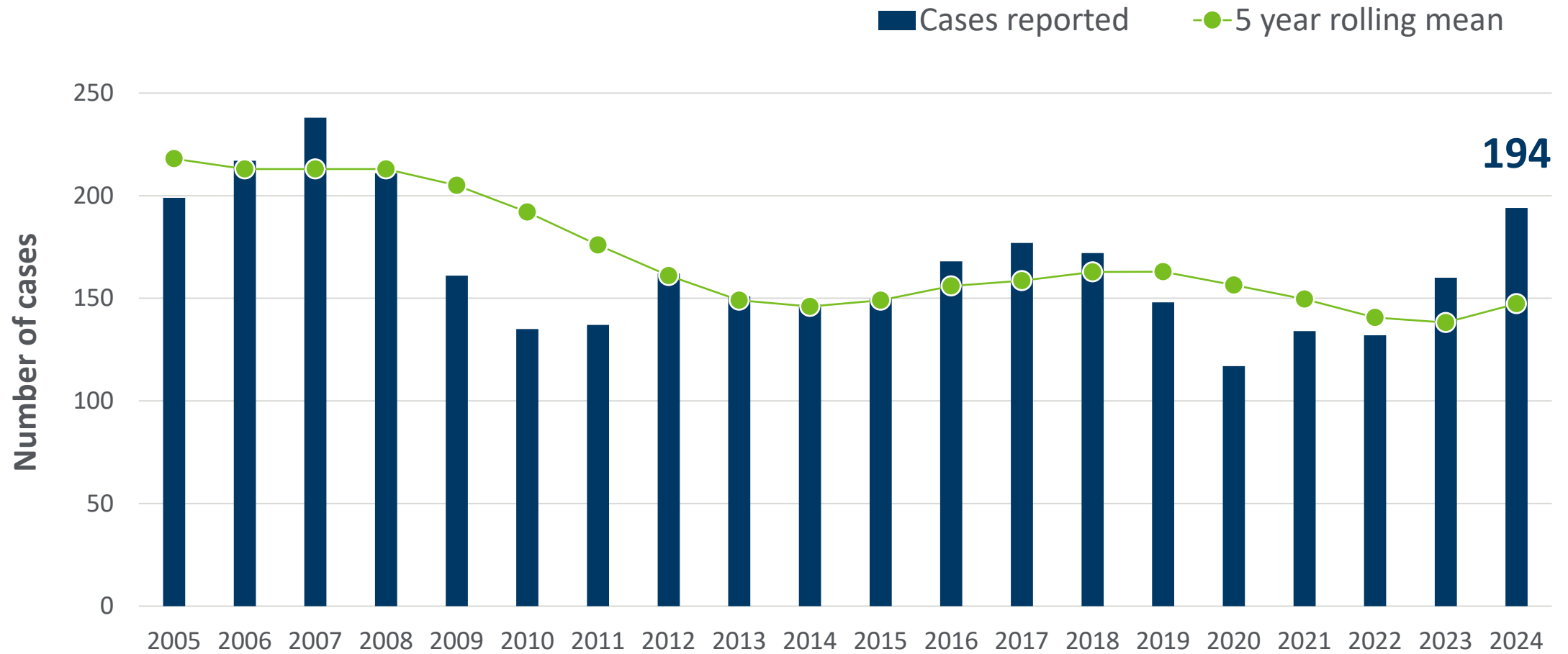




The Epidemiology of Active Tuberculosis (TB) in Minnesota 2020 – 2024

Tuberculosis Prevention & Control Program
(651) 201-5414 | www.health.state.mn.us/tb

Annual incidence, 2005 - 2024



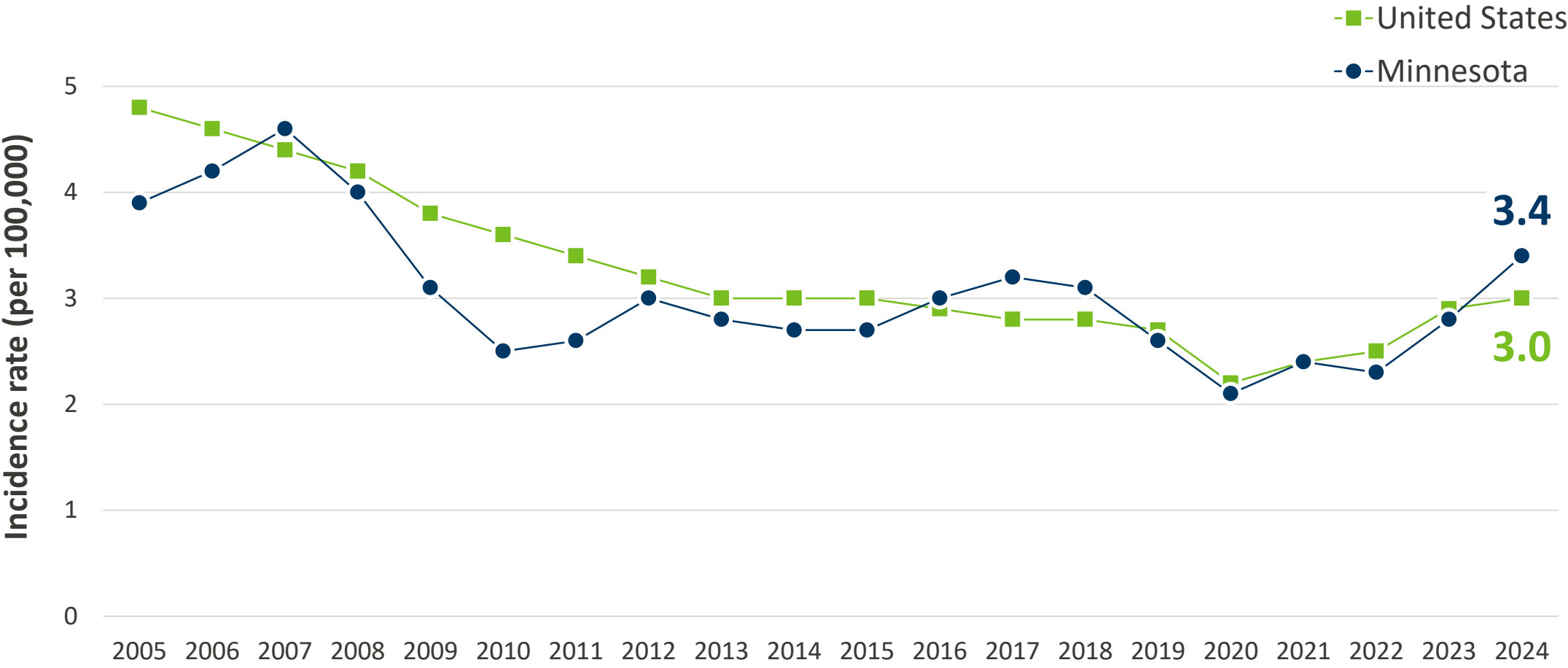
Incidence and mortality

Year	Incidence (Rate)*	Case fatality (case fatality rate [%])**
2020	117 (2.1)	6 (5)
2021	134 (2.4)	11 (8)
2022	132 (2.3)	9 (7)
2023	160 (2.8)	6 (4)
2024	194 (3.4)	12 (6)

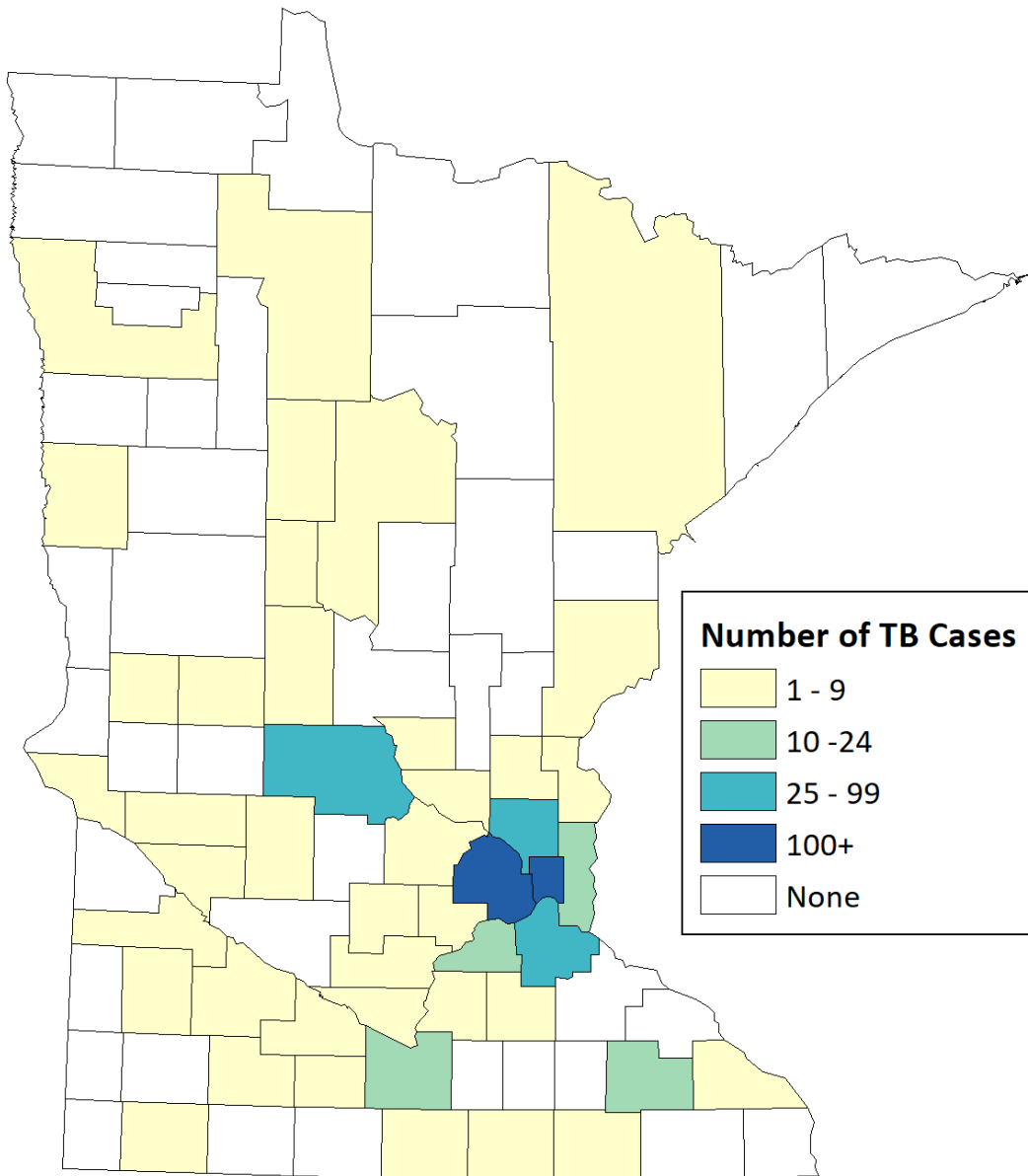
* Cases per 100,000 population. Rates calculated using state population estimates from the U.S. Census Bureau.

** Represents only deaths due to TB disease or TB drug-induced toxicity; percentages based on the number of new TB cases for each year

Incidence rates per 100,000 population, US and MN, 2005 - 2024



Incidence by county of residence



County/Region of residence	Incidence (%)
Hennepin County	257 (35%)
Ramsey County	173 (23%)
Suburban metro	150 (20%)
Olmsted County	24 (3%)
Greater MN (excluding Olmsted County)	133 (18%)
Total	737

Incidence and incidence rate by county of residence

Location of Residence	2020 No. (Rate)*	2021 No. (Rate)*	2022 No. (Rate)*	2023 No. (Rate)*	2024 No. (Rate)*
Hennepin County	44 (3.5)	32 (2.5)	44 (3.5)	63 (4.9)	74 (5.8)
Ramsey County	31 (5.6)	40 (7.3)	28 (5.1)	37 (6.7)	37 (6.7)
Suburban Twin Cities Metro†	20 (1.5)	30 (2.3)	28 (2.1)	23 (1.7)	49 (3.7)
Olmsted County	1 (0.6)	4 (2.5)	5 (3.1)	5 (3.1)	9 (5.5)
Greater Minnesota (excluding Olmsted)	21 (0.9)	28 (1.2)	27 (1.1)	32 (1.3)	25 (1.1)
Total	117 (2.1)	134 (2.4)	132 (2.3)	160 (2.8)	194 (3.4)

* Cases per 100,000 population. Rates calculated using state population estimates from the U.S. Census Bureau.

† Anoka, Carver, Dakota, Scott, and Washington counties

Reason for diagnosis

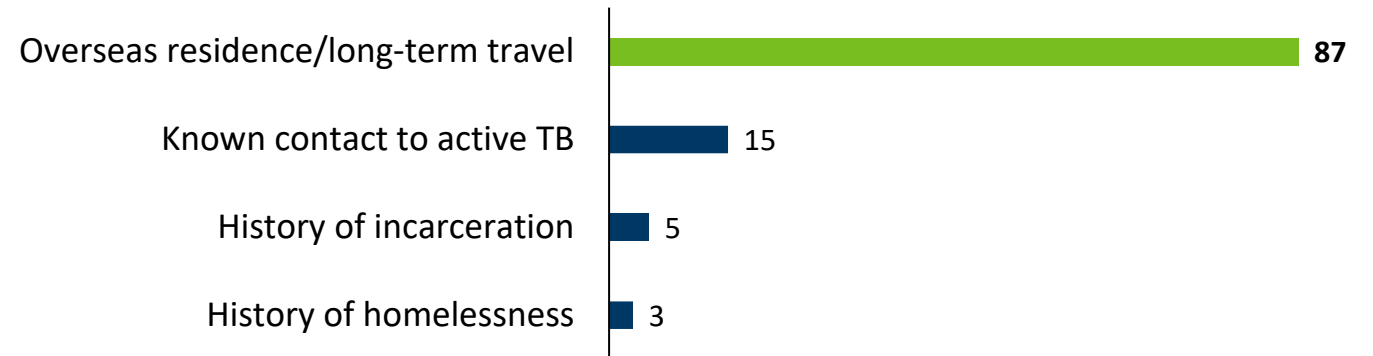
Method of Identification	No. of Cases (%)*
Presented with TB symptoms	603 (82)
Identified in a TB contact investigation	54 (7)
Immigration related exams	17(2)
Employment screening (including health care personnel)	7 (1)
Other risk-based screening	18 (2)
Incidental imaging or lab result	38 (5)
Total	737

** Percentages may not total 100%*

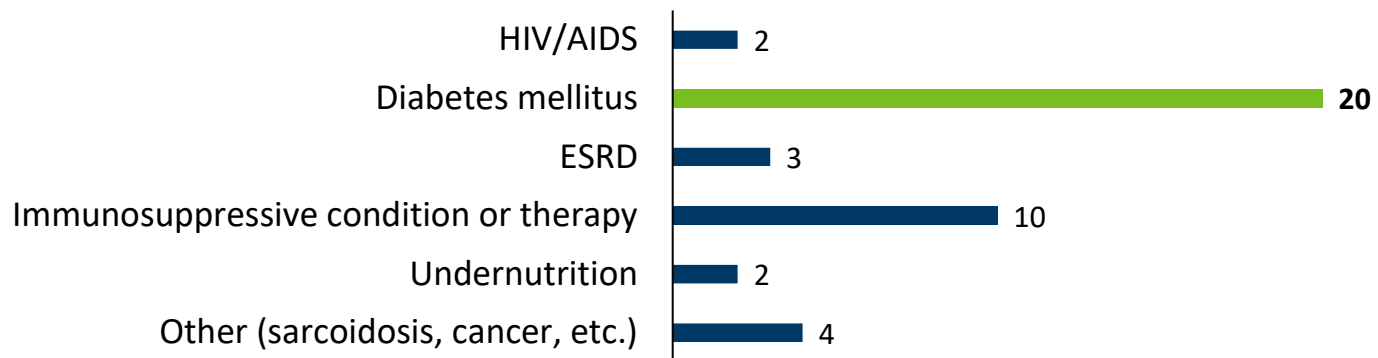
Risk factors

96% of active TB cases had a least one known TB exposure risk factor

TB exposure risk factors* (%)



Medical risk factors* (%)

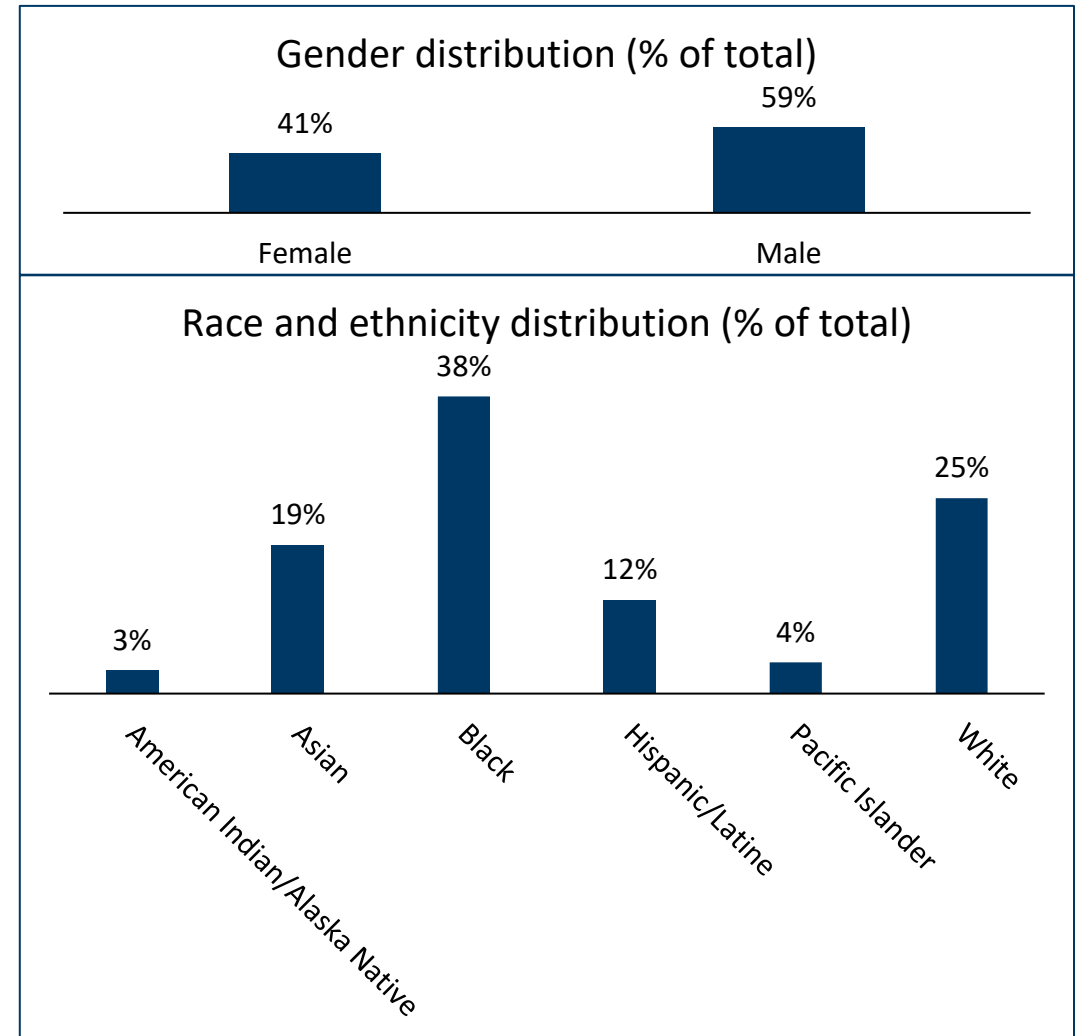
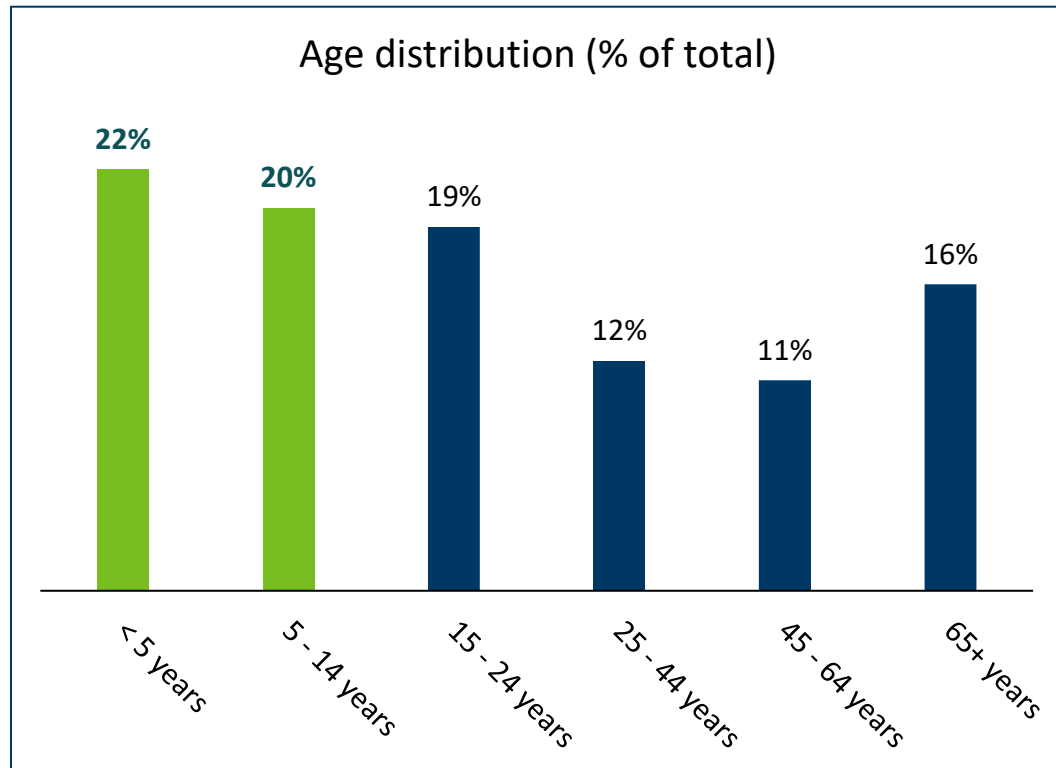


45% of active TB cases had a least one medical risk factor for progressing to active TB

* An individual could have more than one risk factor

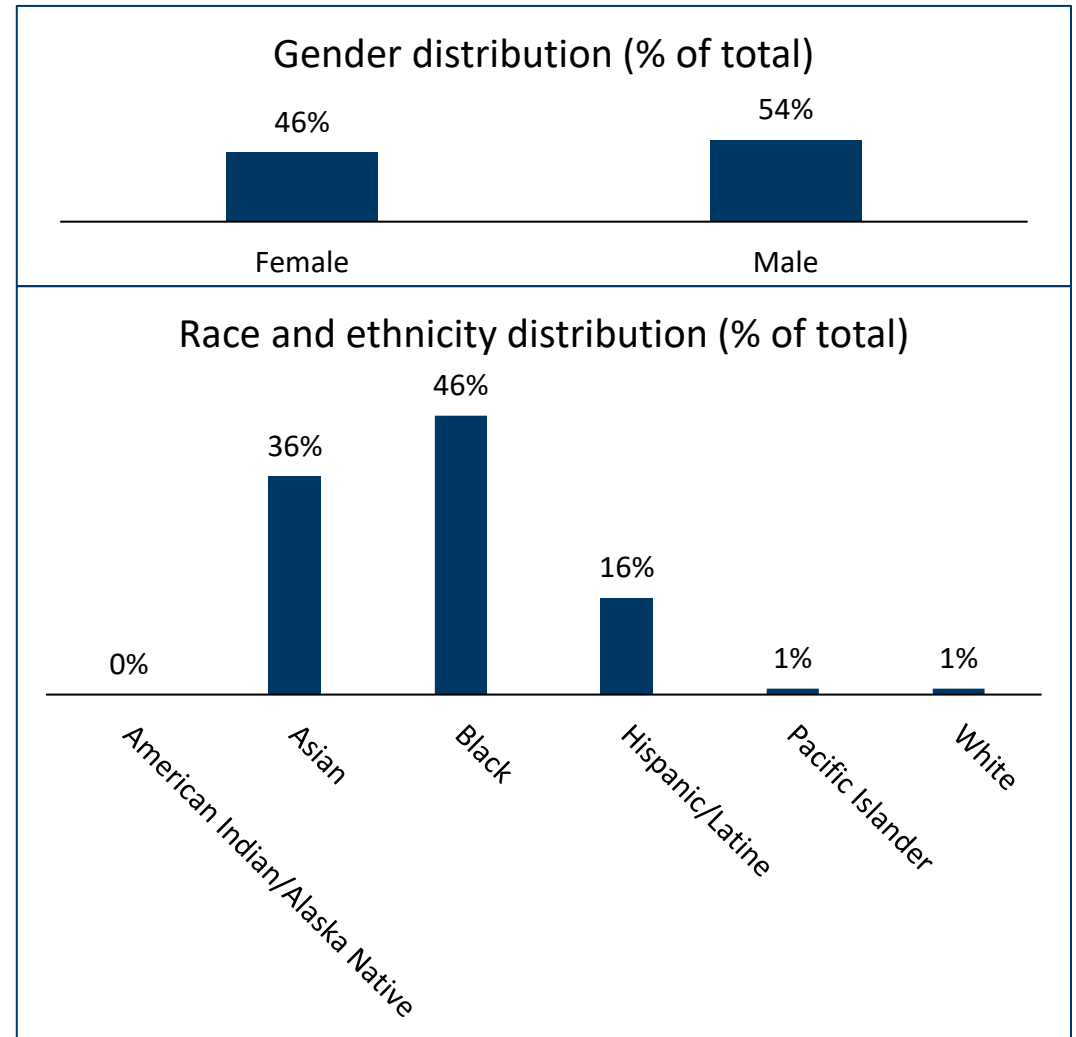
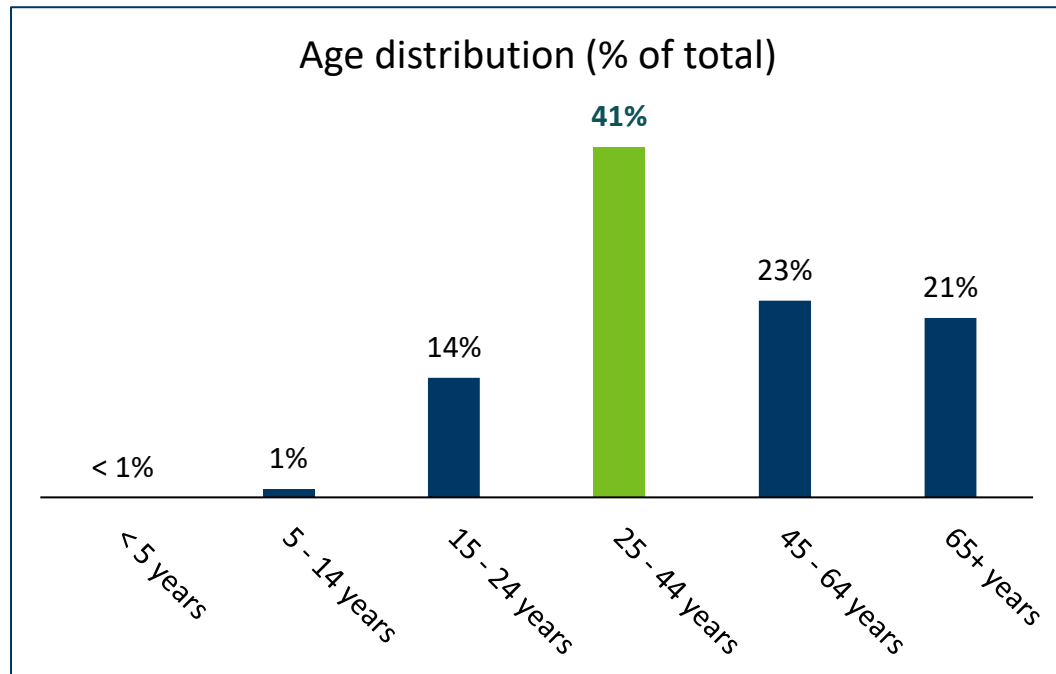
Demographics among US-born individuals (n = 138)

Pediatric cases (< 15 years old) accounted for **42%** of all US-born cases. Many traveled abroad to visit family or had an ill caregiver.

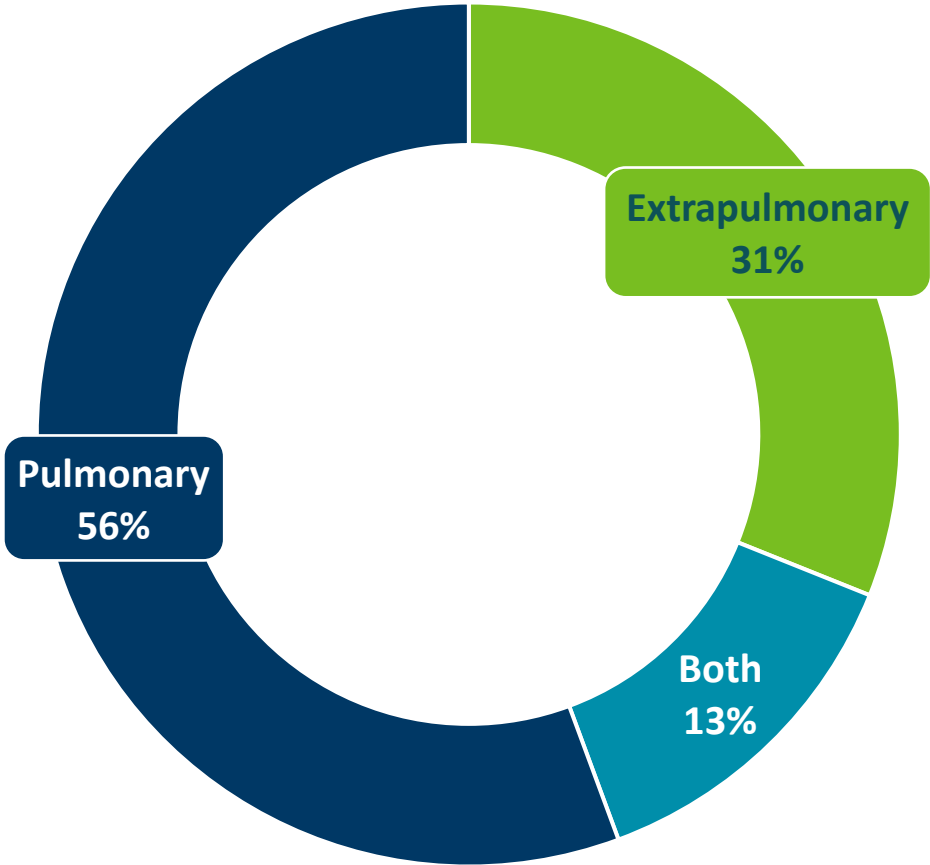


Demographics among non-US-born individuals (n=599)

Persons aged 25 – 44 years accounted for **41%** of non-US-born cases. This is consistent with the age distribution of non-US-born Minnesotans and not a concern for increased risk or transmission in this age group.



Sites of disease

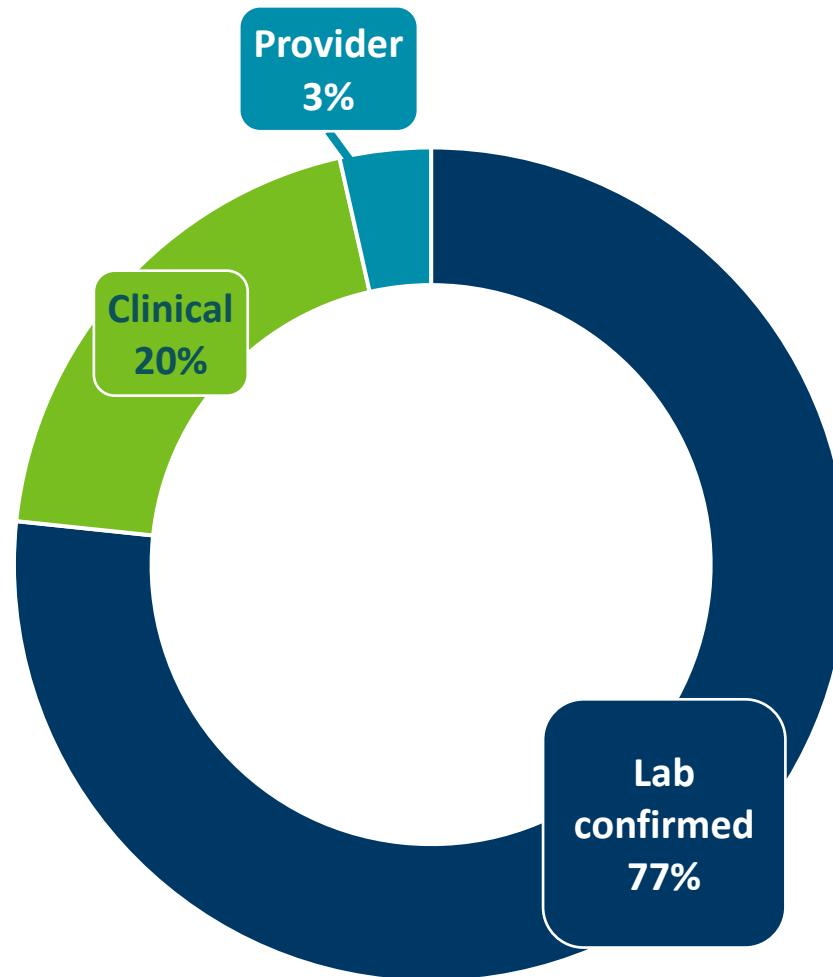


N = 737

Top five extrapulmonary sites of disease*	Cases (N=327)** No. (%)
Lymphatic	159 (49)
Pleural	57 (17)
Musculoskeletal	45 (14)
Peritoneal	33 (10)
Genitourinary	18 (6)

* Patients may have multiple extrapulmonary sites of disease
 ** Includes TB cases with and without concurrent pulmonary disease

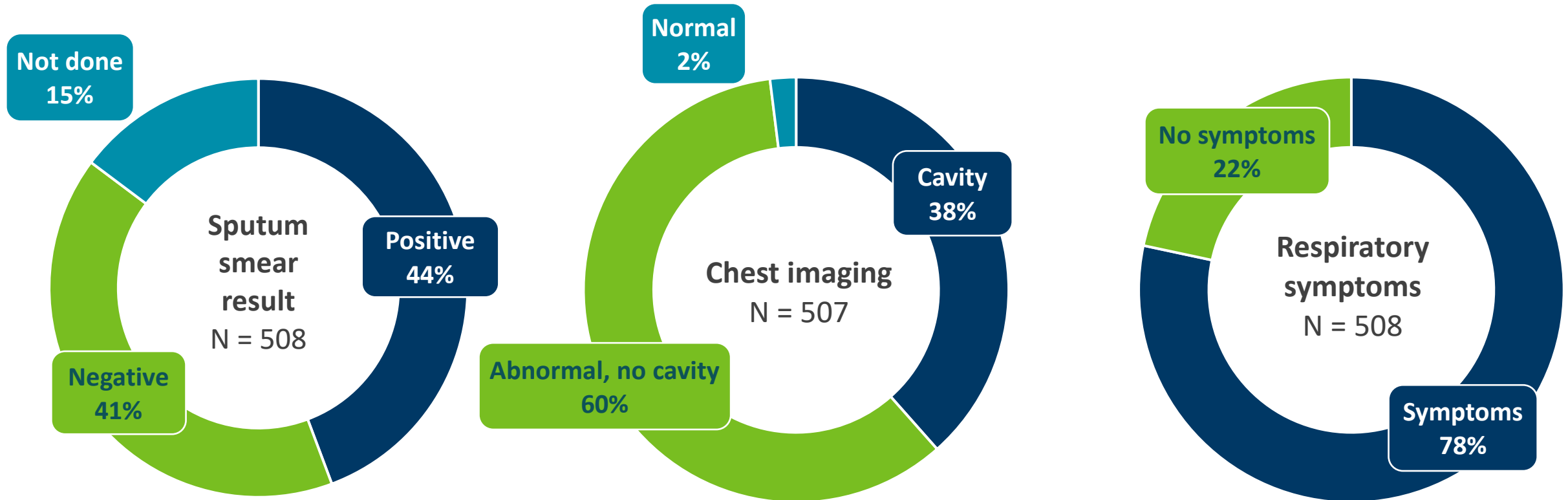
Case verification criteria



N = 737

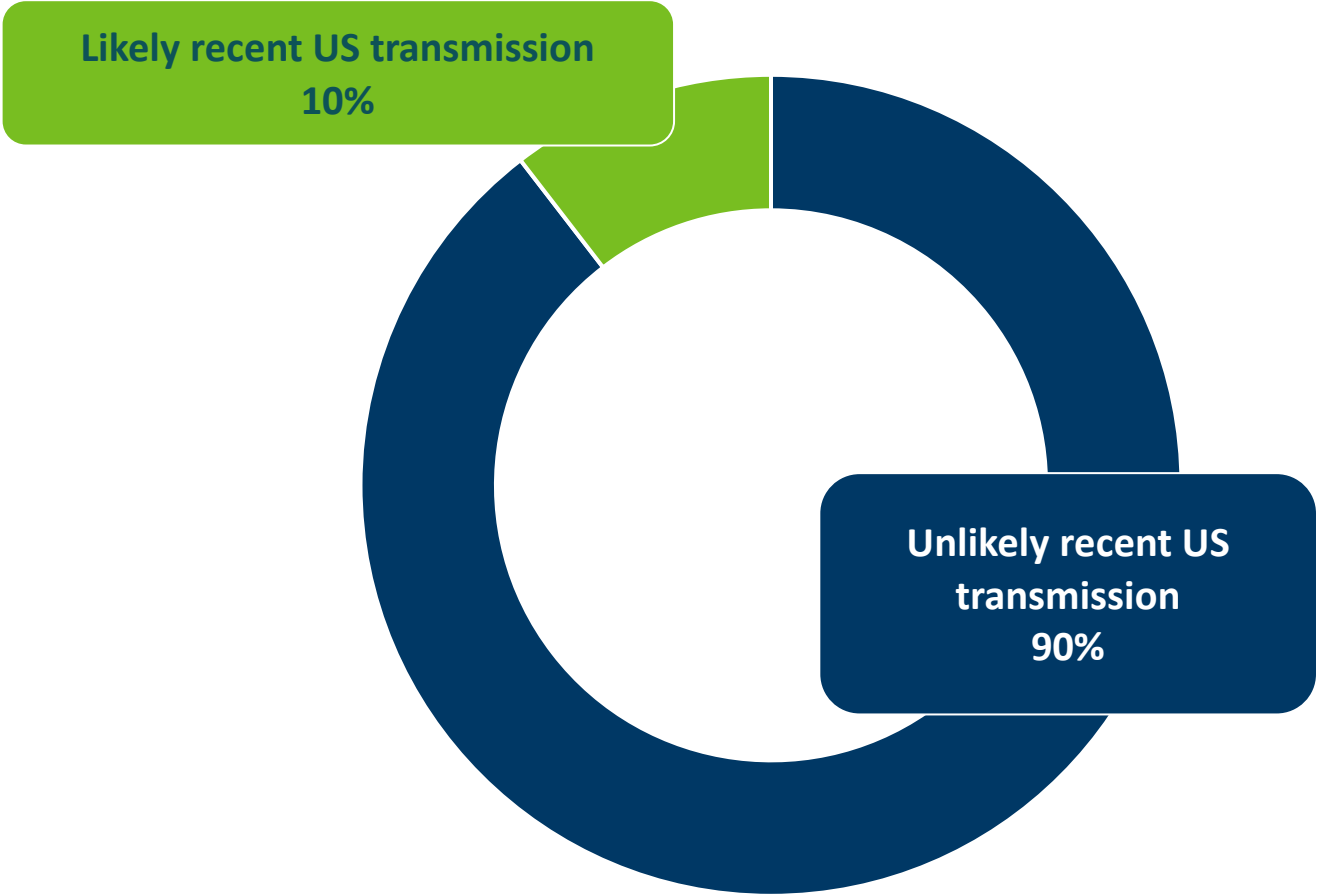
*Based on the public health surveillance definition for TB [CDC. (August 2021) CDC Tuberculosis Surveillance Data Training: 2020 Report of Verified Case of Tuberculosis (RVCT) Instruction Manual. Atlanta, GA: U.S. Department of Health and Human Services, CDC. (Appendix A - Tuberculosis Case Definition for Public Health Surveillance)]

Clinical characteristics of pulmonary TB



27% of pulmonary TB cases had **positive** sputum smears, **cavitation** on chest imaging, and **respiratory symptoms**, all of which correspond to higher possibility of **TB transmission**.

Sources of active TB



N = 737

Drug susceptibility patterns

Year	Cases With Susceptibility Results*	Any Drug Resistance† No. (%)	INH-Resistant** No. (%)	MDR TB‡ No. (%)
2020	90	12 (13)	11 (12)	3 (3)
2021	94	10 (11)	9 (10)	4 (4)
2022	103	13 (13)	11 (11)	3 (3)
2023	113	24 (21)	11 (10)	4 (4)
2024	143	12 (8)	10 (7)	4 (3)
Total	543	71 (13)	52 (10)	18 (3)

* Culture-confirmed cases with drug susceptibility results available

† Resistance to at least one first-line anti-TB drug [i.e., isoniazid (INH), rifampin (RIF), pyrazinamide (PZA), or ethambutol (EMB)]

** INH-resistant cases may also be resistant to other drugs

‡ Multi-drug resistant TB, defined as resistance to at least INH and rifampin (may also be resistant to other drugs)