

# Tuberculosis in incarcerated populations

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## INTRODUCTION

Tuberculosis (TB) remains a public health concern globally and within the United States. Certain populations, including those who are incarcerated, are disproportionately affected. This regional report explores the epidemiology of TB among incarcerated individuals globally, nationally, and in Texas, focusing on incidence, risk factors, and public health implications.

## EPIDEMIOLOGY AND RISK FACTORS

Tuberculosis continues to be a major global health issue, with the World Health Organization (WHO) reporting approximately 10.8 million new TB cases annually as of 2023.<sup>1</sup> The global burden is exacerbated in high-risk populations, including those in incarcerated settings, where individuals are at increased risk due to overcrowding, limited healthcare access, and close contact with others who may have active disease. An example of populations most at risk would be incarcerated individuals within facilities with poor health access and overcrowding. The global incarcerated population stands at approximately 11 million, a significant number of patients put at risk of exposure to TB.<sup>2</sup> Globally, the incidence of TB among incarcerated individuals was 1,148 per 100,00, nearly 10 times higher than the general population.<sup>8</sup>

Tuberculous infection rates also vary significantly across regions. Studies in prison settings report infection rates ranging from one to 144 infections per 100 person-years, with the highest rates observed in Brazil and Nigeria (23–144 infections per 100 person-years). In contrast, infection rates in countries like Australia, Spain, and the United States are much lower, ranging

from 0 to 6 infections per 100 person-years. However, even these lower rates are still higher than infection rates in the general population.

Apart from regional prevalence influencing TB incidence, other contributors are factors that relate to incarceration, such as overcrowding, poor ventilation, HIV co-infection, substance use, malnutrition, and frequent shuffling of individuals. Studies in the U.S. have consistently shown that tuberculosis incidence in correctional settings is approximately six times higher than that observed in the general population. For example, between 2003 and 2013, the median TB rate in local jails and federal prisons was about six-fold higher than in the general population. One study found that TB incidence in federal prisons reached nearly 6.9 times the rate of the broader U.S. population.<sup>3</sup>

Another factor to consider with regard to risk stratification of tuberculosis incidence is HIV infection. Concurrent HIV infection compromises an individual's host defenses against TB and increases the risk of progression to active and miliary TB. Globally, HIV is the biggest multiplier of TB risk, increasing by 20 to 37 times compared to people without HIV. In addition, patients with HIV-TB have a disproportionately higher mortality compared to those without HIV.<sup>4</sup>

One final factor that markedly increases TB risk in prisons is the interplay of infrastructure, overcrowding, and frequent prisoner transfers. Globally, TB incidence in incarcerated populations is estimated to be up to 10 times higher than in the general population due to these conditions. Poor ventilation and tightly packed living spaces facilitate the airborne spread of TB, while the constant movement of prisoners between facilities complicates contact tracing and continuity of care. Compounding these structural challenges is the limited funding for routine health screenings and symptom monitoring, which allows outbreaks to remain undetected until advanced stages. Without targeted surveillance and infection control strategies, prisons can act as reservoirs of TB transmission, posing a public health threat both inside and outside detention centers.<sup>1–3,5</sup>

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## REGIONAL DATA AND TRENDS

### UNITED STATES

In the United States, for those with identified TB the greatest risk factor was current or former smoking, which was identified in 31.2 percent, followed by alcohol use at 7.9%, non-injection drug use at 7.8%, homelessness at 5.9% and current resident of a correctional facility at 3.6%<sup>3</sup> (Figure 1).

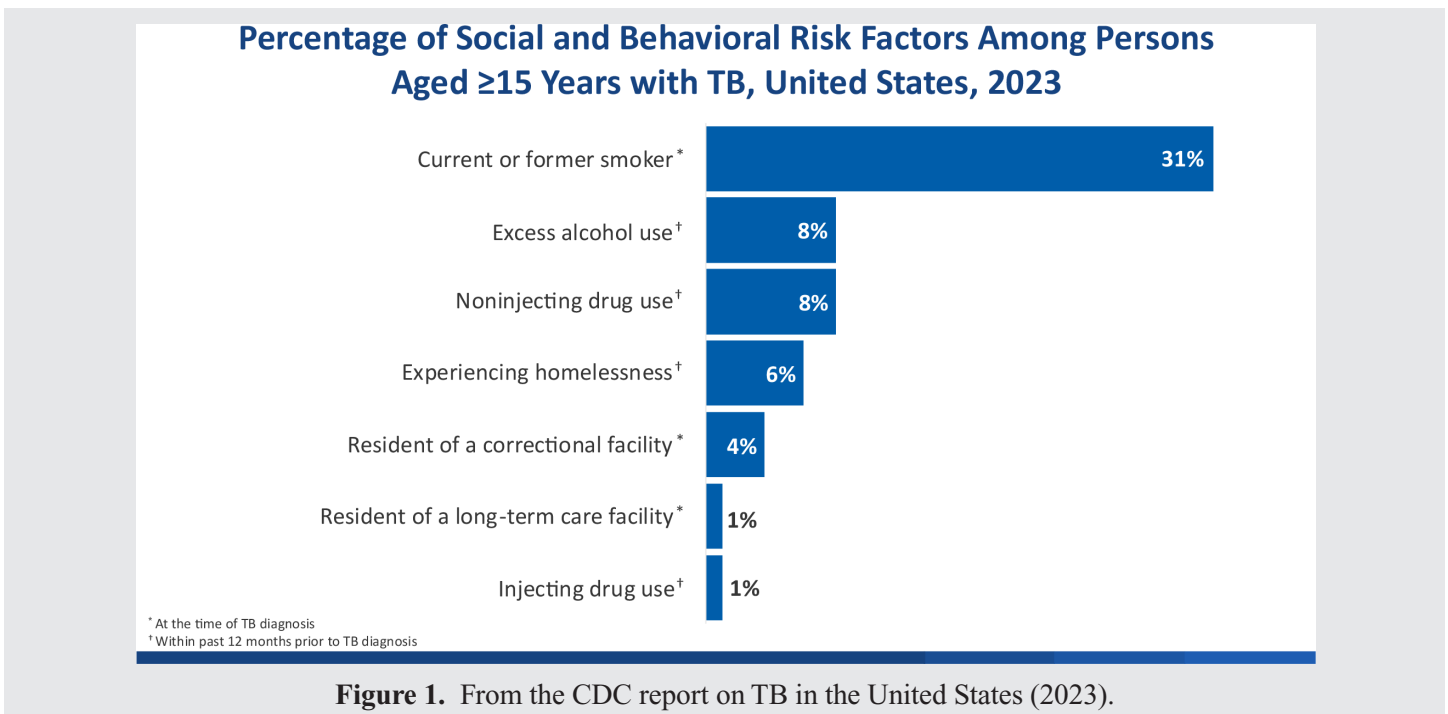
Within those 324 cases identified in correctional facilities, 24% were in local jails, 12% in federal prisons, and 10% were in state prisons, while 54% were noted to be in “Other facilities.” These included Immigration and Customs enforcement (ICE) detention centers, Indian reservation facilities, and military stockades and jails<sup>3</sup> (Figure 2).

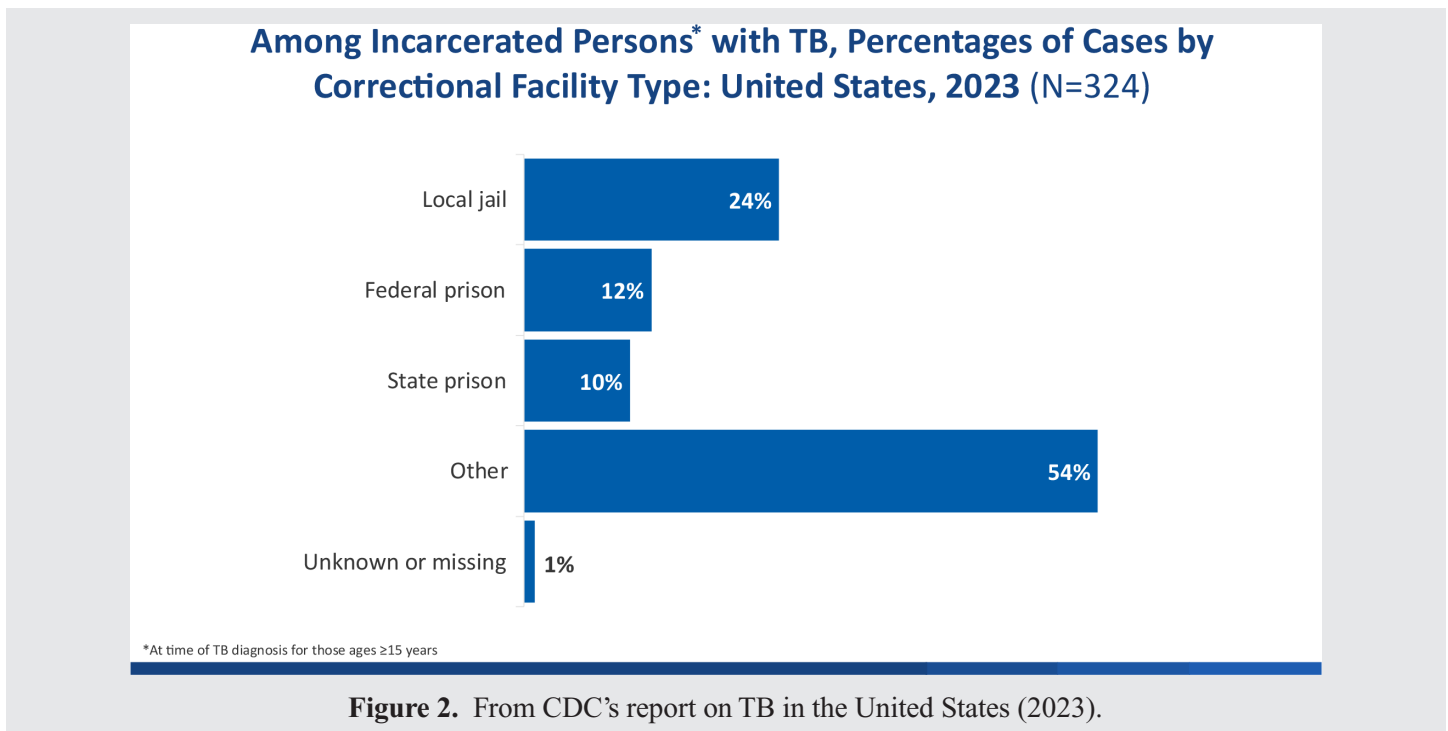
Published data specific to U.S. Immigration and Customs Enforcement (ICE) custody demonstrate the high vulnerability in these environments. Schneider et al. (2007) found that detainees in ICE facilities are systematically screened for TB upon intake, yet the transient and restrictive nature of these facilities

poses significant challenges to effective TB control—including delays in treatment, difficulties maintaining continuity of care, and elevated risk of undetected outbreaks in a population with frequent turnover and limited medical resources.<sup>6</sup> Incorporating these findings highlights the importance of including non-prison detention centers in the broader analysis of incarceration-related TB risk.

### TEXAS

In 2023, Texas reported 1,242 TB cases, accounting for 12.9% of all U.S. cases. While Texas makes up only ~9% of the U.S. population, it contributed 12.9% of all TB cases in 2023—a clear indication of a disproportionate disease burden. Texas also reported a TB incidence rate of 4.1 cases per 100,000 persons, well above the national average of 2.9, placing it among the top five states for TB incidence.<sup>7</sup> This disproportionate burden likely reflects factors such as urban population density, immigration patterns, and ongoing transmission in high-risk congregate settings, particularly correctional facilities, underscoring the need for targeted public health interventions.





Among Texas TB cases, 8.3% were confined in a correctional facility at the time of diagnosis. In comparison, 3% of all TB cases in the U.S. were incarcerated at the time of diagnosis. In Texas, the correctional case count decreased by 35% from 2016 to 2017, and the proportion declined by 2.9% over the same period.

Between 2004 and 2005, 218 TB cases were identified in ICE detainees nationwide, with incidence rates of 82.6 and 121.5 per 100,000, respectively. Notably, four ICE facilities located in Texas—Port Isabel, Pearsall, El Paso, and Houston—had some of the highest TB case rates reported, with Port Isabel reaching 462.3 per 100,000.<sup>6</sup> These findings underscore the importance of TB surveillance and treatment continuity within immigration detention, particularly in high-burden states like Texas.

### **PUBLIC HEALTH IMPLICATIONS**

Provision of high-quality health care in prisons, including TB prevention and care, is essential. Prevention, diagnosis, treatment, testing for HIV and comorbidities, treatment support, and infection prevention and control

(IPC) are relevant to all people with TB, especially those in prisons. Systematic testing with the same standard of treatment and support as for those in the community can help to ensure that these high-risk individuals are not left behind.

Both the World Health Organization and the Centers for Disease Control and Prevention (CDC) recommend that systematic screening for TB disease should be conducted in prisons and penitentiary institutions for all entrants and staff. Systematic screening for TB disease is defined as the systematic identification of people at risk for TB disease by assessing symptoms and using tests, examinations, or other procedures that can be applied rapidly. For those who screen positive, the diagnosis needs to be established by at least one diagnostic test and additional clinical assessments, including chest radiography and the WHO four-symptom screen.

Treatment completion is multi-month and requires continuity, often disrupted by transfers and releases. The CDC data show that individuals previously incarcerated are less likely to have documented treatment completion. These factors influence case relapses, drug resistance, and transmission, all expanding the

risk beyond incarceration facilities into the general population. This is especially relevant for patients in detention under ICE, where they are potentially deported with no intention for follow-up or assurance of medication adherence. This system is currently disjointed, demonstrated by the exceptionally high incidence of TB in these facilities.

## CONCLUSIONS

Tuberculosis remains a persistent threat in incarcerated populations, driven by structural and epidemiologic factors that amplify transmission risk. Within the United States, incarcerated individuals experience a TB incidence approximately six times higher than the general population, highlighting the disproportionate burden borne by this vulnerable group. In 2023, Texas alone accounted for 12.9% of all U.S. TB cases—despite comprising only 9% of the national population—and reported an incidence rate of 4.1 cases per 100,000, exceeding the national average of 2.9.

Of particular concern are Immigration and Customs Enforcement detention facilities, where overcrowding, rapid detainee turnover, and gaps in continuity of care create conditions ripe for TB transmission. Between 2004 and 2005, ICE facilities reported incidence rates as high as 121.5 per 100,000, with Texas-based facilities such as Port Isabel experiencing rates exceeding 460 per 100,000—nearly 40 times the national average. These figures underscore the urgent need for targeted public health interventions, especially in high-risk states like Texas. Improving TB outcomes in correctional and detention settings will require consistent screening, standardized treatment protocols, robust surveillance systems, and above all, continuity of care—especially for individuals who are transferred, released, or deported. Without these investments, TB will continue to exploit systemic vulnerabilities, posing a threat not only to incarcerated individuals but to the public health at large.

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