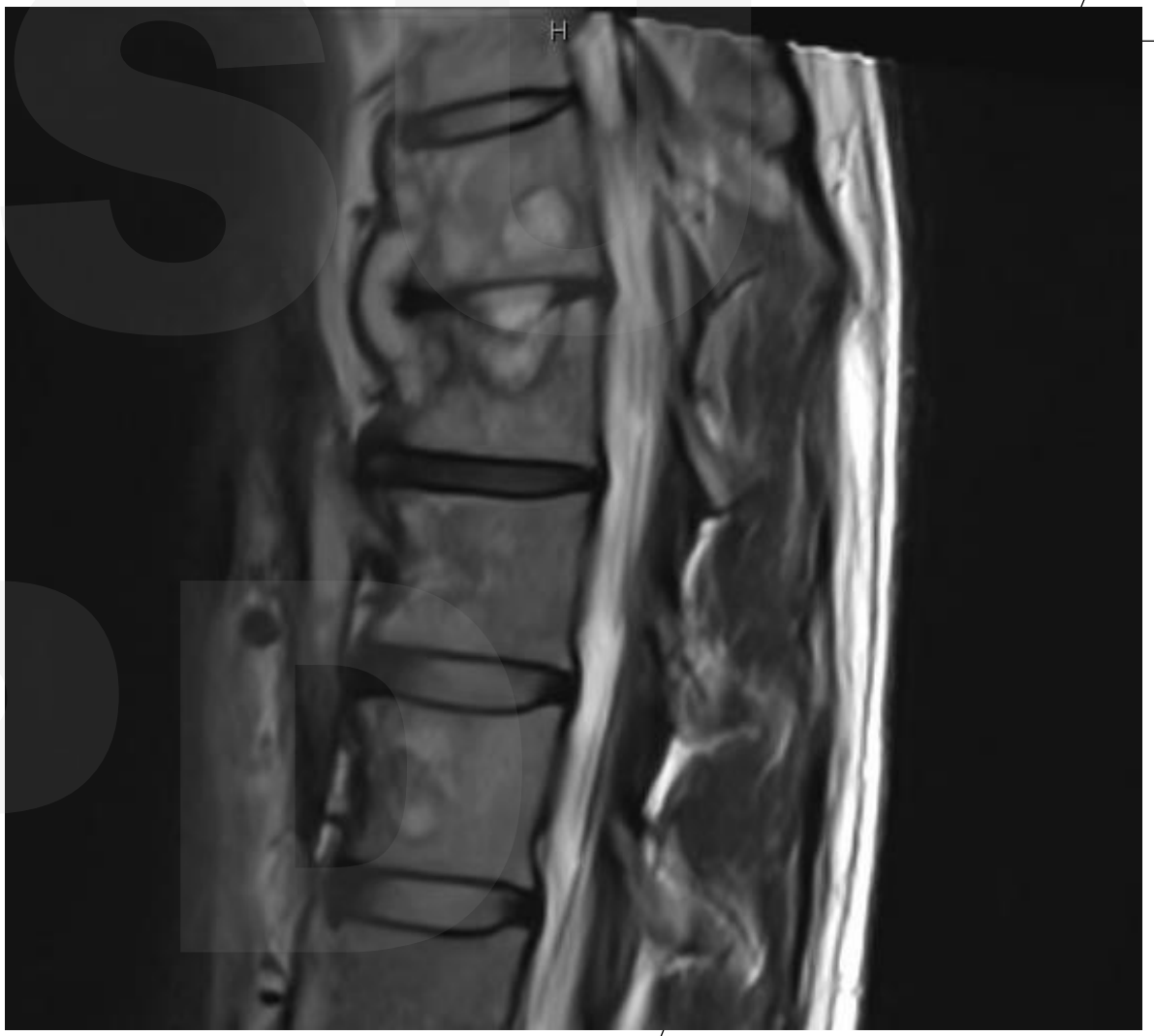
ACTIVE TB

Most (>65%) of people with subclinical or active TB are negative on traditional symptom screens

Everyone with positive LTBI testing needs a CXR

No delays recommended for pregnancy

AND a good history and physical – not all TB is pulmonary



For pulmonary TB

Sputum sent for AFB smear and culture x 3: At least 8 hours apart

Also should have an MTB PCR on 2 samples

For TB anywhere else

Sputum testing AND a biopsy or fluid specimen sent for AFB smear, culture, PCR AND pathology

Not sure if someone needs sputum based on radiology report? TB clinic will happily review the case

LTBI TREATMENT

LTBI REGIMENS

4 months rifampin

2 pills daily for adults

Well tolerated

Major drug interactions – check carefully

Liver toxicity is rare, < 0.5%

Cytopenias can occur

Nausea, itching, rash more common

Probably the best tolerated and most completed regimen

LTBI REGIMENS

3 months rifapentine + INH weekly

Short – and only 12 doses in total

In adults, usually 9 pills on dosing day

Med interactions are less than rifampin, but still present

More liver toxicity than rif alone, but less than daily INH

Flu-like syndrome – rifapentine. Fatigue, body aches

A great choice for people who want to get it over with

LTBI REGIMENS

3 months Rif + INH

Rarely used, limited advantages over 4 months rif alone

Well tolerated in children and lower pill burden than INH + rifapentine

Not frequently used

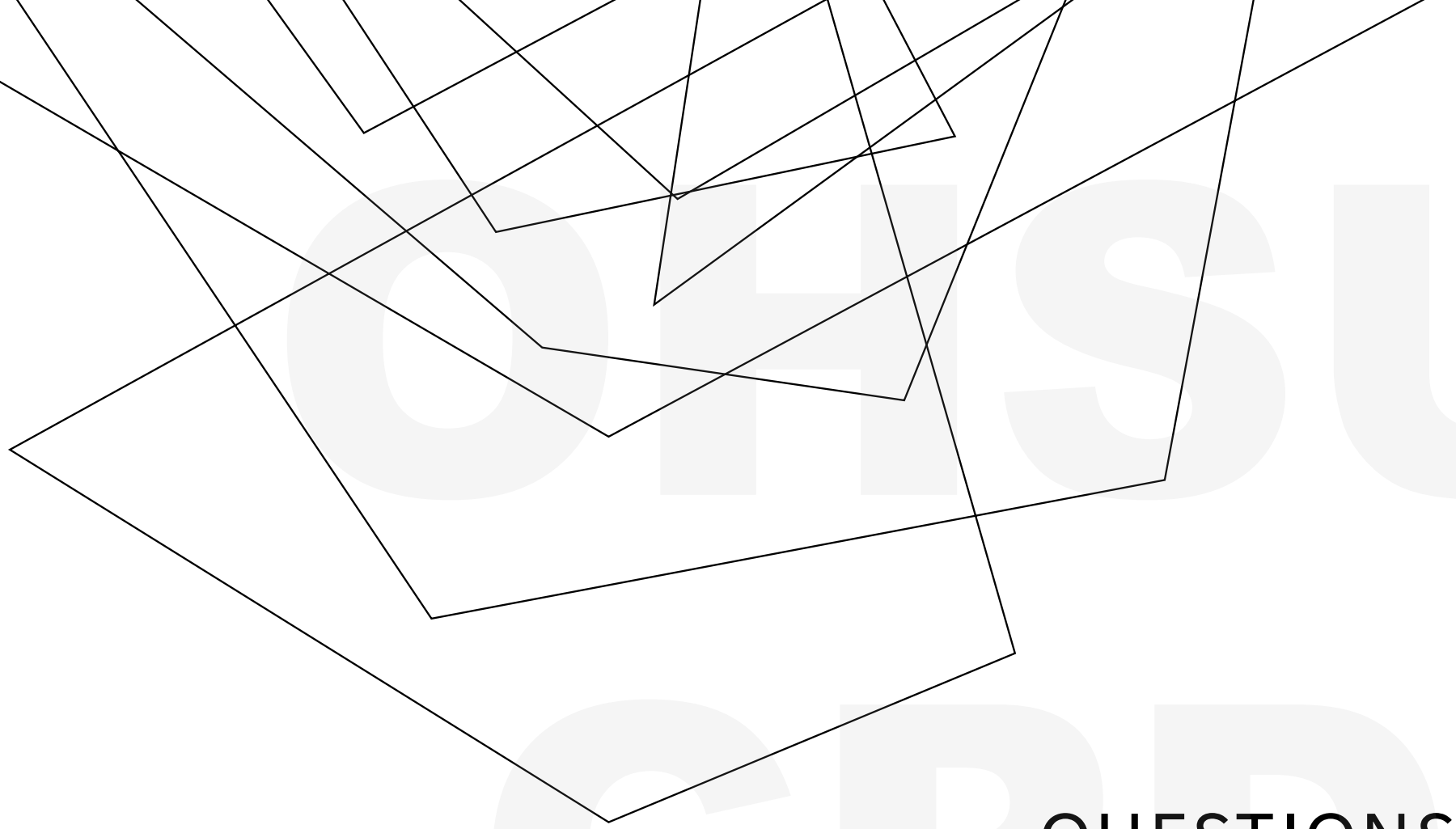
LTBI REGIMENS

Alternative options

6-9 months INH – Poor completion rates and more hepatotoxicity, but less drug interactions

1 month daily INH + rifapentine – not FDA approved, but may be useful in time-sensitive situations, ie pre organ transplant

6 months levofloxacin – used in known contacts of people with rifampin and INH resistant TB. Warning, estimated efficacy is ~50% (compared to >95% for other regimens)



QUESTIONS?

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