

Tuberculosis in California Children

May 2023

Background

Tuberculosis (TB) disease is an illness caused by the bacteria *Mycobacterium tuberculosis*. Children, particularly children <5 years of age, are more likely to develop severe, life-threatening forms of TB (e.g. central nervous system TB). Even when not lethal, severe TB can leave children with significant developmental delays and disabilities. TB, caused by a strain known as *M. bovis*, can also occur in children due to consumption of contaminated, raw dairy products and has the same serious consequences as TB spread through the air.

Purpose

This fact sheet reports information on the patterns of TB among children <18 years of age in California and outlines work by the California Department of Public Health (CDPH) TB Control Branch (TBCB) to address childhood TB.

Pediatric TB continues to occur in California with significant disparities and consequences

During the most recent 5-year period **from 2017–2021, 426 children developed TB disease in California and four children with TB died.** On average, at least **one child is diagnosed with TB disease each week in California.**

Compared with non-Hispanic White children in California, TB rates were:

- **33 times higher in non-Hispanic Asian/Pacific Islander (PI),**
- **19 times higher in Hispanic, and**
- **10 times higher in non-Hispanic Black children.**

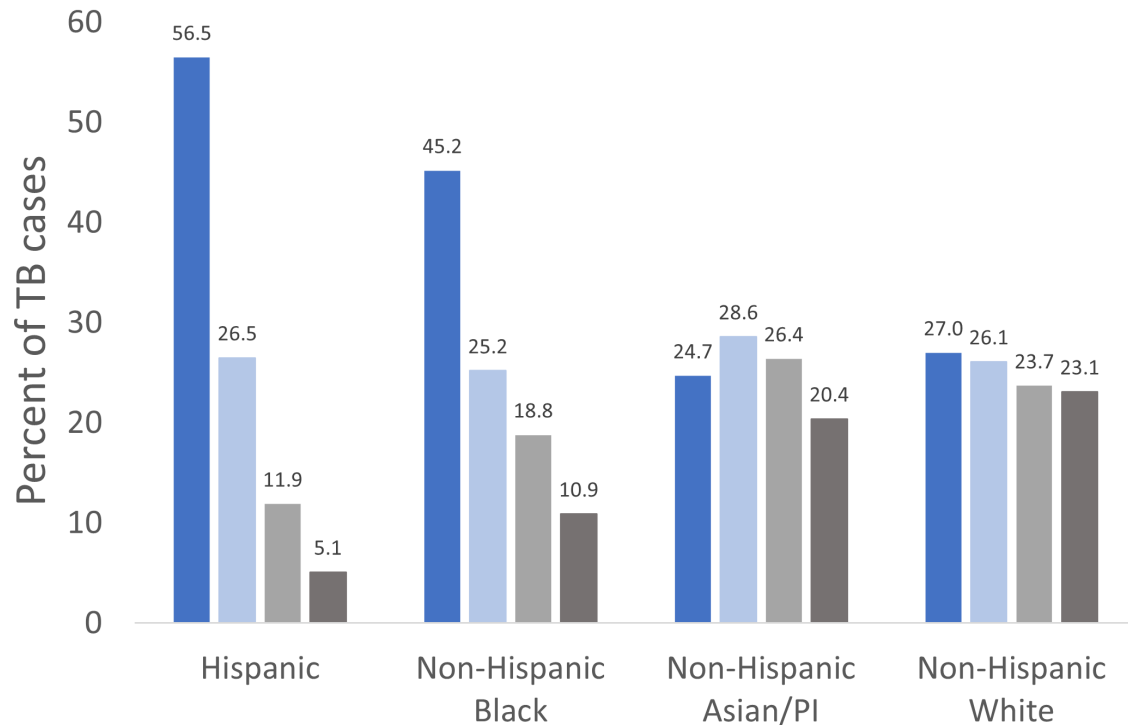
**Each week
in California,
at least one child
on average is
diagnosed with TB.**

Since 2000, children with TB are disproportionately more likely to live in the least advantaged neighborhoods (lowest quartile according to the California Healthy Places Index):

- The **youngest children** with TB are slightly more likely to live in the least advantaged neighborhoods.
- **Hispanic and non-Hispanic Black children** with TB are much more likely to live in the most advantaged neighborhoods.

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Pediatric TB cases by race/ethnicity by HPI quartile, 2000-2021



***M. bovis* in contaminated dairy products can cause TB disease**

- *M. bovis* is most commonly found in cattle and other animals such as bison, elk, and deer. TB caused by *M. bovis* can occur in children due to consumption of contaminated, raw dairy products.
- Hispanic children are disproportionately affected by TB caused by *M. bovis* from raw dairy consumption.
- This condition has the same serious consequences as TB spread through the air and is even more likely to disseminate.

***M. bovis* TB disproportionately affects Hispanic children and is even more likely to disseminate than TB spread through the air.**

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TB has catastrophic consequences for California children and families

In 2021, **22% of children with TB in California had disseminated disease and 15% had TB invading the central nervous system.** Most occurred in children <5 years of age. These frequencies are much higher than seen among adults in California during the same time period (13% and 2%, respectively) and have been increasing as a proportion of all cases, particularly among children <5 years old.

TBCB investigated the outcomes of central nervous system TB among children who survived (Outcomes of Pediatric CNS TB in CA, 1993–2011 | J Ped Infect Dis Soc 2018):

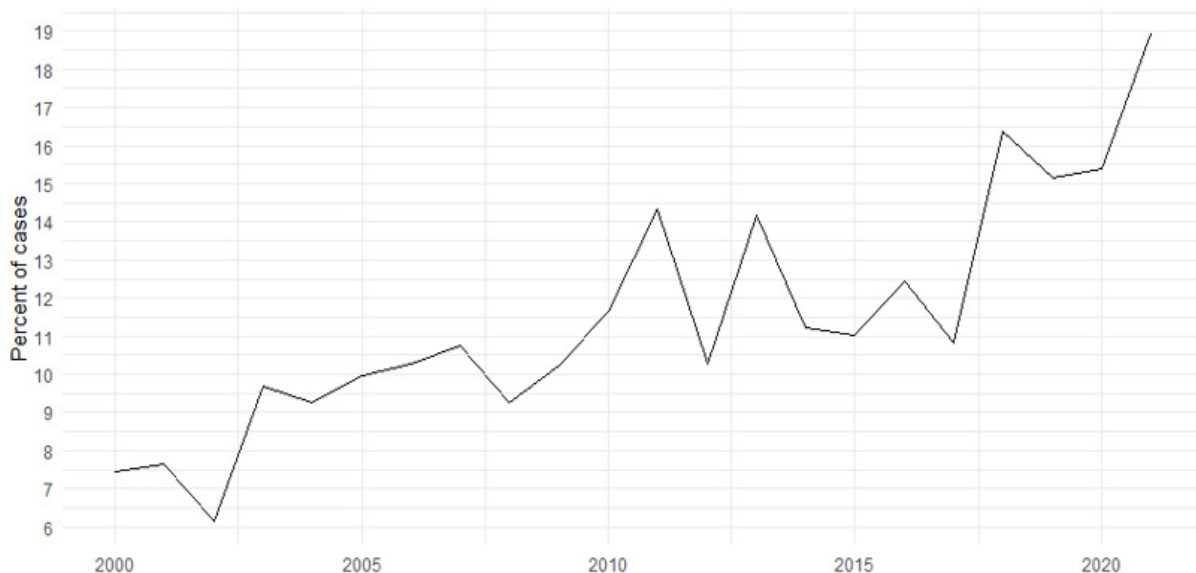


Outcomes of Central Nervous System TB

- After treatment, shorter life expectancy
- >80% of children with central nervous system TB die or permanently disabled, even when TB is diagnosed rapidly after onset

Because of serious risk of residual disability, prevention in children (and preventing disease among their adult caregivers) is a priority.

Percent of cases <25 years old with extensive disease, 2000-2020



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TB is preventable by finding and treating TB in the latent stage (LTBI)

More than 2 million Californians (or about 6% of the population) have LTBI, including many children, and most are untreated. Many do not know they have LTBI. Scaling up the testing and treatment for LTBI in California is the focus of the [California Tuberculosis Elimination Plan, 2021-2025](#).

More than 2 million Californians have LTBI, including many children, and most are untreated.

Failure to prevent TB in adults has serious consequences for young children. The below pediatric TB case that occurred recently in California illustrates catastrophic consequences that can be averted by detecting and treating LTBI.

Case Example

- A young woman tested positive for LTBI during an early prenatal visit.
- Despite multiple visits during and following her pregnancy, she did not receive treatment for LTBI.
- Within a year of giving birth, the mother developed infectious TB and passed it to her otherwise healthy infant.
- Her infant developed TB meningitis, has had multiple lengthy hospitalizations, and is left with profound disability.
- The parents and their disabled child have needed extensive support and services.

Tuberculosis in California Children

The CDPH has a critical role in preventing pediatric TB. Below are interventions undertaken by the CDPH Tuberculosis Control Branch to prevent and control the spread of TB among children.

CDPH Tuberculosis Control Branch Actions

- Provides **subject matter expertise/consultation** for pediatric TB and LTBI, responding to >100 pediatric related inquiries from 2017-2021.
- Established a **Pediatric TB Network** to educate clinicians about difficult aspects of care for children with TB and innovate solutions.
- Provides **technical assistance** to healthcare providers to reduce LTBI care cascade attrition.
- Assures prompt **identification and evaluation** of children exposed to TB in California.
- **Detects increases in pediatric TB cases** and geographic and molecular case clusters in partnership with CDC. CDC found 38 alerts in California from 2018-2021, involving 161 pediatric cases and 18 jurisdictions.
- Researches novel strategies to **streamline LTBI testing/treatment** in the healthcare settings, with CDC and health system partners.
- Developed the [California Tuberculosis Elimination Plan, 2021-2025](#) which outlines strategies and a timeline to **increase LTBI testing and treatment** among populations at high risk to avert preventable deaths, illness, and pediatric TB:
 - a) develop campaigns for populations at high risk by 2022;
 - b) establish statewide LTBI measures by 2023;
 - c) establish measurement in top clinical settings by the end of 2023; and
 - d) increase LTBI treatment of groups already tested by 2025.