

Tuberculosis in New Jersey

Statewide Surveillance Report 2018

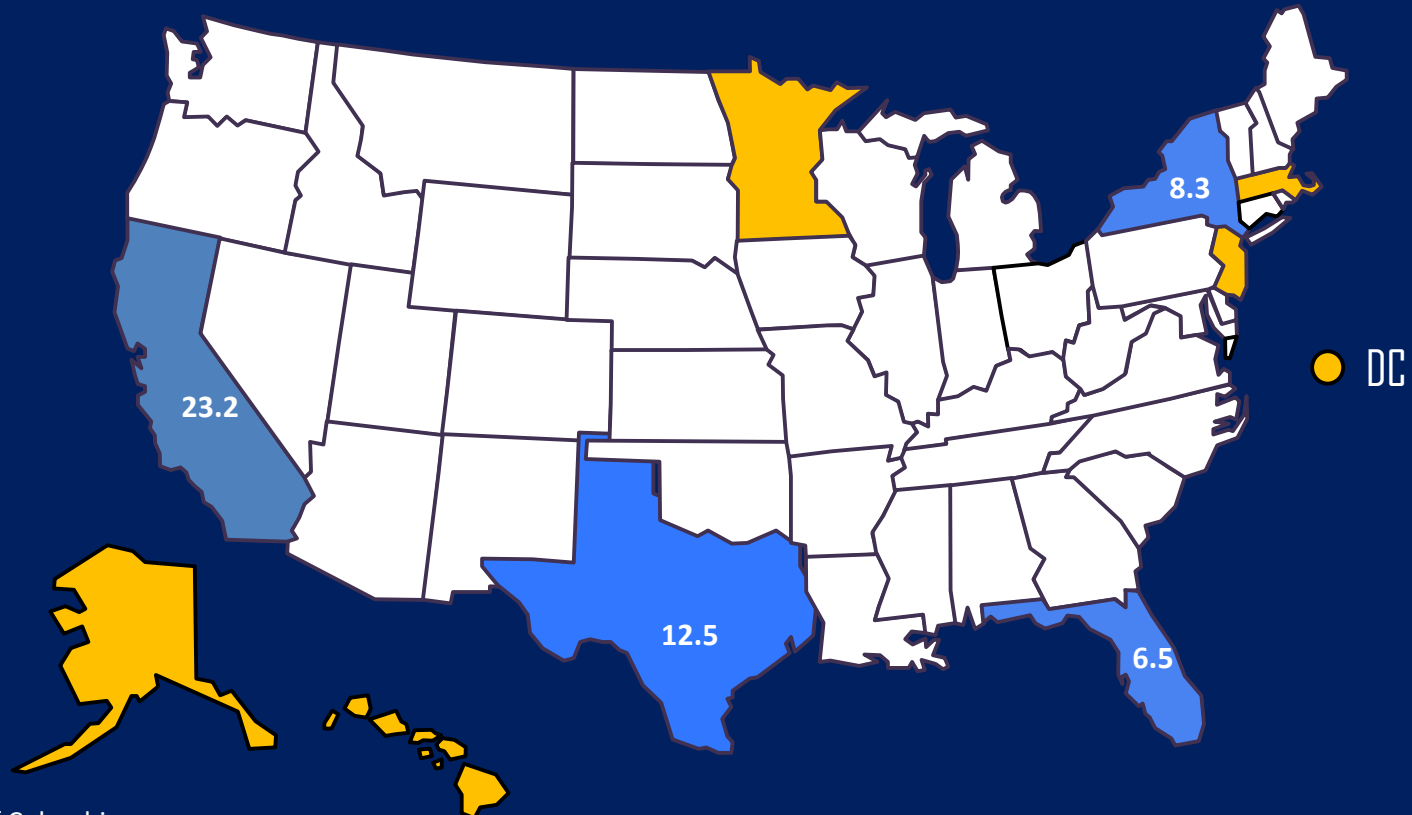


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TB in the United States

- In 2018, the United States reported the lowest number of TB cases (9,025) and lowest incidence rate (2.8 cases per 100,000 persons) on record
- The national incidence rate was 2.8 cases per 100,000 persons
- >Half (n= 4562) of all cases occurred in just four states (California, Texas, New York, and Florida)

Percentage of TB Cases by State, United States, 2018



DC, District of Columbia

Question

When did TB become a reportable disease in the US?

- 1947
- 1950
- 1953
- 1975

Answer

1953

N= 84,304

52.6/100,000

89.3% decrease in TB morbidity in the U.S. since 1953

Recent Transmission in the United States

- Nationally, 1,787 (13.1%) of 13,650 genotyped cases reported during 2016–2017 are attributed to recent transmission
- More than 80% of TB cases in the United States result from longstanding, untreated latent TB infection
- **Up to 13 million:** estimated number of people in the United States living with latent TB infection

“Ending TB will require a dual approach of maintaining and strengthening current TB control priorities while increasing efforts to identify and treat latent TB infection in high-risk populations.”

<https://www.cdc.gov/features/burden-tb-us/index.html>

**TB Cases, Case Rates and Trends
in
New Jersey**

New Jersey Quick Facts

- New Jersey is the fourth smallest and most densely populated state, with approximately 1,200 people per square mile
- In 2018, the population was 8.9 million; 51.2 percent females and 48.8 percent males
- The largest segment of the population is White (55.1%) followed by Hispanic (20.4%), Black (15%), and Asian (10.1%)
- Approximately 22.1% percent were foreign-born

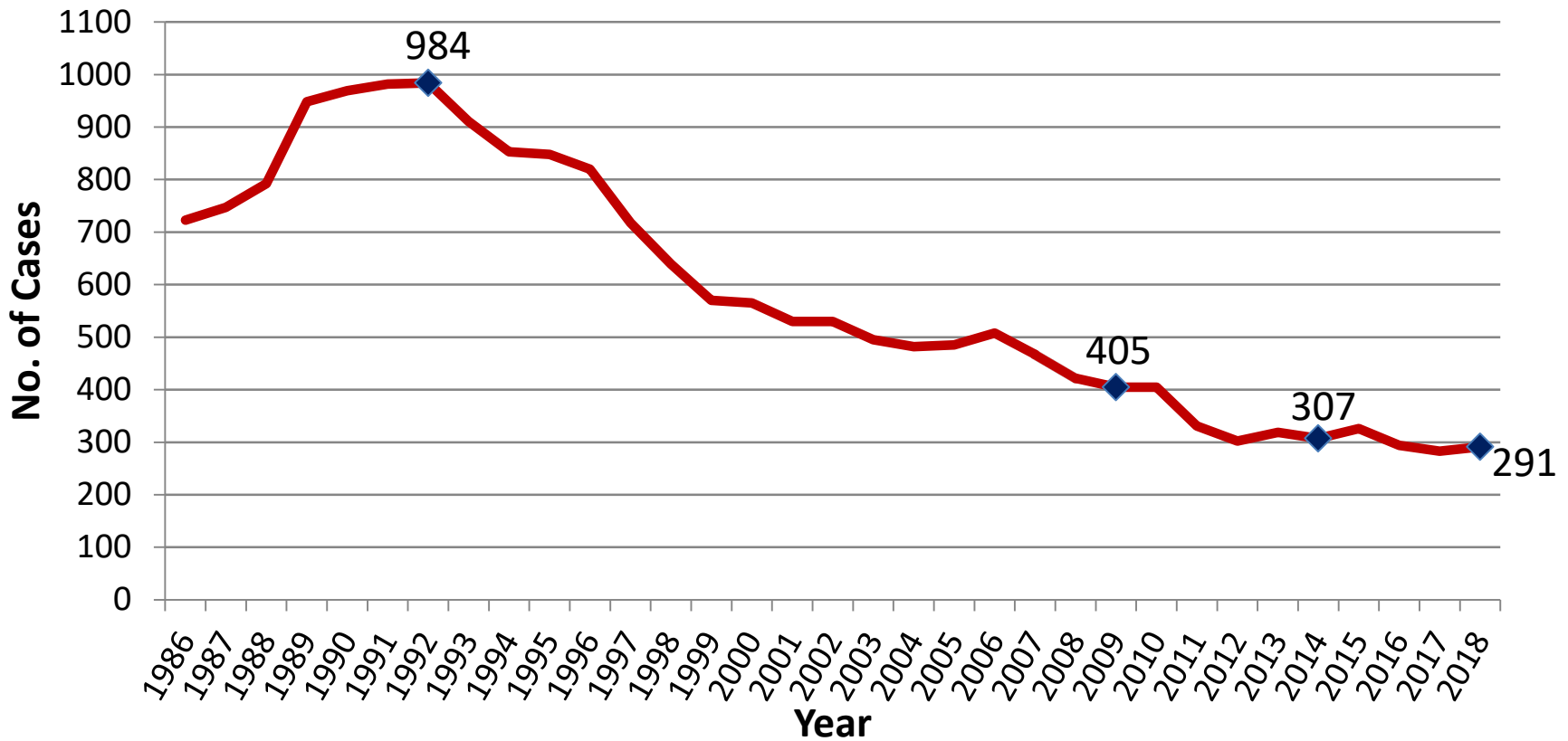
Case Counts 2018

| Rank | Reporting Area | Reported Cases |
|------|--------------------------------|---------------------|
| 1 | California | 2092 |
| 2 | Texas | 1129 |
| 3 | New York (n=191) + (NYC n=559) | 750 |
| 4 | Florida | 591 |
| 5 | Illinois | 319 |
| 6 | New Jersey | 291 |
| 7 | Georgia | 272 |
| 8 | Pennsylvania | 212 |
| 9 | Maryland | 208 |
| 10 | Virginia | 205 |
| | Total | 6,069(67.2%) |

TB cases reported in the US (2018): N= 9,025

TB Morbidity

New Jersey, 1986–2018



TB Case Rates*

New Jersey, 2009–2018

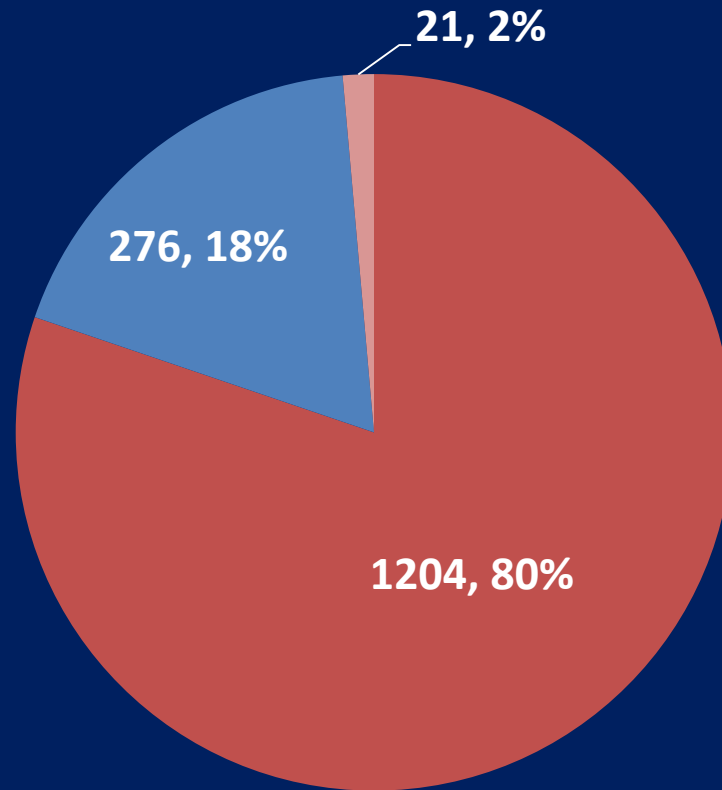
| Year | No. | Rate* |
|------|-----|-------|
| 2009 | 405 | 4.7 |
| 2010 | 404 | 4.6 |
| 2011 | 331 | 3.8 |
| 2012 | 302 | 3.4 |
| 2013 | 319 | 3.6 |
| 2014 | 307 | 3.4 |
| 2015 | 326 | 3.6 |
| 2016 | 294 | 3.3 |
| 2017 | 283 | 3.2 |
| 2018 | 291 | 3.3 |

*Cases per 100,000 population per year

TB Case Reporting Summary Data

New Jersey, 2014–2018

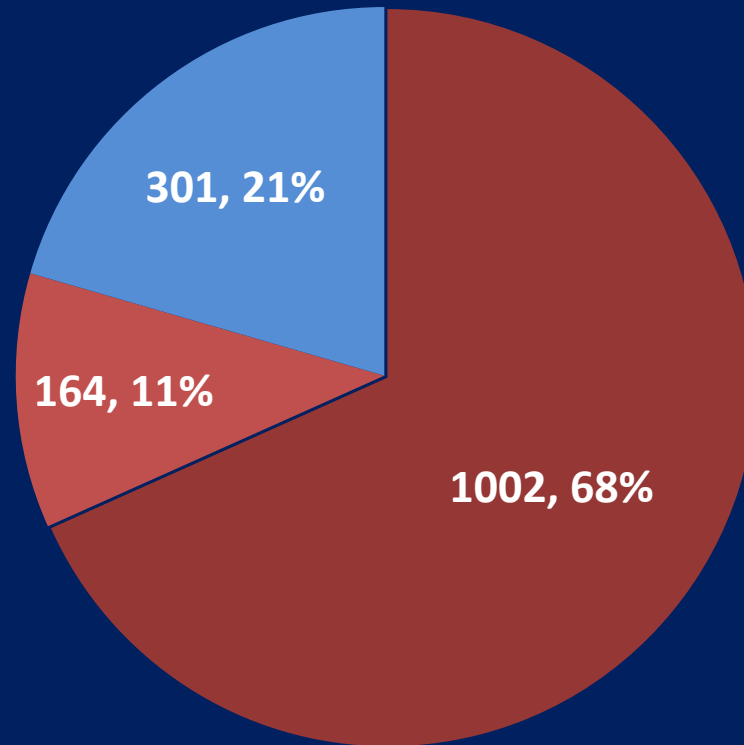
TB Cases by Verification Criteria New Jersey, 2014–2018 (N=1,501)



■ Culture Confirmed ■ Clinical Diagnosis ■ NAAT

TB Cases by Site of Disease

New Jersey, 2014–2018 (N=1,501)

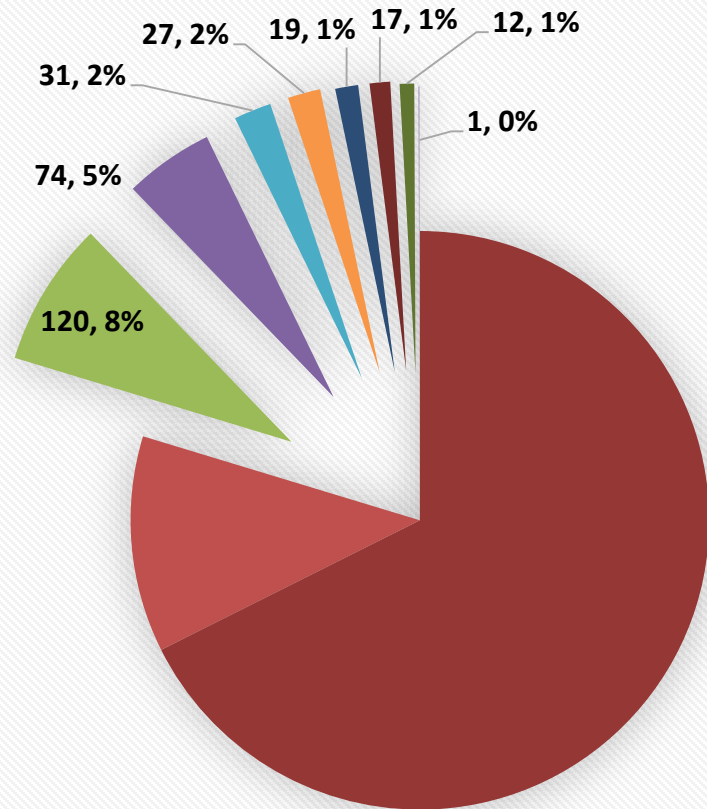


■ Pulmonary Alone

■ Pulmonary + secondary site

■ Extrapulmonary

Extra-pulmonary TB by Site of Disease New Jersey, 2014–2018 (n=301)



■ Lymphatic ■ Pleural ■ Bone or Joint ■ Peritoneal ■ Genitourinary ■ Meningeal ■ Multiple Sites ■ Laryngeal

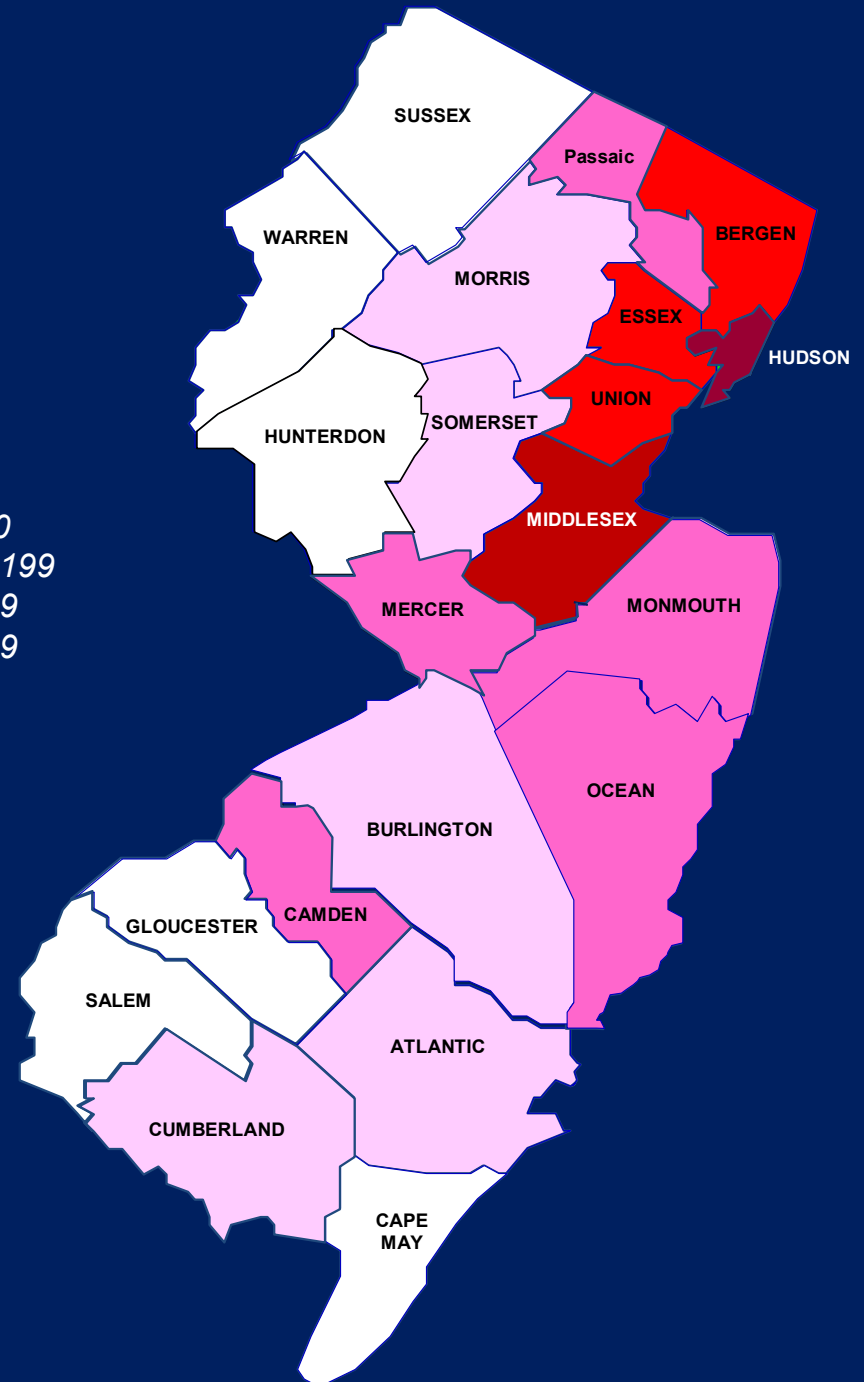
Geographic Distribution of TB in New Jersey

Counted TB Cases by County

New Jersey, 2014–2018 (N=1,501)

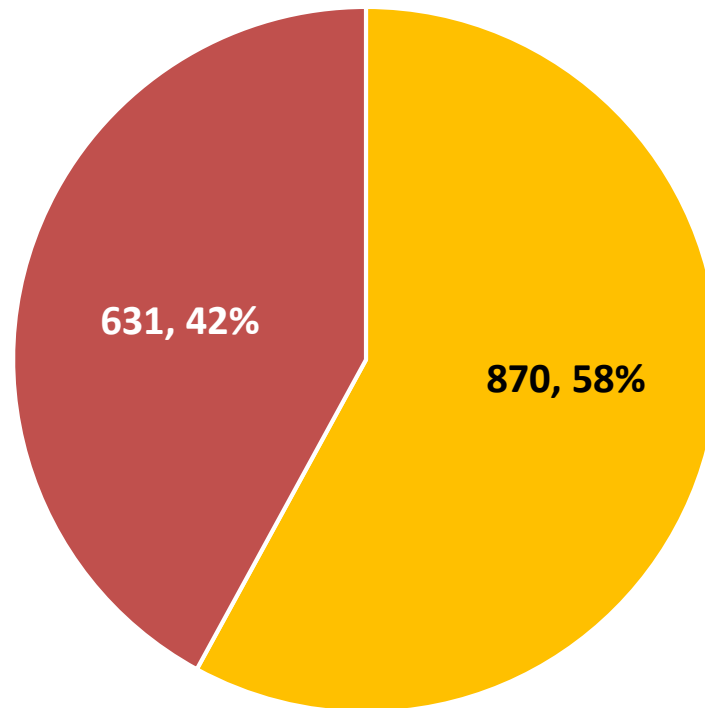
| Rank | Reporting County | Frequency | Percent | Cum. Percent |
|------|------------------|-------------|----------------|----------------|
| 1 | Hudson | 253 | 16.86% | 16.86% |
| 2 | Middlesex | 247 | 16.46% | 33.31% |
| 3 | Essex | 180 | 11.99% | 45.30% |
| 4 | Bergen | 143 | 9.53% | 54.83% |
| 5 | Union | 114 | 7.59% | 62.43% |
| 6 | Passaic | 88 | 5.86% | 68.29% |
| 7 | Mercer | 72 | 4.80% | 73.08% |
| 8 | Camden | 55 | 3.66% | 76.75% |
| 9 | Monmouth | 51 | 3.40% | 80.15% |
| 10 | Ocean | 50 | 3.33% | 83.48% |
| 11 | Somerset | 49 | 3.26% | 86.74% |
| 12 | Morris | 48 | 3.20% | 89.94% |
| 13 | Cumberland | 40 | 2.66% | 92.60% |
| 14 | Atlantic | 35 | 2.33% | 94.94% |
| 15 | Burlington | 31 | 2.07% | 97.00% |
| 16 | Gloucester | 17 | 1.13% | 98.13% |
| 17 | Hunterdon | 10 | 0.67% | 98.80% |
| 18 | Warren | 9 | 0.60% | 99.40% |
| 19 | Cape May | 4 | 0.27% | 99.67% |
| 20 | Salem | 4 | 0.27% | 99.93% |
| 21 | Sussex | 1 | 0.07% | 100.00% |
| | TOTAL | 1501 | 100.00% | 100.00% |

Counted TB Cases New Jersey, 2014–2018



Demographics

Reported TB Cases by Sex at Birth New Jersey, 2014–2018 (N=1,501)



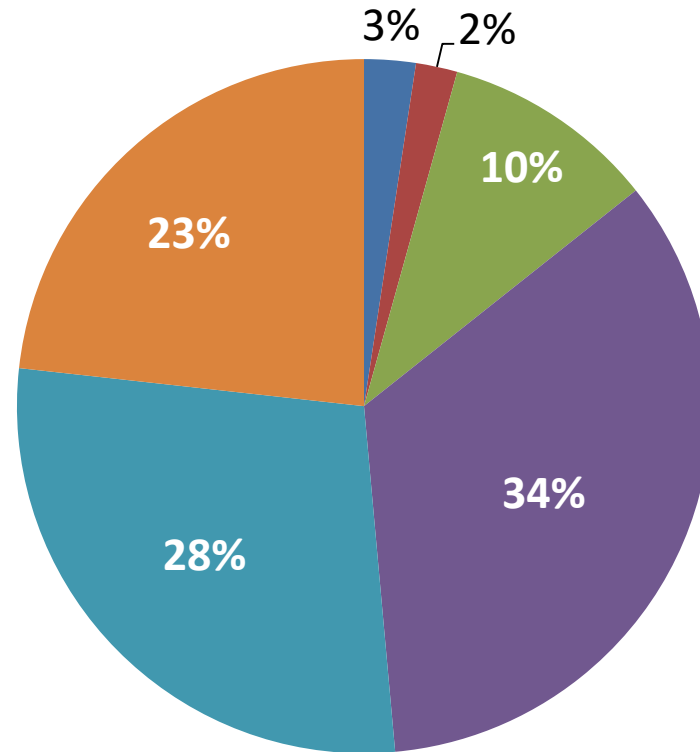
■ Male ■ Female

Tuberculosis and Gender

Globally men are significantly more at risk of contracting and dying from TB than women. In 2017 close to 6 million adult men contracted TB and around 840,000 died from it. This compares with an estimated 3.2 million adult women who fell ill and almost half a million who died from TB.

<https://www.who.int/tb/areas-of-work/population-groups/gender/en/>

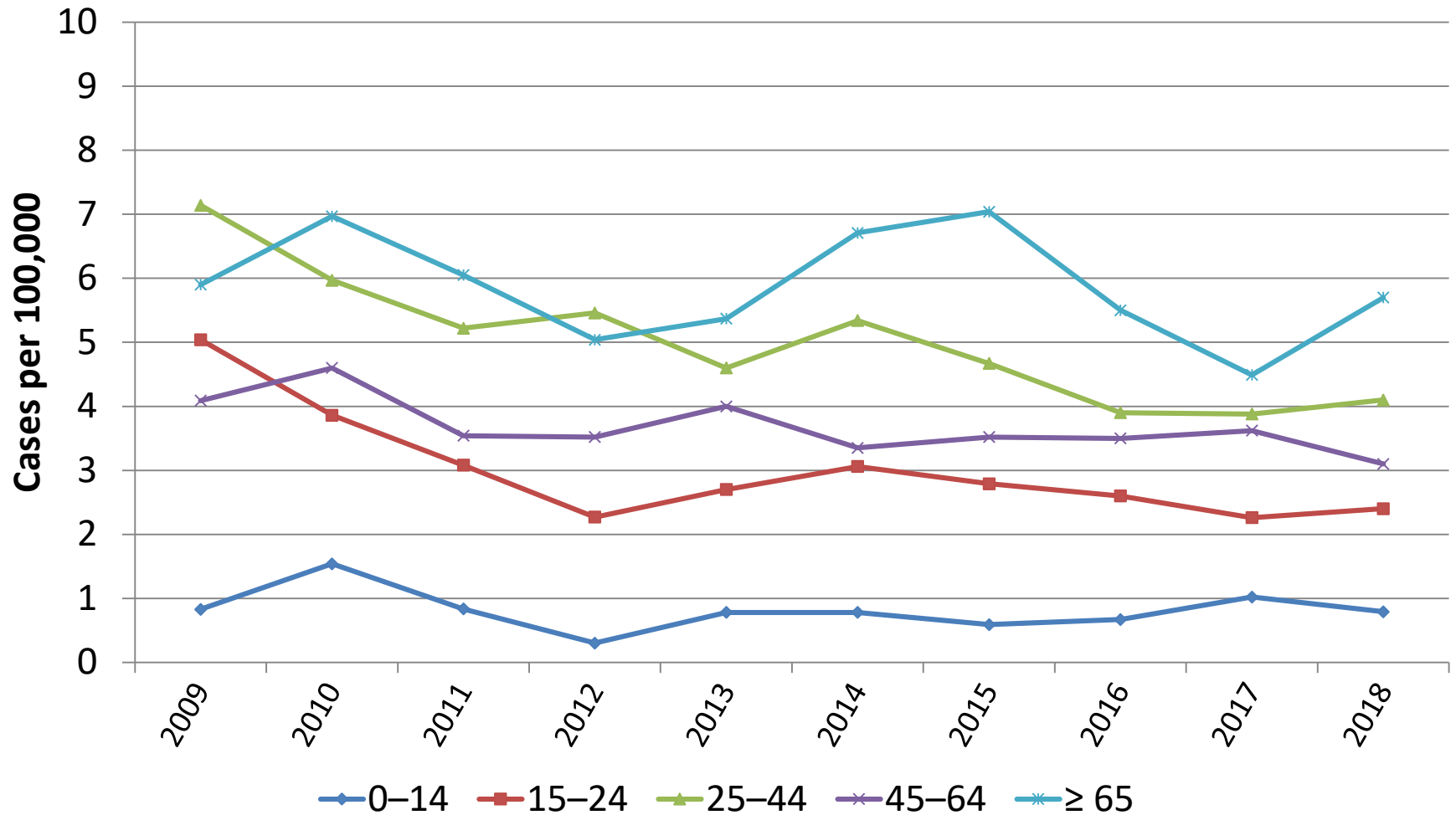
Reported TB Cases by Age Group New Jersey, 2014–2018 (N=1,501)



■ ≤ 4 yrs ■ 05–14 yrs ■ 15–24 yrs ■ 25–44 yrs ■ 45–64 yrs ■ ≥ 65 yrs

TB Case Rates* by Age Group

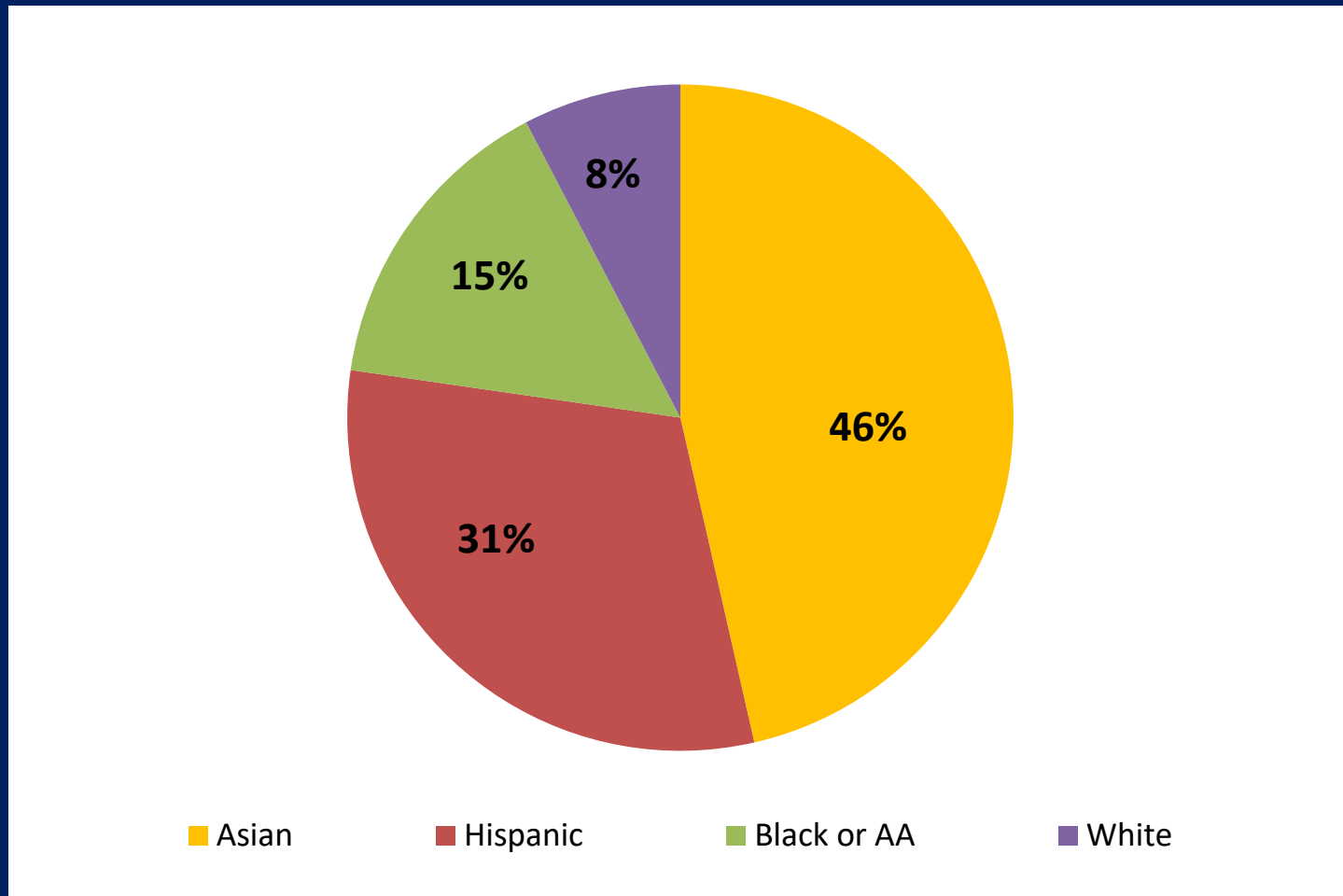
New Jersey, 2008–2017



*Cases per 100,000 population per year

Reported TB Cases by Race/Ethnicity*

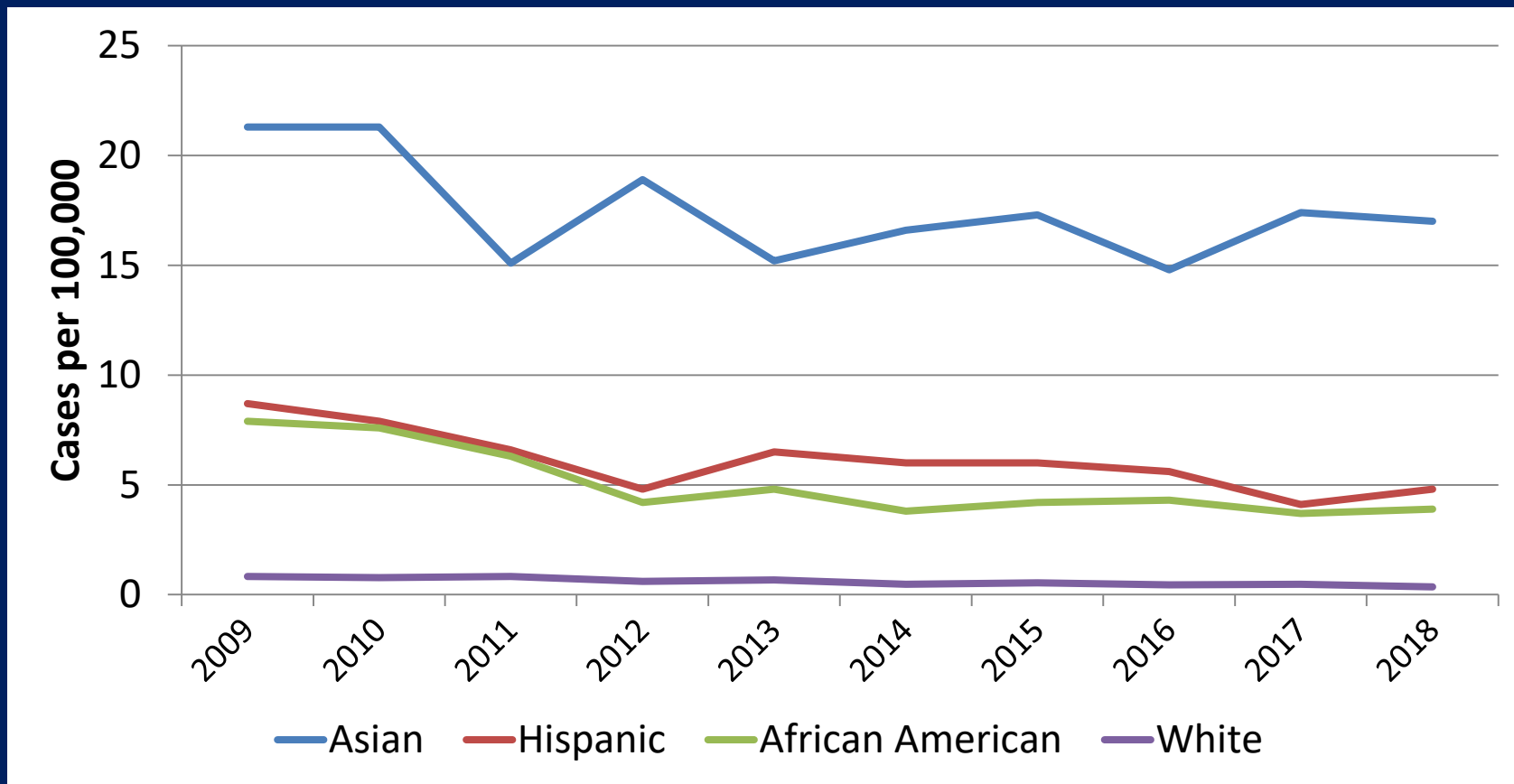
New Jersey, 2014–2018 (N=1,501)



*All races are non-Hispanic

TB Case Rates by Race/Ethnicity*

New Jersey, 2008–2017



*All races are non-Hispanic

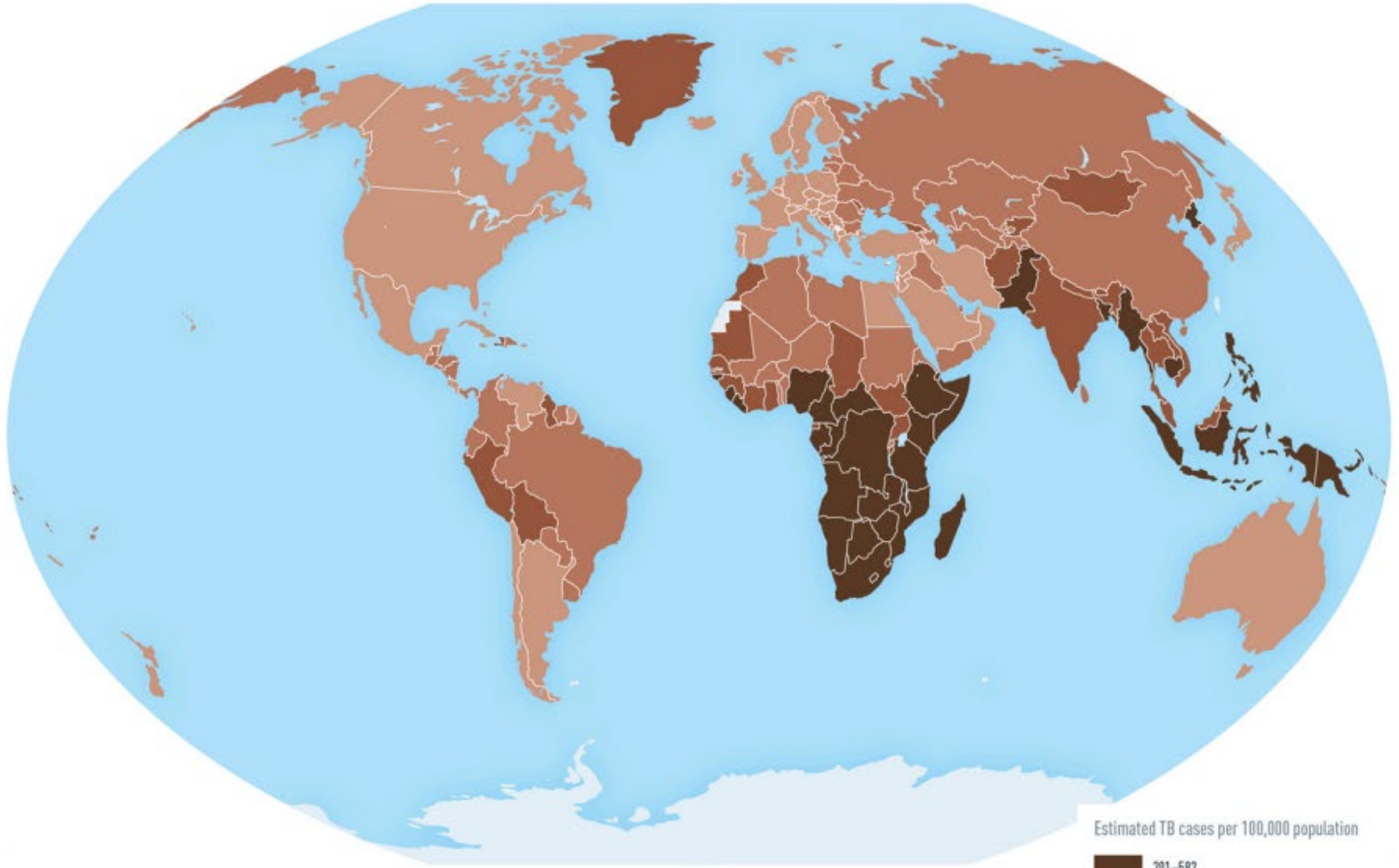
**TB Among the Foreign-born
in
New Jersey**

National Trends in Tuberculosis, 2018

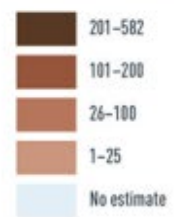
- TB disease in the United States is most common among people who were born in countries with high rates of TB
- In 2018, a total of 70.2% of reported TB cases in the United States occurred among non-U.S.-born people

“Country of birth continues to be a risk factor for TB diagnosed in the United States because the risk of TB exposure varies by country.”

Reported Tuberculosis in the United States, 2016 Centers for Disease Control and Prevention National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
Division of Tuberculosis Elimination October 2017



Estimated TB cases per 100,000 population

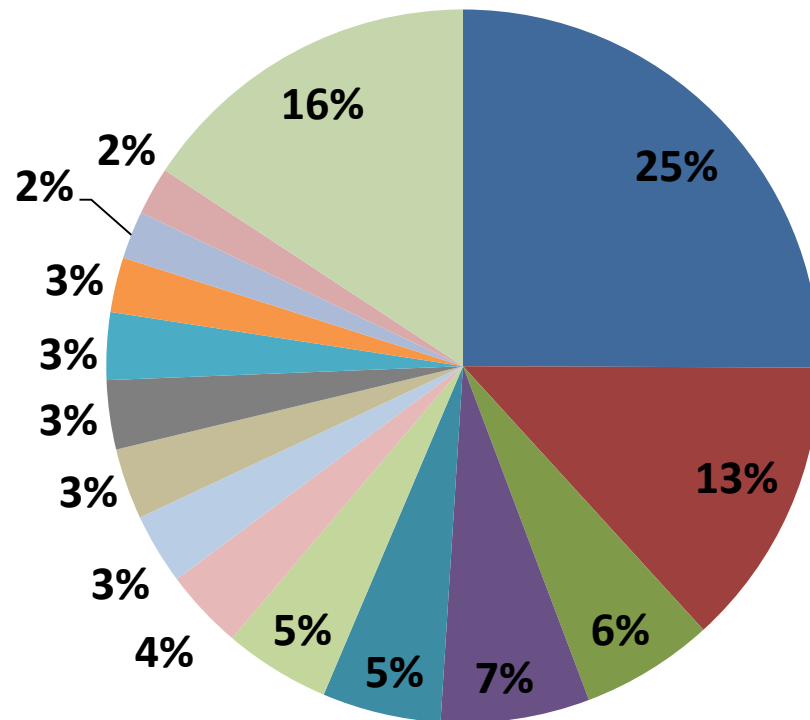


MAP 3-13. **Estimated tuberculosis (TB) incidence rates¹**

¹ Disease data source: World Health Organization. "Global Tuberculosis Report 2013" at <http://www.who.int/tb/country/data/download/en/>. Accessed June 23, 2014.

Countries of Birth of Foreign-born Persons Reported with TB, New Jersey 2014–2018 (n=1,245)

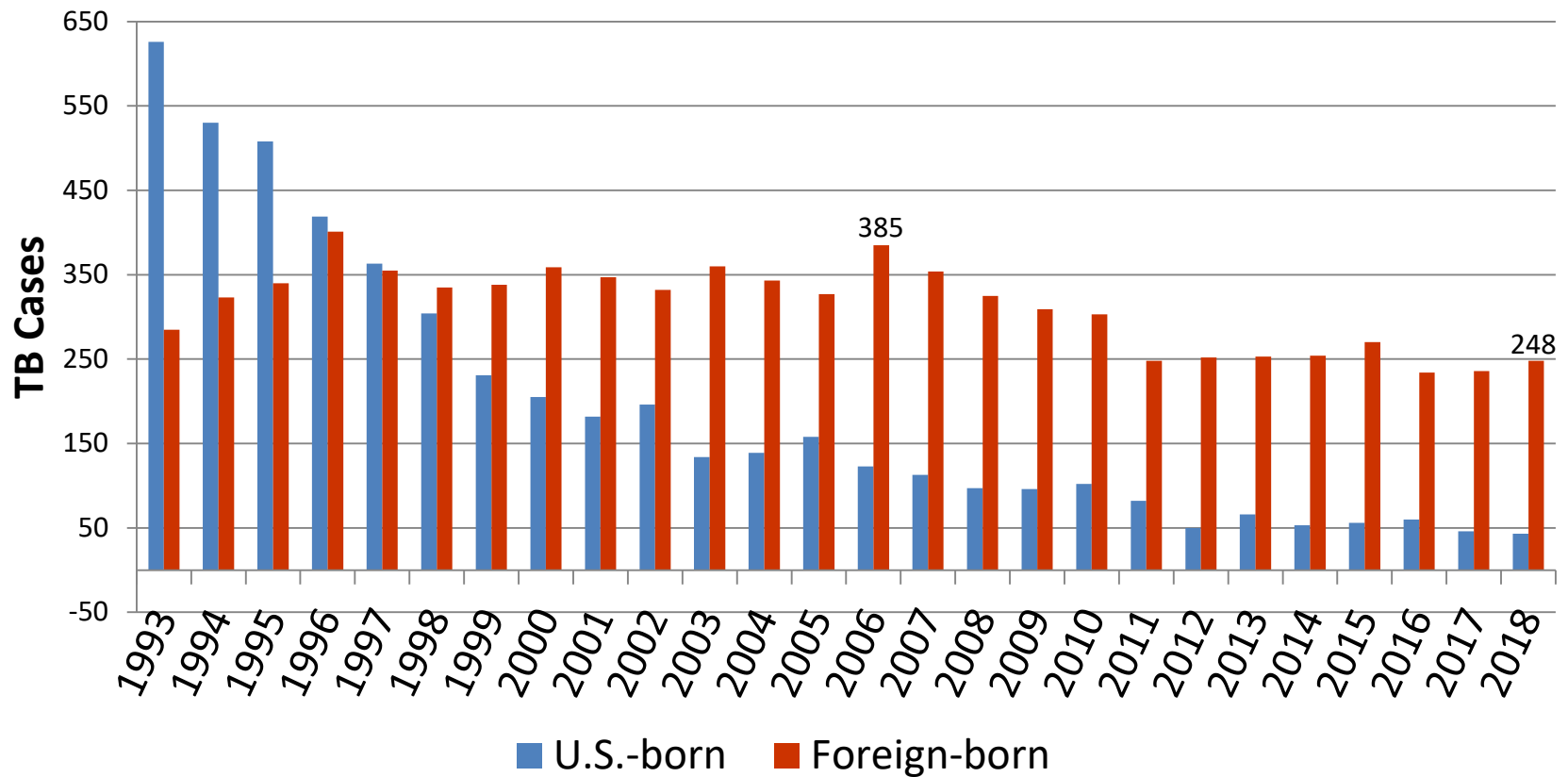
FB= 83.0%



- India
- Haiti
- S. Korea
- Colombia
- Philippines
- Ecuador
- Viet Nam
- Honduras
- Mexico
- China
- Guatemala
- All other*
- Peru
- Dominican Republic
- Pakistan

*All other = 52 countries

Number of TB Cases in U.S.-born vs. Foreign-born Persons New Jersey, 1993–2018

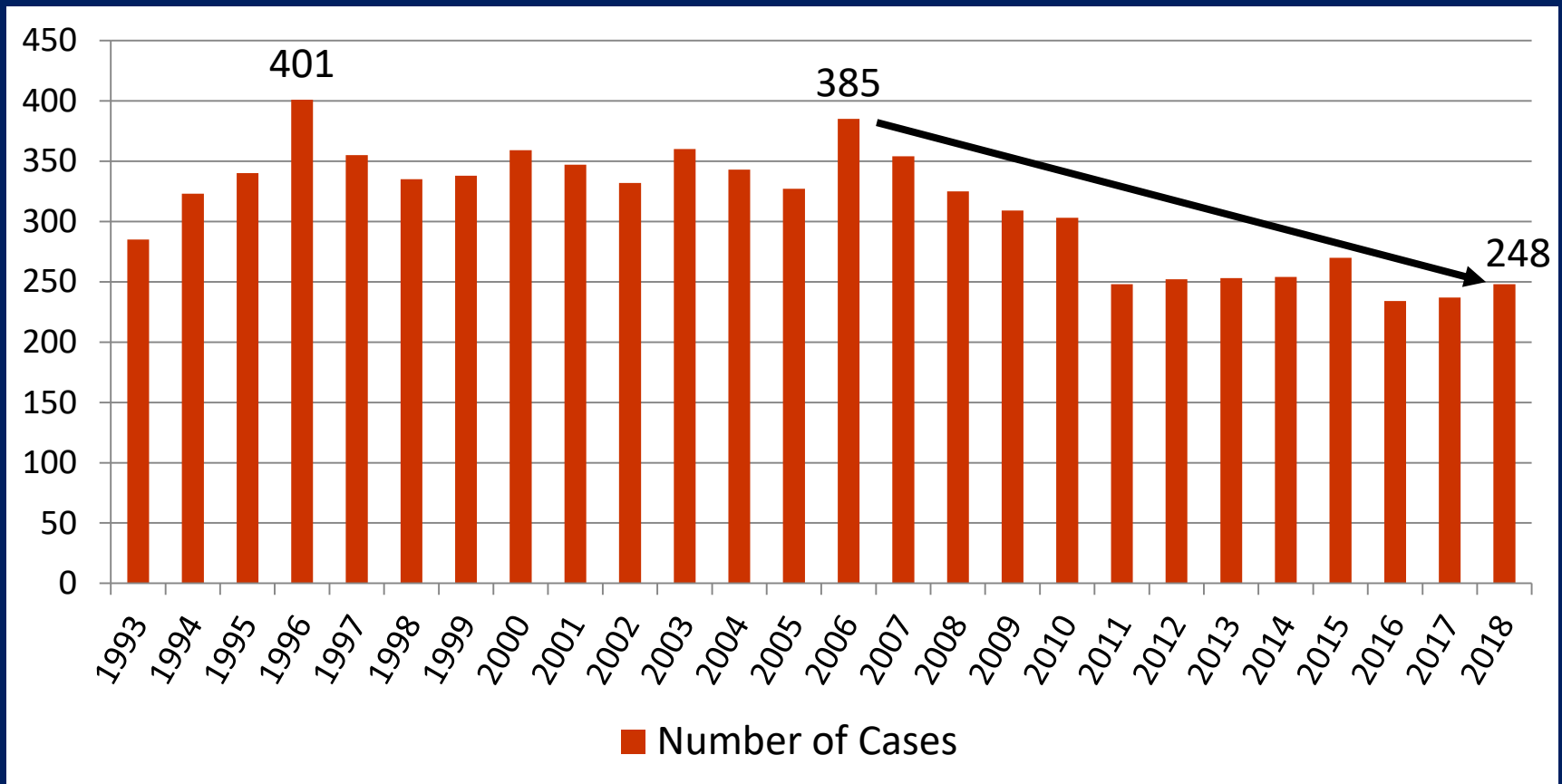


Question

The actual number of TB cases occurring among foreign-born persons in NJ has increased over the past 10 years

- True
- False

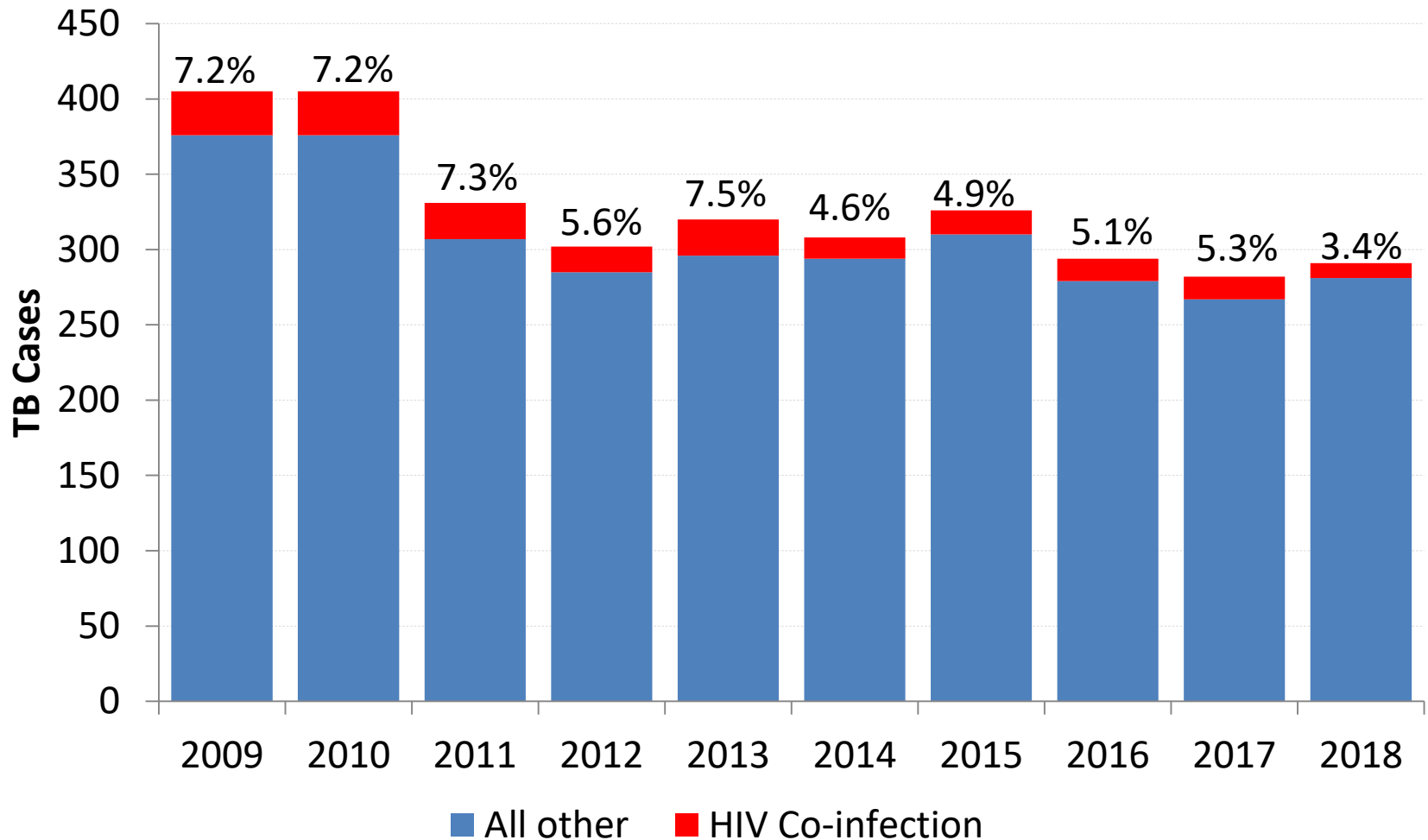
TB Cases among Foreign-born Persons New Jersey, 1993–2018



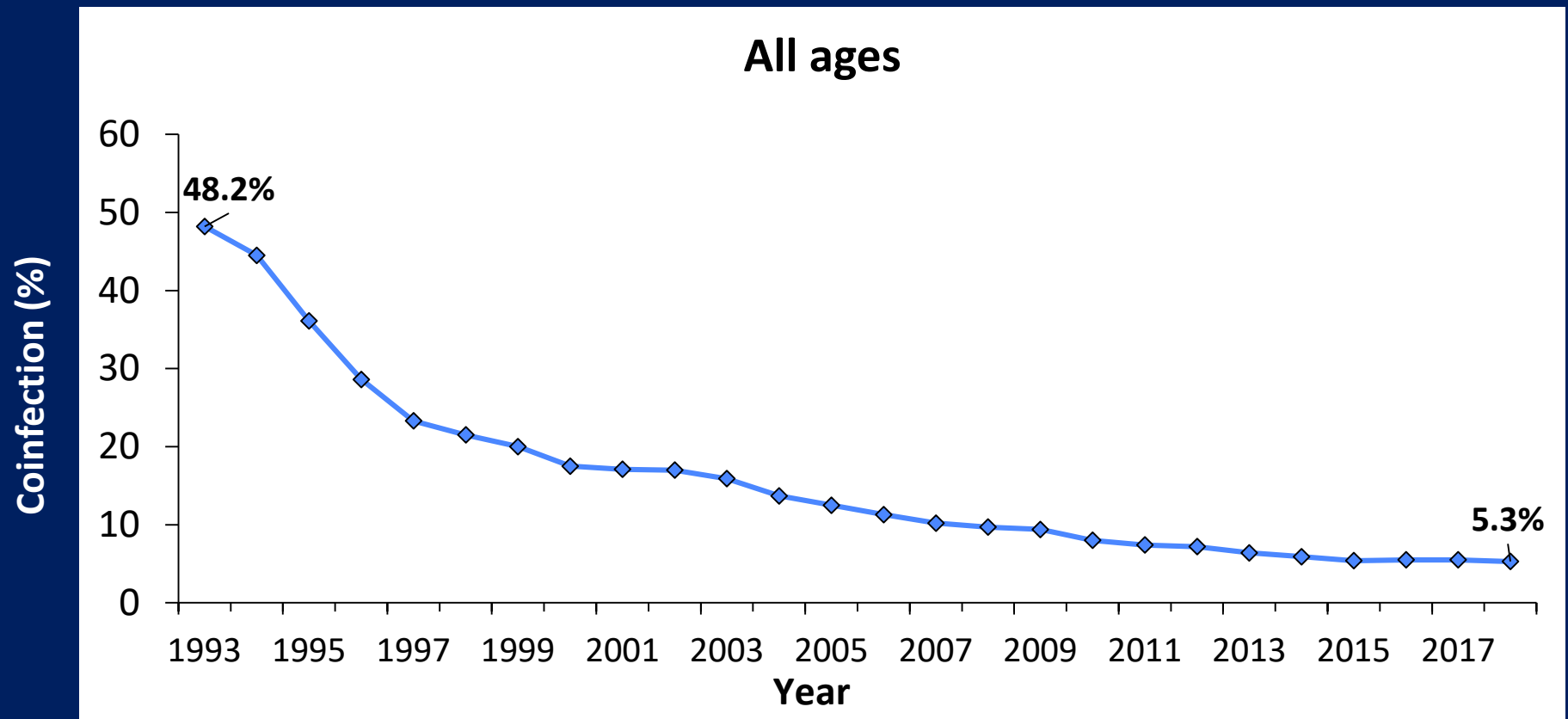
**TB/HIV Co-infection
in
New Jersey**

TB/HIV Co-infection

New Jersey, 2009–2018



Estimated HIV Coinfection Among Persons Reported with TB, United States, 1993–2018





New Jersey, 2018 (N= 291)

03/27/2019
Romano, Frank

Frequency Report



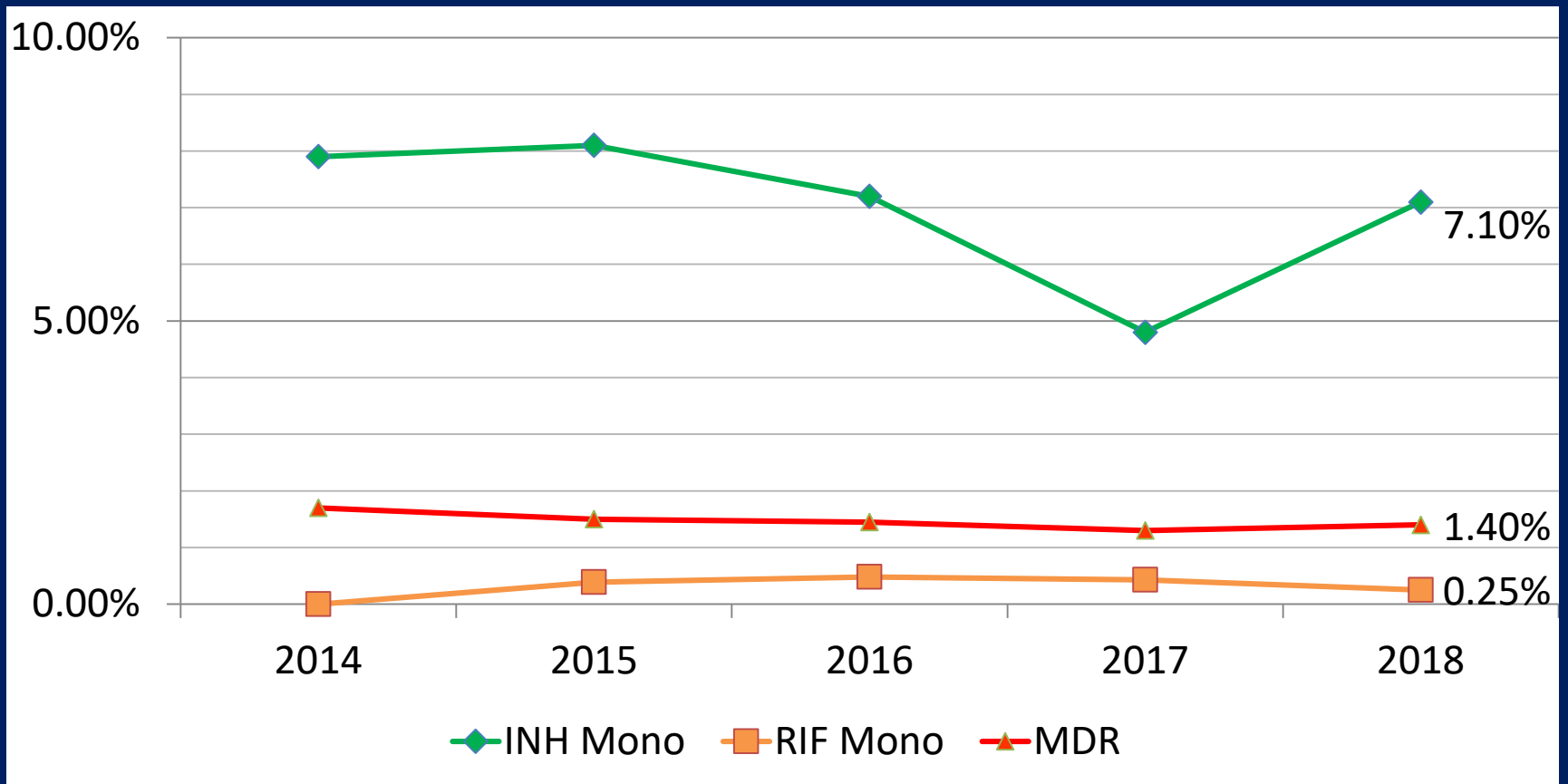
| Risk Factors | Number of Records | Percent |
|--|-------------------|---------|
| None | 181 | 62.20% |
| Diabetes Mellitus | 57 | 19.59% |
| Other Risk | 27 | 9.28% |
| Contact of Infectious TB Patient | 19 | 6.53% |
| Immunosuppression (not HIV/AIDS) | 17 | 5.84% |
| End-stage Renal Disease | 10 | 3.44% |
| HIV pos: n= 10 (3.44%) TNF Antagonist Therapy | 5 | 1.72% |
| Post-organ Transplantation | 4 | 1.37% |
| Incomplete LTBI Therapy | 2 | 0.69% |
| Missed Contact | 1 | 0.34% |
| Missing | 0 | 0.00% |
| Contact of MDR-TB Patient | 0 | 0.00% |
| Total | 323 | |

Filter:

State = NJ
Counties = All Counties
Year = 2018

**Drug Resistant TB
in
New Jersey**

Anti-TB Drug Resistance Among Culture Confirmed Cases New Jersey, 2014–2018 (n=1,204)



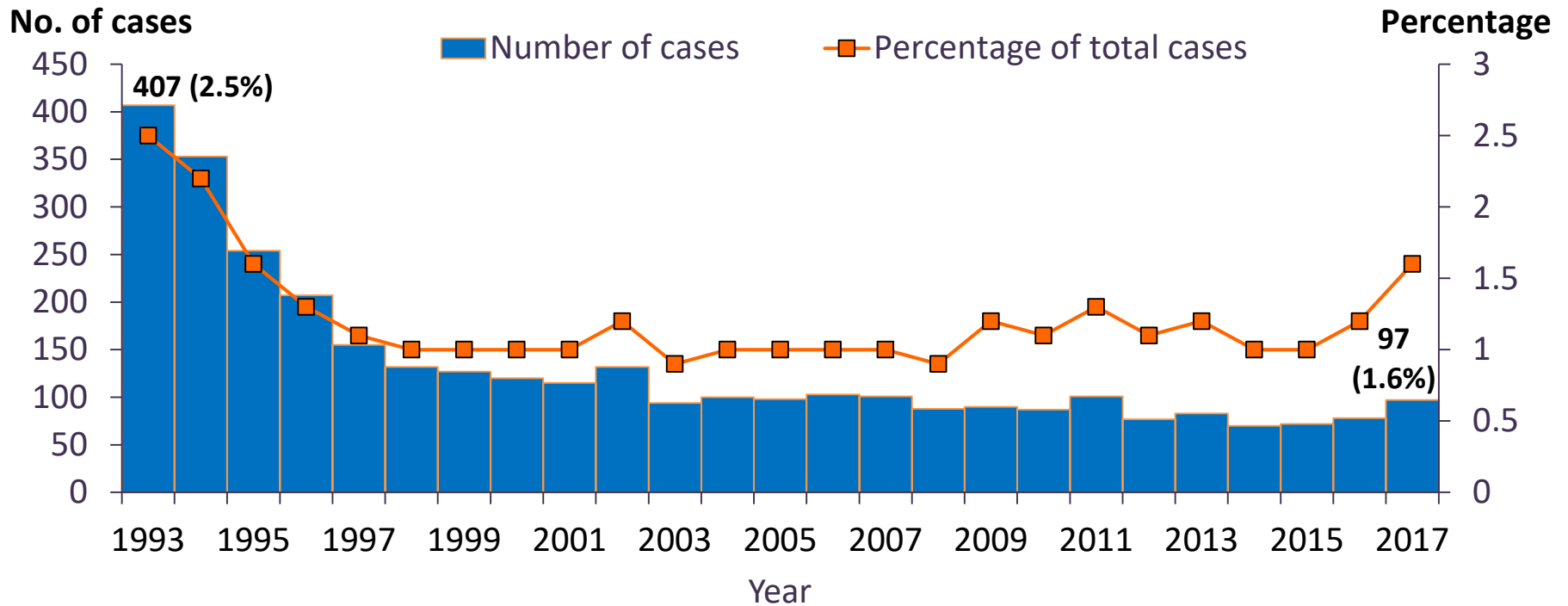
Multidrug resistant TB (MDR TB) is defined as resistance to both isoniazid and rifampin

Question

The incidence multi-drug resistant TB has increased in the US over the past 20 years?

- True
- False

Primary MDR TB, United States, 1993–2017*



* Based on initial isolates from persons with no prior history of TB; multidrug-resistant TB (MDR TB) is defined as resistance to at least isoniazid and rifampin.

MDR TB by Country of Birth

New Jersey, 2014–2018 (n=21) **XDR TB: n= 2**

| Country of Birth | Frequency | Percent | Cum. Percent |
|----------------------------|-----------|----------------|----------------|
| PERU | 5 | 23.81% | 23.81% |
| DOMINICAN REPUBLIC | 3 | 14.29% | 38.10% |
| INDIA | 3 | 14.29% | 52.38% |
| UNITED STATES | 2 | 9.52% | 61.90% |
| CHINA | 1 | 4.76% | 66.67% |
| ECUADOR | 1 | 4.76% | 71.43% |
| GEORGIA, DEMOCRATIC REP OF | 1 | 4.76% | 76.19% |
| KOREA, REPUBLIC OF | 1 | 4.76% | 80.95% |
| MEXICO | 1 | 4.76% | 85.71% |
| NEPAL | 1 | 4.76% | 90.48% |
| PAKISTAN | 1 | 4.76% | 95.24% |
| UKRAINE | 1 | 4.76% | 100.00% |
| TOTAL | 21 | 100.00% | 100.00% |

Thank You!

New Jersey Dept. of Health
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