



Tuberculosis in Iowa - 2023

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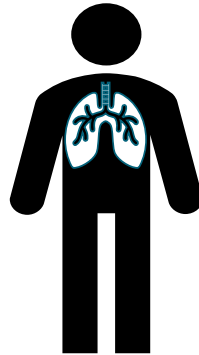
Health and
Human Services

Tuberculosis

Iowa: 2023

What is Tuberculosis (TB)?

Tuberculosis (TB) is a disease caused by a bacterium called *Mycobacterium tuberculosis*. It primarily attacks the lungs but can affect any part of the body including the kidney, spine, and brain.



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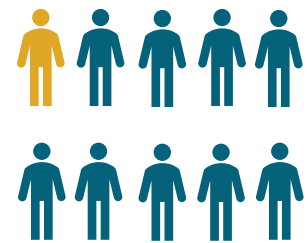
TB cases reported in Iowa in 2023

The mission of the TB Control Program is to eliminate TB disease in Iowa.

TB Disease vs. Latent TB infection (LTBI):

Individuals with **TB disease** have active TB germs that multiply and destroy tissue in their body. Individuals usually experience symptoms and are capable of spreading the germs to others if the disease is in the lungs or throat.

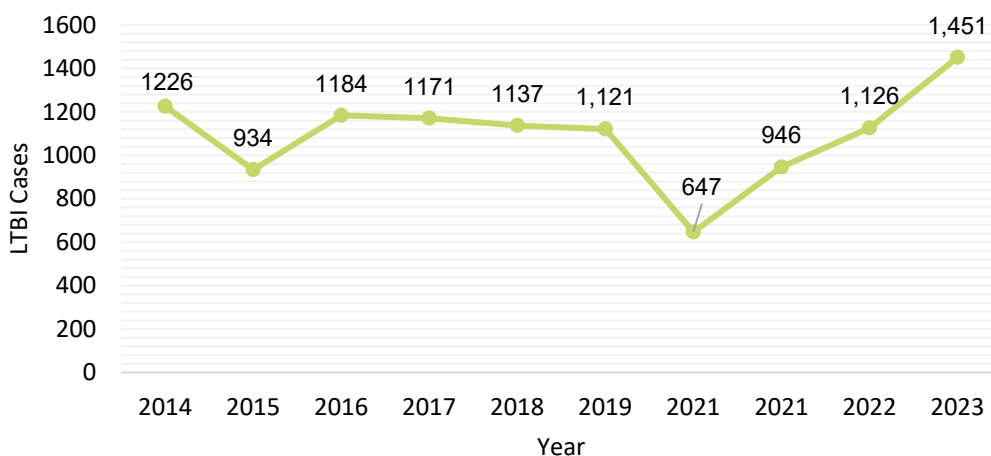
Individuals with **Latent TB Infection (LTBI)** have TB germs that are inactive. These individuals do not experience symptoms and cannot spread the TB germs to others. Although LTBI can develop into TB, treatments are available to prevent LTBI from progressing to TB disease.



1 in 10

According to the CDC, on average, **1 in 10 people with LTBI who do not get treatment** will become sick with TB disease in the future.

Iowa Latent Tuberculosis Infections by Year 2014 2023

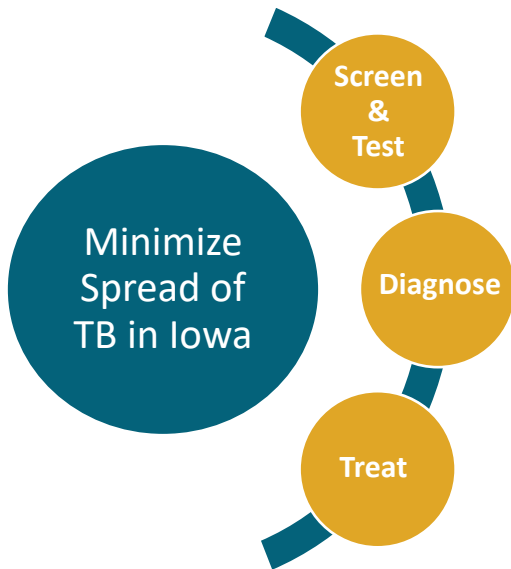


Although LTBI is not a reportable condition in Iowa, the majority of providers use the program to manage the LTBI regimen for their patients. In 2020, the global pandemic resulted in the program recording the lowest count of LTBI during the decade at 647. However, in 2023 there were 1,451 LTBI cases reported, the highest number over the last decade.

Signs and Symptoms

How does TB Spread?

TB spreads through the air from person to person. An individual becomes infected by breathing in the bacteria from an infected person.



Collaboration with clinicians and local public health agencies (LPHAs) is essential to minimizing the spread of TB in Iowa.

TB Disease:

Symptoms of TB disease depend on the site of disease and where the bacteria is growing. TB bacteria usually grows in the lungs (Pulmonary TB) and can cause symptoms such as:

- **bad cough that lasts 3 weeks or longer**
- **chest pain**
- **coughing up blood or sputum** (phlegm from deep inside the lungs)

Other symptoms of TB disease include:

- weakness or fatigue
- unexplained weight loss
- no appetite
- chills
- fever
- drenching night sweats

Latent TB Infection (LTBI):

People who have latent TB infection do not have any symptoms and do not feel sick. They cannot spread TB to others.

IOWA TB RISK FACTORS

- Persons who have immigrated from areas of the world with high rates of TB
- Close contacts of a person with infectious TB disease
- In both of these categories, **'Think TB Over Pneumonia'** when patients present with the classic symptoms of respiratory illness or have an abnormal chest x-ray.

TB Cases in Iowa

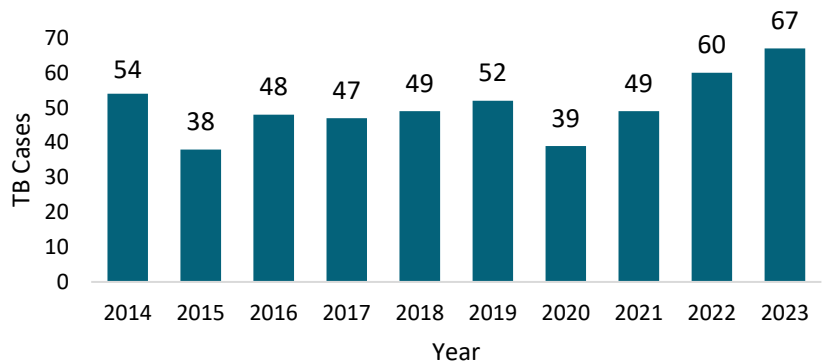
Tuberculosis Case Reporting:

- TB disease is a reportable condition in Iowa. **Both clinically suspected and laboratory confirmed tuberculosis** disease are to be reported.
- Cases of pulmonary disease should be reported to Iowa Department of Health and Human Services TB Program within one working day and three working days for extrapulmonary TB (EPTB) disease.
- Latent tuberculosis infection (LTBI) is not a reportable condition in Iowa, however the Iowa Department of Health and Human Services provides medication to treat LTBI to prevent progression to TB disease.

TB Cases: 2014-2023

Over the last 10 years, confirmed TB cases in Iowa have ranged from 38 to 67 cases per year. In 2023, 67 TB cases were confirmed in Iowa, the highest number of cases since the 1990s. TB cases have been increasing for the last 3 years.

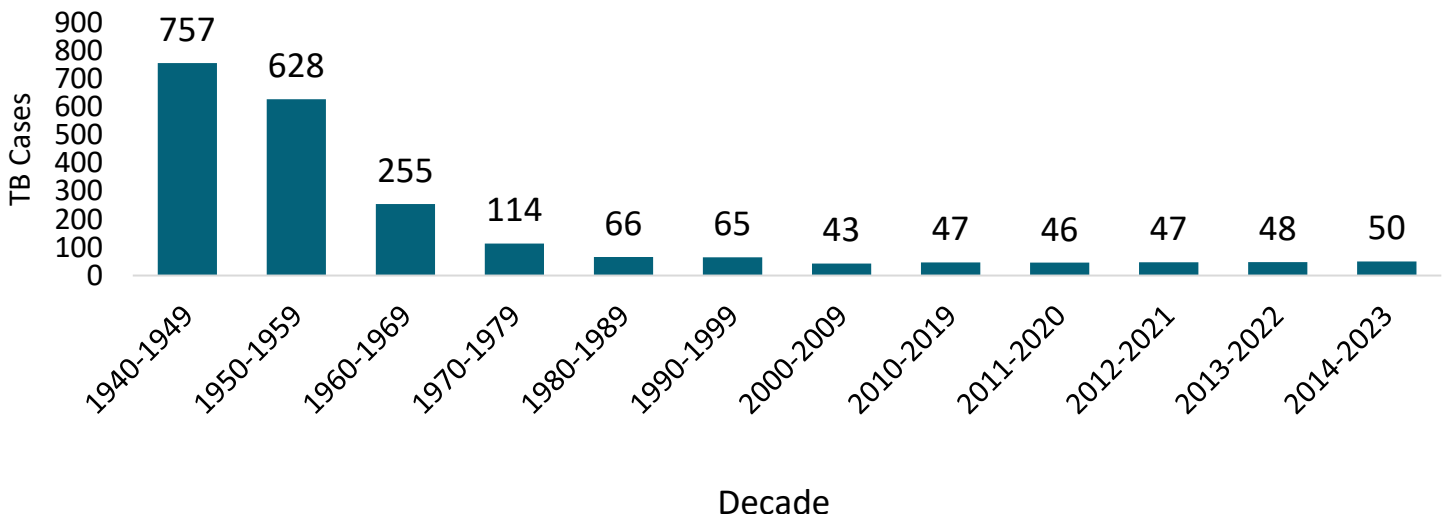
Iowa Tuberculosis Cases by Year 2014-2023



TB Cases by Decade

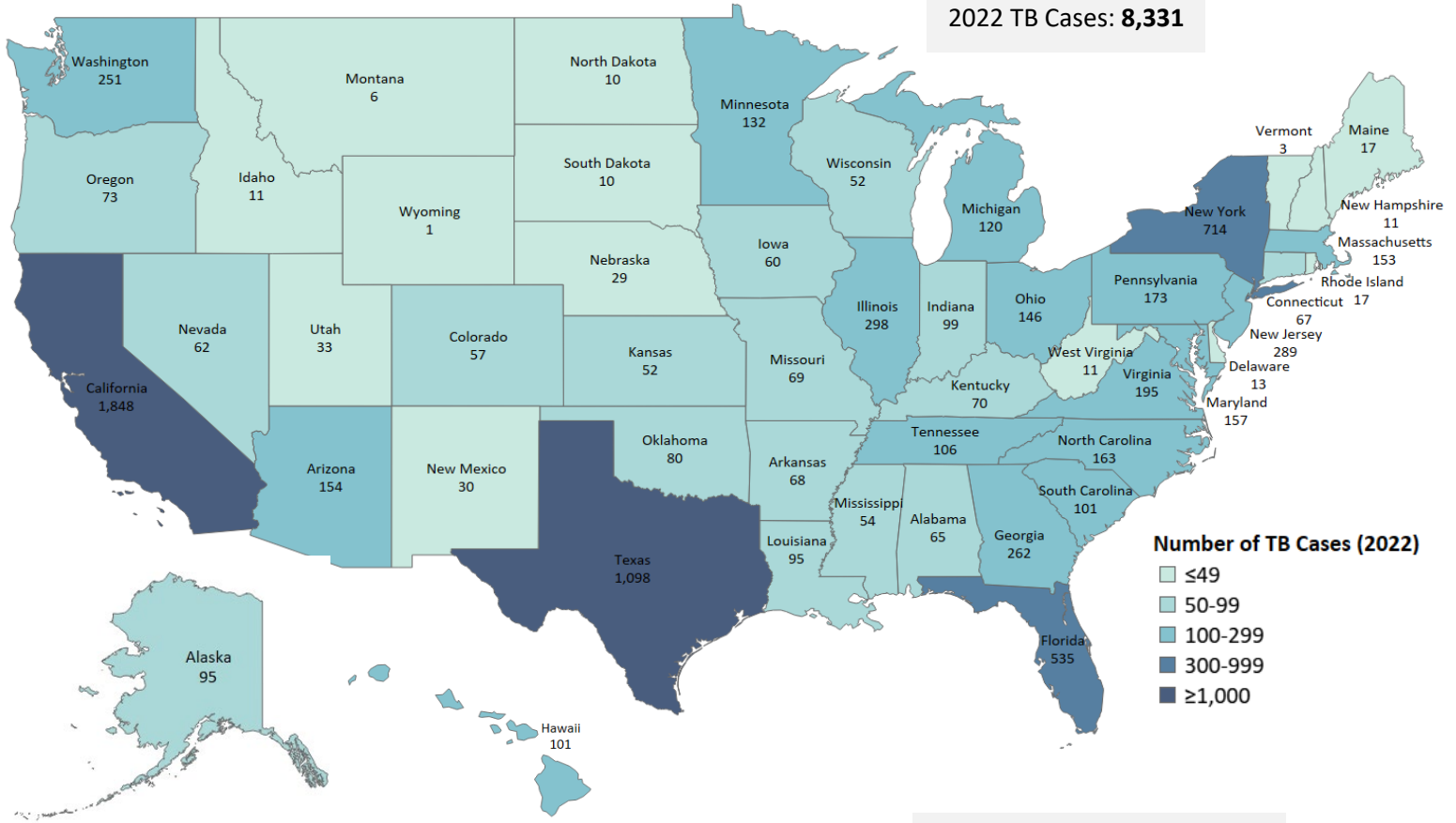
The average number of TB cases each year by decade has significantly decreased since the 1940s. The discovery of streptomycin in 1944 and Isoniazid (INH) in 1952 heralded the modern era of TB treatment. The use of INH signaled the *'beginning of the end'* for TB sanatoriums. However, science soon learned that single drug therapy resulted in treatment relapse. This led to the eventual use of a multi-drug treatment approach that demonstrated TB to be curable. Today, the use of an initial four-drug therapy to cure TB is the standard of practice in TB Control.

Average Number of Iowa TB Cases Each Year by Decade



2022 Cases in the U.S by Reporting Area*

United States
2022 TB Cases: **8,331**

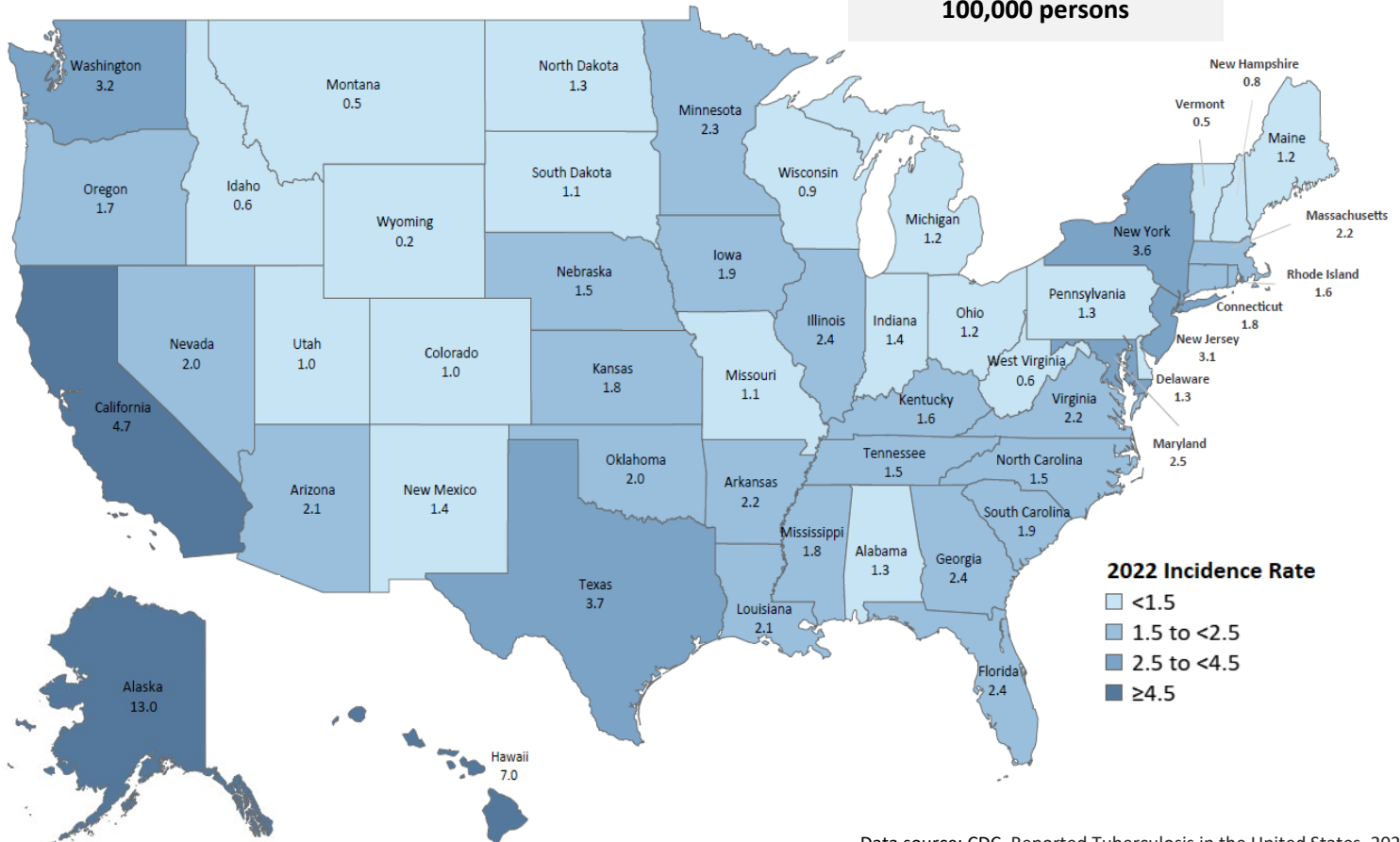


Number of TB Cases (2022)

- ≤49
- 50-99
- 100-299
- 300-999
- ≥1,000

2022 TB Incidence Rates in the U.S by Reporting Area*

United States
2022 Incidence Rate: **2.5 per 100,000 persons**



2022 Incidence Rate

- <1.5
- 1.5 to <2.5
- 2.5 to <4.5
- ≥4.5

-Data source: CDC, Reported Tuberculosis in the United States, 2022
 -New York incidence rate includes New York City
 -Cases per 100,000 population
 -2023 data not yet available

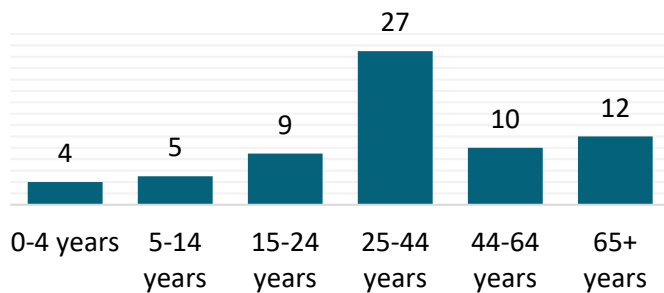
TB Cases in Iowa: Demographic Characteristics

TB Cases by Age Group

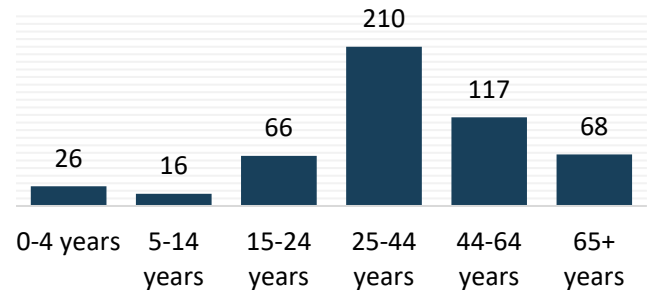
In 2023, 40% (27 cases) of confirmed TB cases in Iowa occurred among individuals 25-44 years of age followed by individuals 65 years and older (18%), 44-64 years (15%), and 15-24 years of age (13%). Nine cases occurred in individuals under 15 years of age, accounting for 13% of the total confirmed TB cases in 2023.

Similarly, over the last 10 years, 42% of TB cases in Iowa occurred among individuals 25-44 years of age (210 cases) followed by individuals 44-64 years of age (23%) and individuals 65 years and older (14%). The 5-14 years age group had the lowest number of cases between 2014-2023 with 16 cases, representing 3% of the total cases occurring during this time period. TB risk increases with age due to a combination of age-related changes in TB exposure, risk of comorbidities, and immune function.

TB Cases by Age Group, Iowa, 2023 (n=67)



TB Cases by Age Group, Iowa, 2014-2023 (n=503)



TB Cases by Sex

Between 2014-2023, 54.7% of tuberculosis cases occurred in males and 45.3% occurred among females.

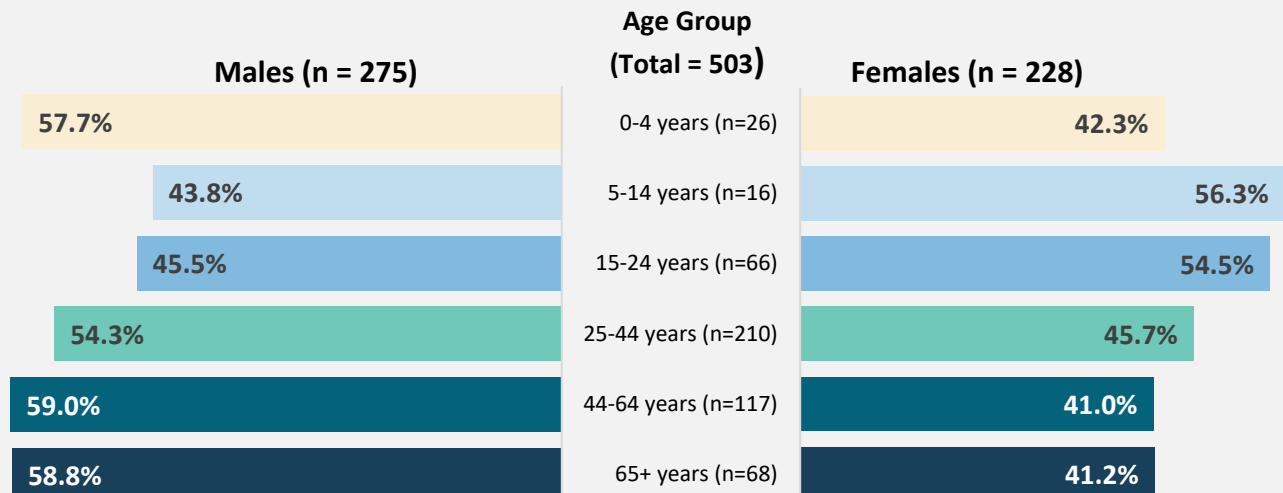
Iowa TB Cases by Sex 2014-2023



TB Cases by Sex and Age Group

Of the 503 confirmed TB cases in Iowa between 2014-2023, the percent of TB cases by sex was higher among males than females for all age groups except the 5-14 years and 15-24 years age group.

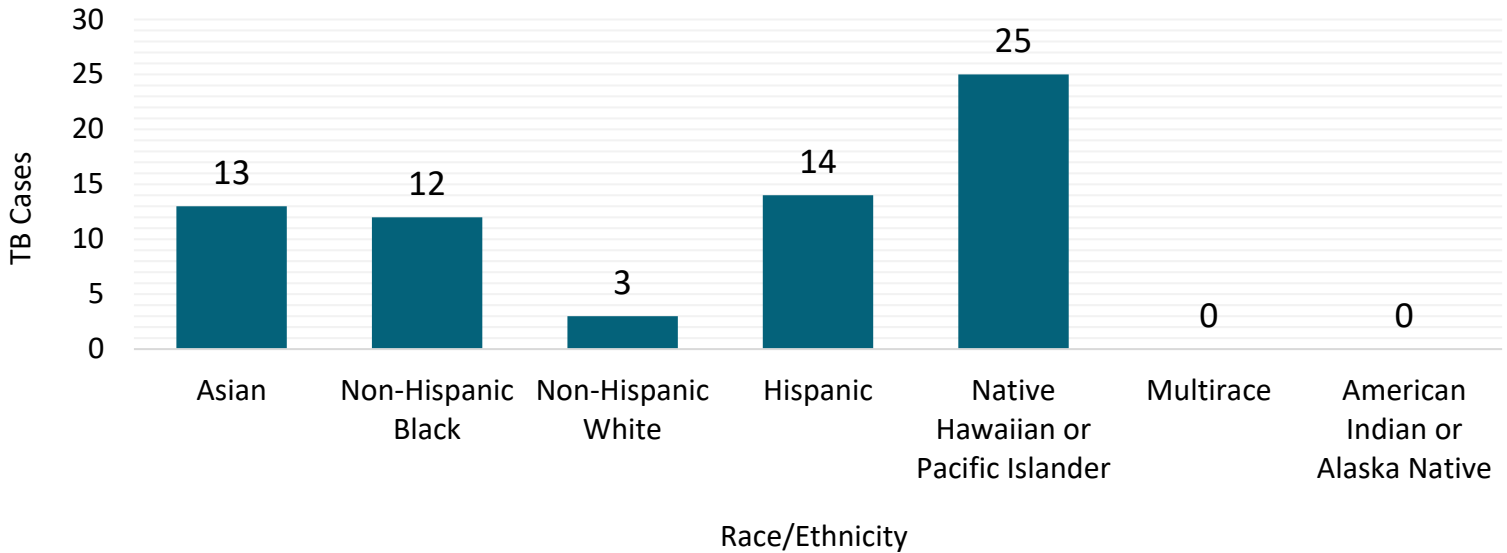
Percentage of TB Cases by Sex and Age Group, Iowa, 2014-2023



TB Cases by Race and Ethnicity

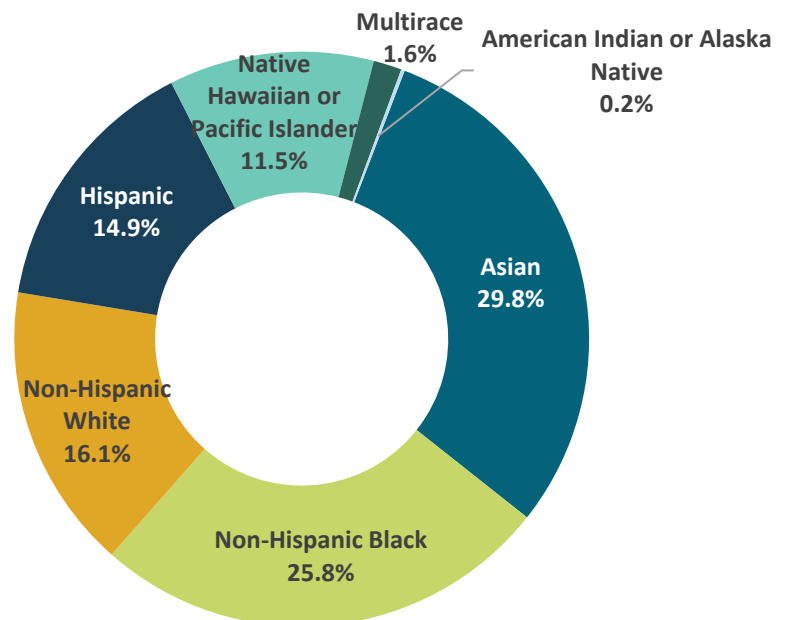
In 2023, 25 TB cases occurred in Native Hawaiian or Pacific Islanders, representing 37% of TB cases in 2023. Hispanic individuals represented 21% of the total cases followed by Asian (19%) and Non-Hispanic Black individuals (18%). No cases were observed among Native Indian or Alaska Native people or people with multiple races in 2023.

TB Cases by Race/Ethnicity, Iowa, 2023



Percent of Total TB cases in Iowa by Race/Ethnicity (2014-2023) (N=503)

Of the 503 confirmed TB cases in Iowa between 2014-2023, 29.8% occurred among Asian individuals followed by Non-Hispanic Black (25.8%), Non-Hispanic White (16.1%) and Hispanic (14.9%). Additionally, 11.5% of TB cases occurred among Native Hawaiian or Pacific Islanders, with a rise in cases among this population in recent years. American Indian or Alaska Native individuals and individuals with multiple race categories listed represent the remaining 1.8% of TB cases occurring in Iowa between 2014-2023.



Date note: Persons who identified as Hispanic or Latino were categorized as “Hispanic,” regardless of reported race. Persons who did not identify as Hispanic or Latino were categorized by reported race; if more than one race was reported, the person was categorized as “Multirace.”

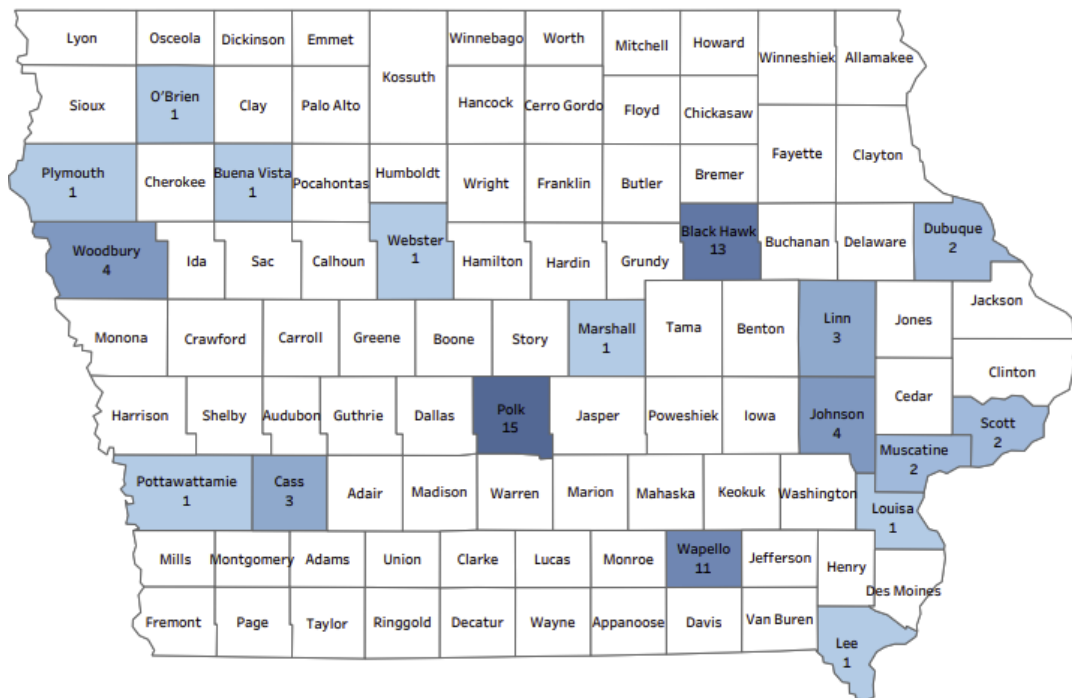
TB Cases in Iowa: County of Residence and Country of Birth

2023 TB Cases by Iowa County of Residence

TB Cases by Iowa County of Residence: 2023

In 2023, a total of 67 tuberculosis cases were reported from 18 Iowa counties. Polk County had the greatest number of TB cases reported (15) followed by Black Hawk (13) and Wapello (11).

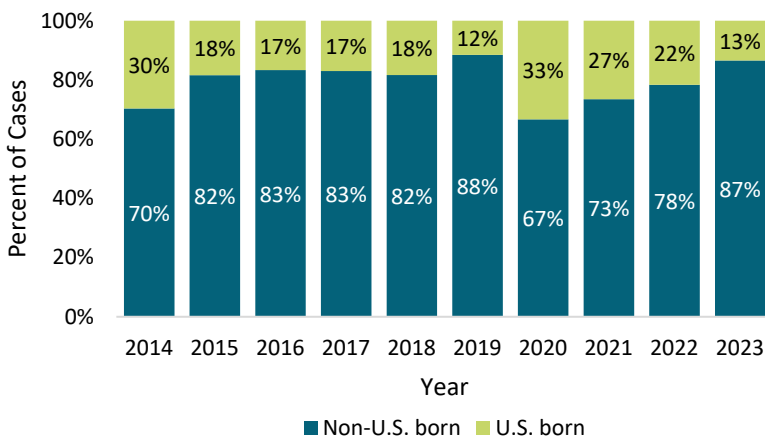
Higher TB morbidity logically occurs in higher population areas, but also is concentrated in areas where newly arriving immigrants are resettling. Many rural areas are home to industries such as meat packing and processing, that actively seek immigrants to supplement the workforce.



TB Cases in Iowa (2014-2023) U.S. vs Non-U.S. Born

Non-U.S. born TB cases represent a large majority of TB cases in Iowa. Of the 67 cases of TB that occurred in Iowa in 2023, 87% occurred in non-U.S. born persons. Since 2014, 80% of TB cases in Iowa have occurred in non-U.S. born individuals. Non-U.S. born persons account for only 4 percent of the Iowa population, highlighting the disparity. The decreasing numbers of U.S.-born cases are due in part to effective TB control

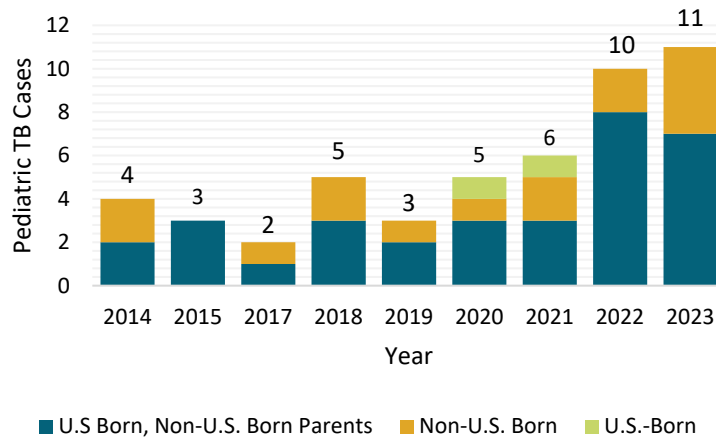
TB Cases By U.S. vs. Non-U.S. Born, Iowa, 2014 - 2023



Pediatric TB Cases in Iowa (2014-2023) U.S. vs. Non-U.S. Born

Between 2014-2023, 49 TB cases occurred in Iowa among individuals 15 years of age and younger. Of the 49 cases, 65% (32 cases) occurred among U.S. born individuals with non-U.S. born parents, while 30% (15 cases) occurred among non-U.S. born individuals. Only two pediatric cases occurred among U.S. born individuals with U.S. born parents.

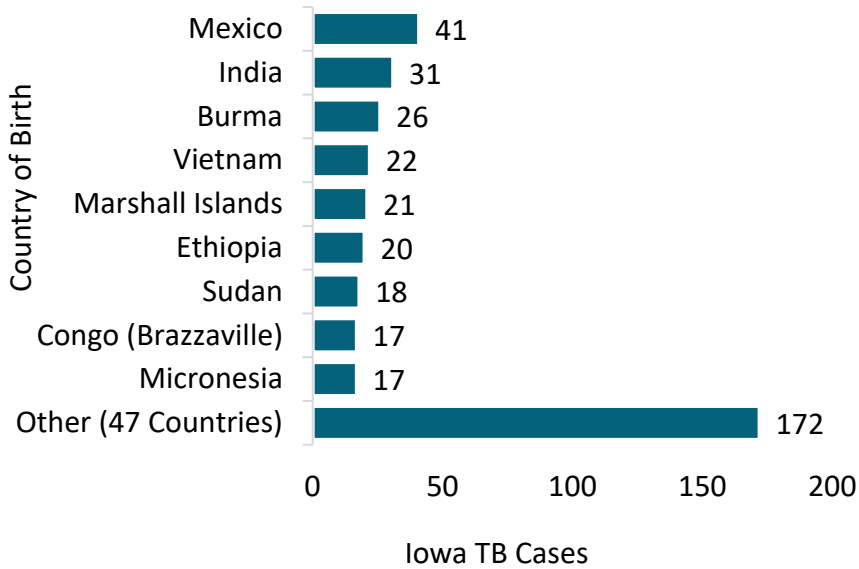
Pediatric TB Cases by Origin of Birth, Iowa, 2014-2023



TB Cases in Iowa (2014-2023) - Country of Birth

Of the 503 TB cases that occurred between 2014-2023 in Iowa, 401 (80%) cases occurred in individuals with country of birth outside of the United States. 57 different country of origins made up TB cases in Iowa between 2014-2023 with Mexico, India, Burma, and Vietnam making up nearly one third of all non-U.S born TB cases.

Non U.S. Born TB Cases, Iowa, 2014 - 2023

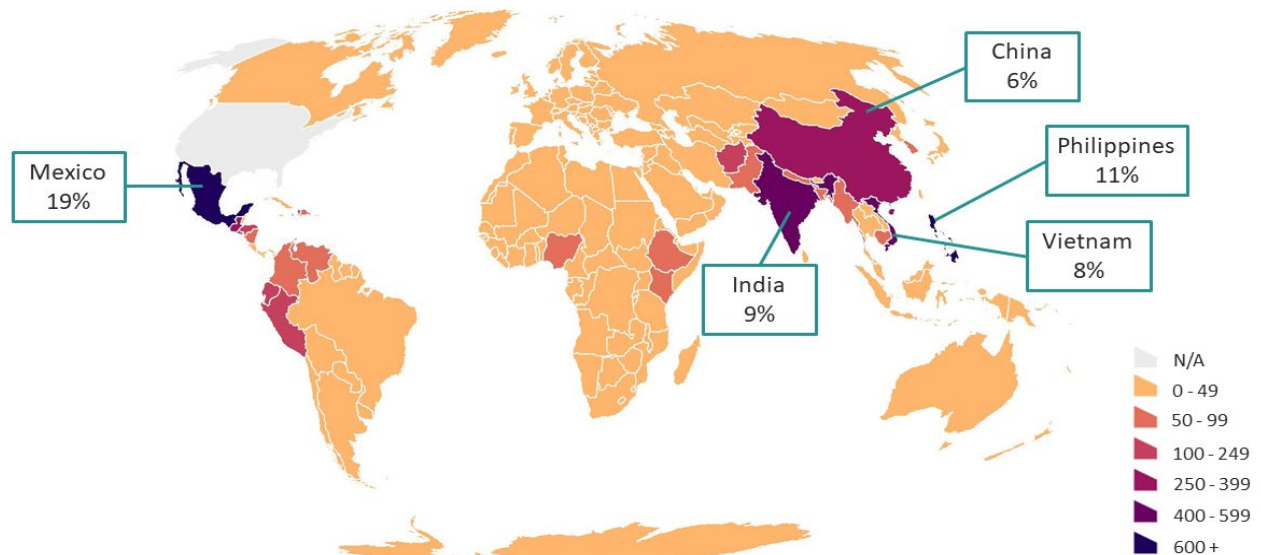


Country of Birth	Total Iowa TB Cases (2014-2023)
USA	102
Mexico	41
India	31
Burma	26
Vietnam	22
Marshall Islands	21
Ethiopia	20
Sudan	18
Congo (Brazzaville)	17
Micronesia	17
Other (47 Countries)	172
Total	503

TB Cases by Country of Birth – United States, 2022

In 2022, 6,148 TB cases in the United States were among non-U.S. born persons. Consistent with Iowa data, individuals from Mexico represented the highest percent of non-U.S. born persons with TB (19%) followed by individuals born in the Philippines (11%), India (9%), Vietnam (8%), and China (6%).

TB Cases by Countries of Birth Among Non-U.S.–Born* Persons with TB, United States, 2022 (N=6,148)



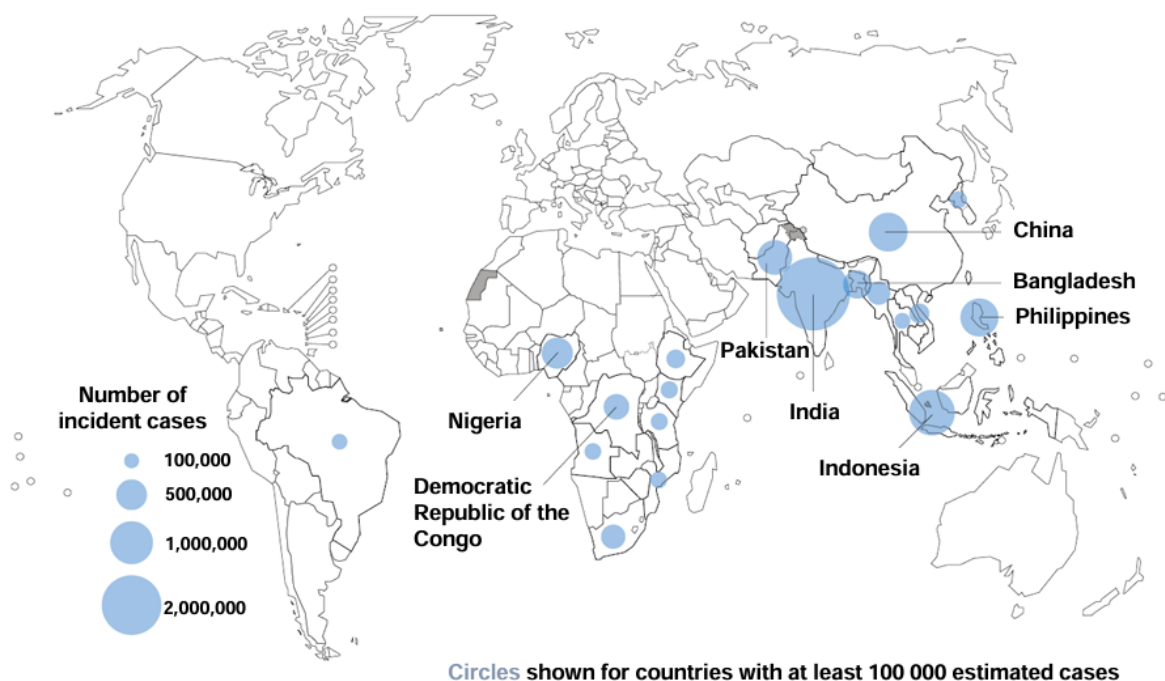
*Persons born in the United States, certain U.S. territories, or elsewhere to at least one U.S. citizen parent are categorized as U.S.-born. All other persons are categorized as non-U.S.-born.

WHO Global Tuberculosis Health Report 2023 Takeaways

- In 2022, TB was the second leading infectious disease killer worldwide, after COVID-19. It was also the leading killer of people with HIV and a major cause of deaths related to antimicrobial resistance.
- In 2022, an estimated 10.6 million (95% uncertainty interval [UI]: 9.9-11.4 million) people fell ill with TB worldwide, of which 5.8 million were men, 3.5 million were women and 1.3 million were children. People living with HIV accounted for 6.3% of the total.
- The TB incidence rate (new cases per 100,000 population per year) rose by 3.9% between 2020 and 2022, reversing declines of about 2% per year for most of the past 2 decades.
- Globally in 2022, TB caused an estimated 1.30 million (95% UI: 1.18–1.43 million) deaths, including 167,000 people with HIV. This was down from best estimates of 1.4 million in both 2020 and 2021 and almost back to the level of 2019.
- Eight countries accounted for more than two-thirds of the global total: India, Indonesia, China, the Philippines, Pakistan, Nigeria, Bangladesh and the Democratic Republic of the Congo.

8 countries, 68% of global cases in 2022

87% in 30 high TB burden countries



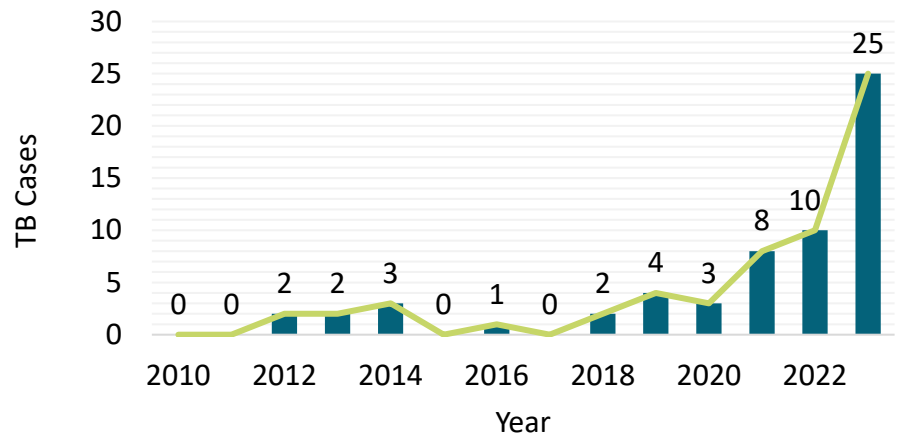
Data source: WHO, [Global Tuberculosis Report 2023](#)

Increase in TB cases among persons of Pacific Island communities

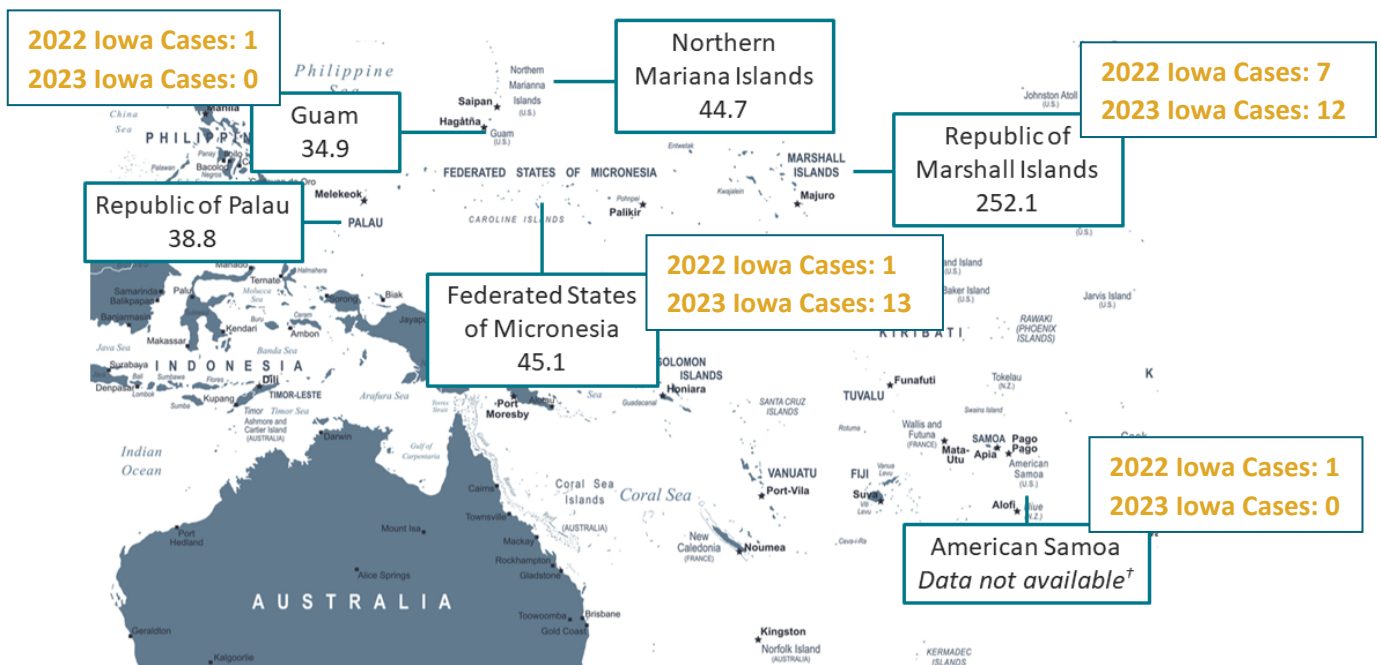
Over the past three years, there has been a large increase in the number of TB disease cases occurring amongst persons from designated Pacific Island communities in Iowa. The Pacific Island communities include the Republic of the Marshall Islands (RMI), Republic of Palau, and the Federated States of Micronesia (FSM), which includes the island states of Yap, Chuuk, Pohnpei and Kosrae. Citizens of these communities do not have the benefit of medical screening for communicable diseases, including tuberculosis, upon entry to the United States. Reported verified cases of TB disease in persons from the Pacific Island communities continues to rise and represents a significant percentage of the current TB morbidity in Iowa.

In 2023, there were **25 reported verified cases of TB** among persons of Pacific Island communities in Iowa, representing 37% of the total number of reported TB cases in Iowa in 2023. Between 2010-2023, there were 60 cases of TB reported among persons from Pacific Island communities and of these, 43 cases occurred between 2021-2023, representing 72% of the total number of TB cases in this community between 2010-2023.

Number of TB Cases Among Persons of Pacific Island Communities, Iowa, 2010-2023



TB Incidence Rates by U.S. Affiliated Pacific Islands, 2022 and Iowa TB Cases among persons of Pacific Island Communities (2022 and 2023)



*Cases per 100,000 persons

†American Samoa data not submitted for 2022

Map data source: CDC, Reported Tuberculosis in the United States, 2022 and Iowa TB data
Iowa data includes both non-US and U.S born persons of Pacific Island community

TB Cases in Iowa: Site of Disease

TB Cases by Site of Disease

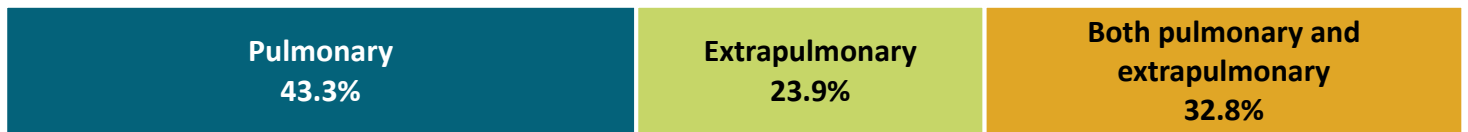
Of the 67 confirmed TB cases in Iowa in 2023, pulmonary TB was the most common site of TB disease with 76.1% of TB cases occurring in the lungs. Of the 76.1% of cases, 43.3% were exclusively pulmonary while 32.8% had both pulmonary and extrapulmonary site of disease. An additional 23.9% of TB cases had extrapulmonary only site of disease.

Site of TB Disease:

Pulmonary TB: TB disease that occurs in the lungs. It is the most common site for TB disease.

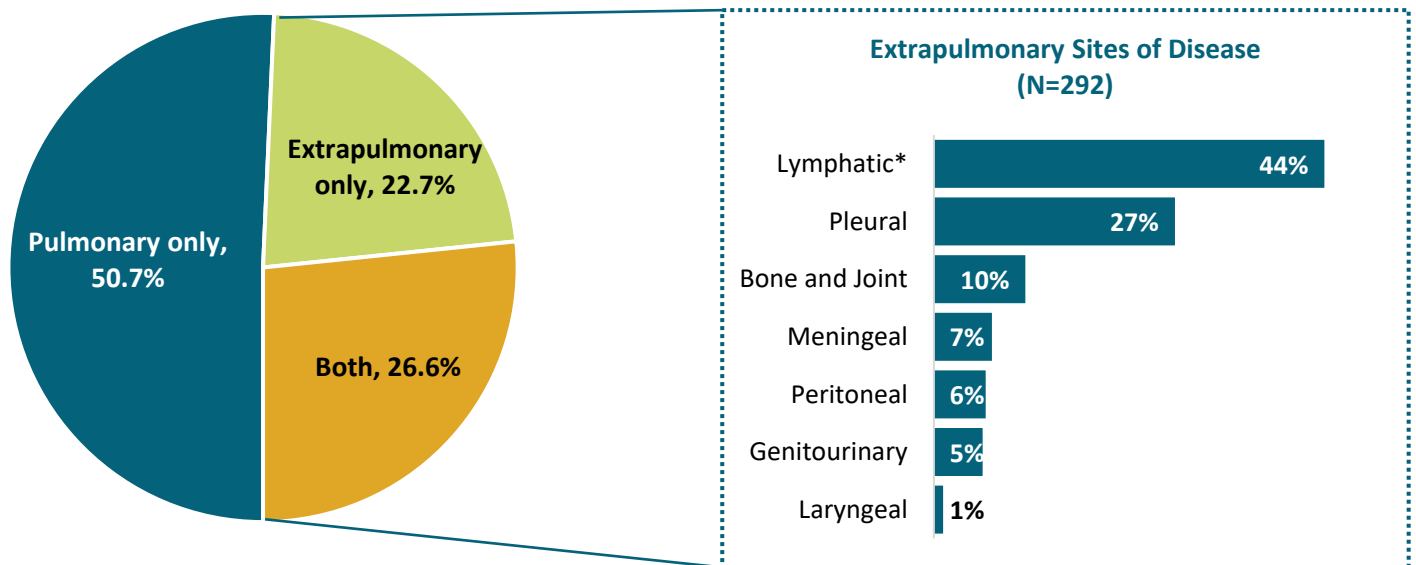
Extrapulmonary TB: TB disease that occurs outside of the lungs. The most common sites are lymph nodes, pleura, bone and joints, urogenital tract and meninges.

Iowa TB Cases by Site of Disease- 2023



Of the 503 confirmed TB cases in Iowa between 2014-2023, pulmonary TB was the most common site of TB disease with 77.3% of TB cases occurring in the lungs. Of the 77.3% of cases, 50.7% were exclusively pulmonary while 26.6% had both pulmonary and extrapulmonary site of disease. An additional 22.7% of TB cases had extrapulmonary only site of disease. Lymphatic and pleural were the two most common extrapulmonary sites of disease, representing 44% and 27% of the total extrapulmonary sites, respectively.

Percentage of TB Cases by Site of Disease, Iowa, 2014-2023



Notes:

Persons might have more than one extrapulmonary site of disease

*Persons with multiple lymphatic sites of disease are counted once.

Tuberculosis Treatment



TB disease and LTBI can be treated with several treatment options. TB treatment depends on a variety of factors including HIV status, drug resistance, pregnancy, and treatment of children. It is very important that people who have TB disease finish treatment and take the drugs exactly as prescribed. If patients stop taking the drugs too soon, they can become sick again; if they do not take the drugs correctly, the TB bacteria that are still alive may become resistant to those drugs. Drug resistant TB is harder and more expensive to treat.

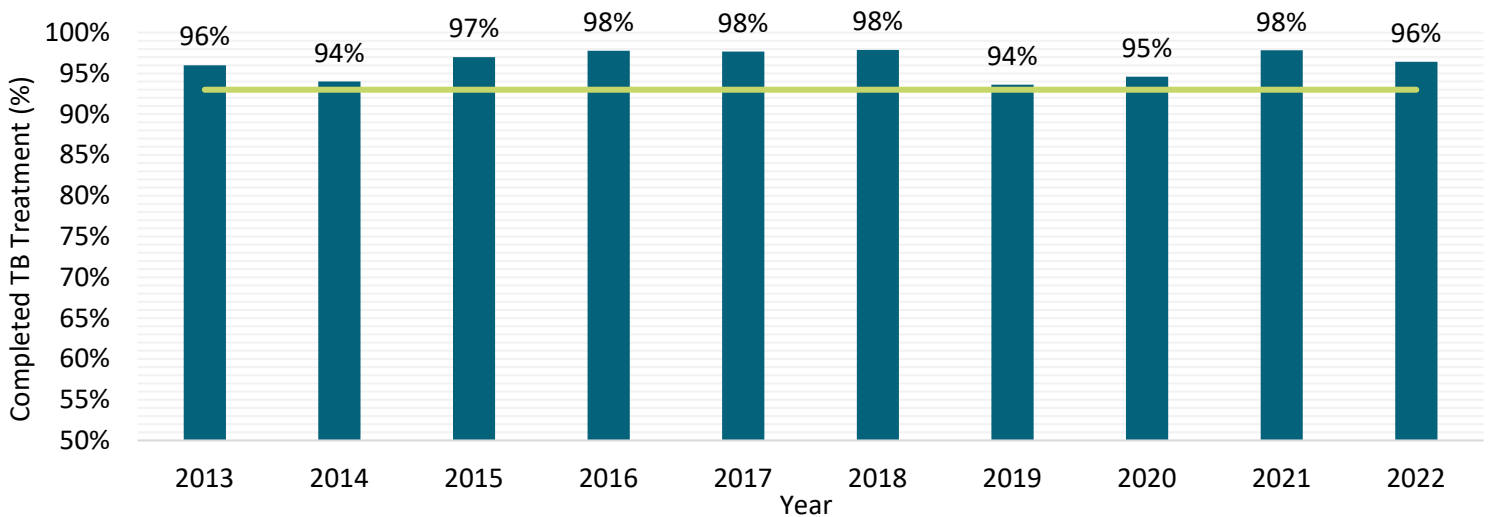
The Iowa TB Control Program provides medication for all LTBI, suspected, and confirmed cases of TB disease at no cost for individuals residing within the state of Iowa. Additional information regarding TB treatment in Iowa can be found [here](#).

93%

National target for TB treatment completion

Since 2012, Iowa's completed TB treatment percentage has remained above the national target. TB treatment completion for 2023 is not yet available as treatment for cases that occurred in 2023 are still in progress.

Completed TB Treatment in Iowa: 2013-2022



Additional information and resources on TB testing, reporting, administrative rules, treatment, screening, and TB prevention in Iowa can be found [here](#).