



**Indiana**  
**Department**  
**of**  
**Health**

# Epidemiology of TB

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Division of Infectious Diseases  
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# Overview

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- I. Global TB Data
- II. National TB Data
- III. Indiana TB Data

# Disclosures

- Medical consultant, TB Program  
Indiana Department of Health
- Owner of a 39 consecutive streak of  
negative TB screening tests!
- Genuine Iowa farm boy
- Grandfather of Avery Lynn



# Global TB Data

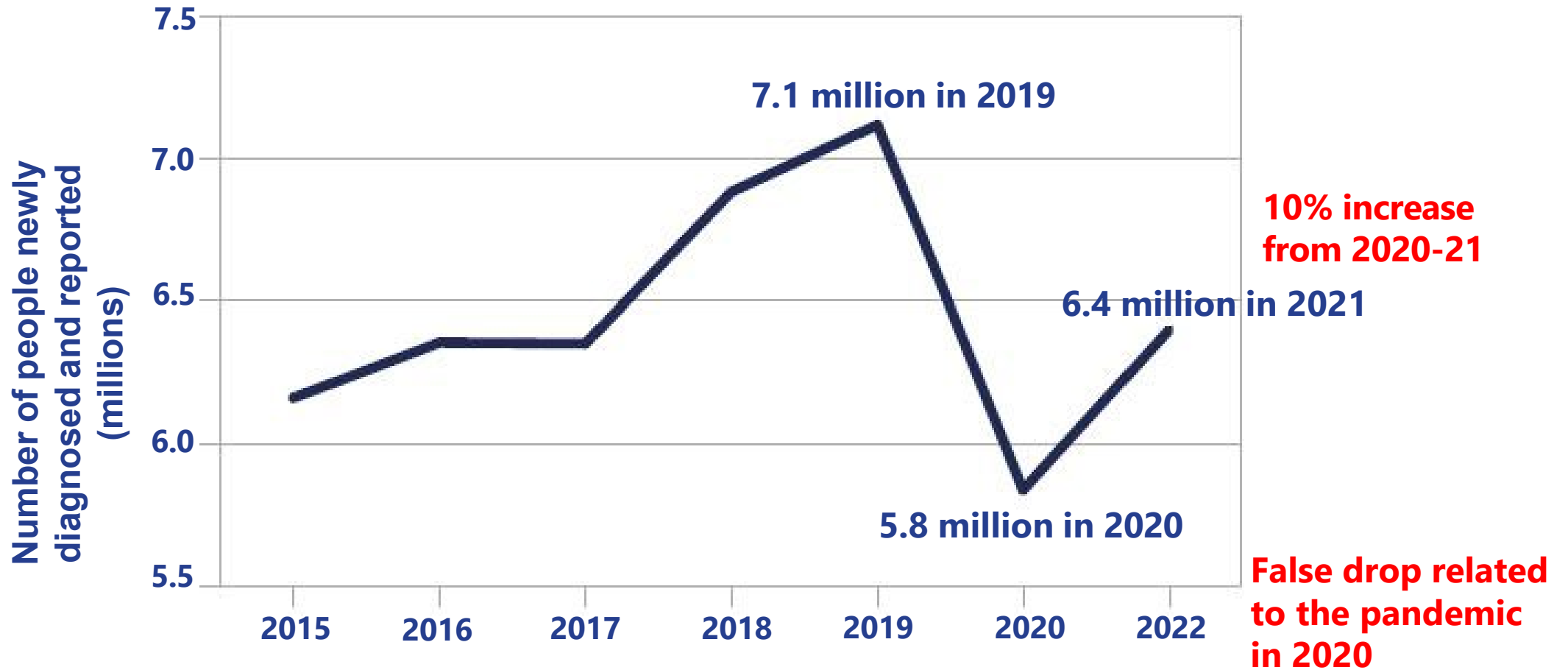


# Global TB Burden, 2021

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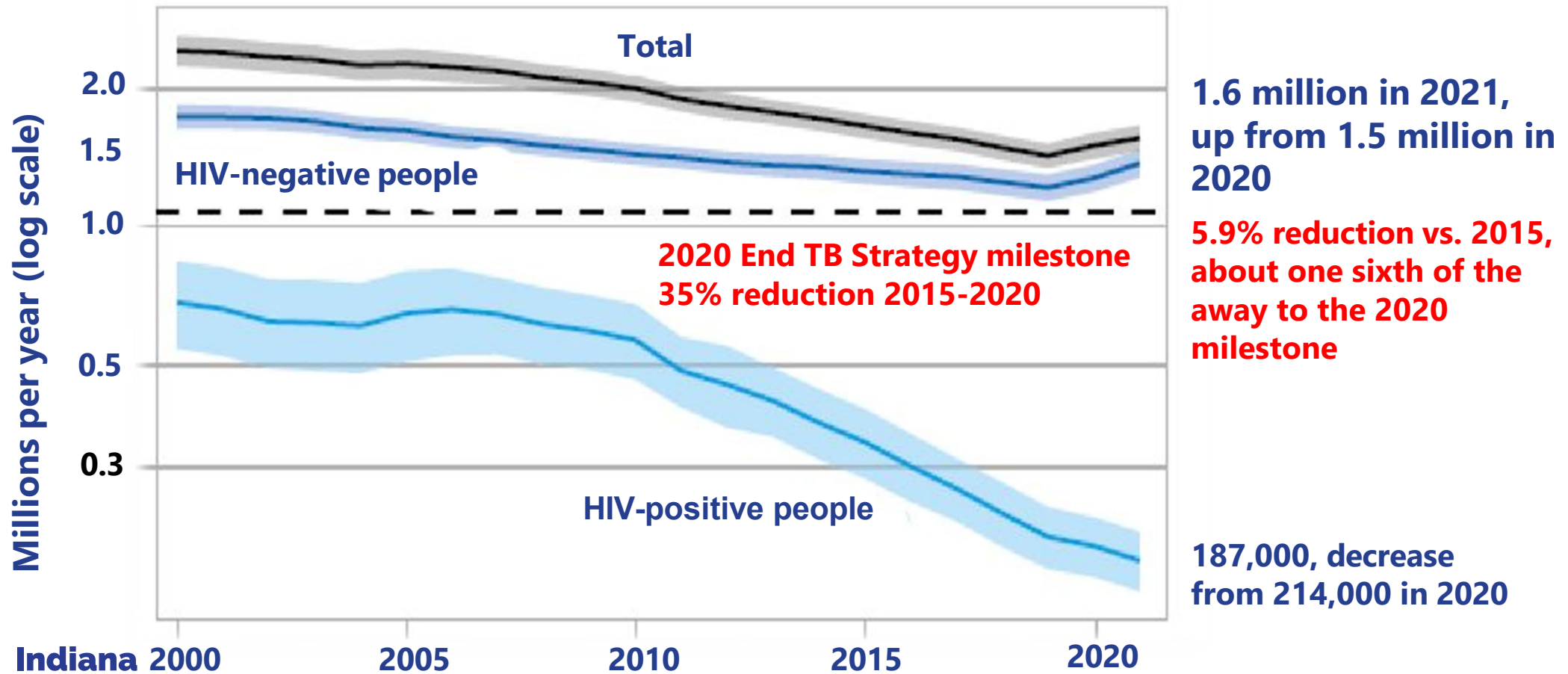
- An estimated 10.6 million new TB disease cases (10.1, '20)
  - Men accounted for 6 million cases
  - Children accounted 1.2 million cases
- 1.6 million deaths due to TB disease (1.5, '20)
  - With 0.2 million deaths from TB among people living with HIV (0.21 last year)
- TB incidence *had been falling* at about 2% per year but the COVID pandemic has allowed rates to increase

# Partial Recovery from Impact of COVID- related Disruptions



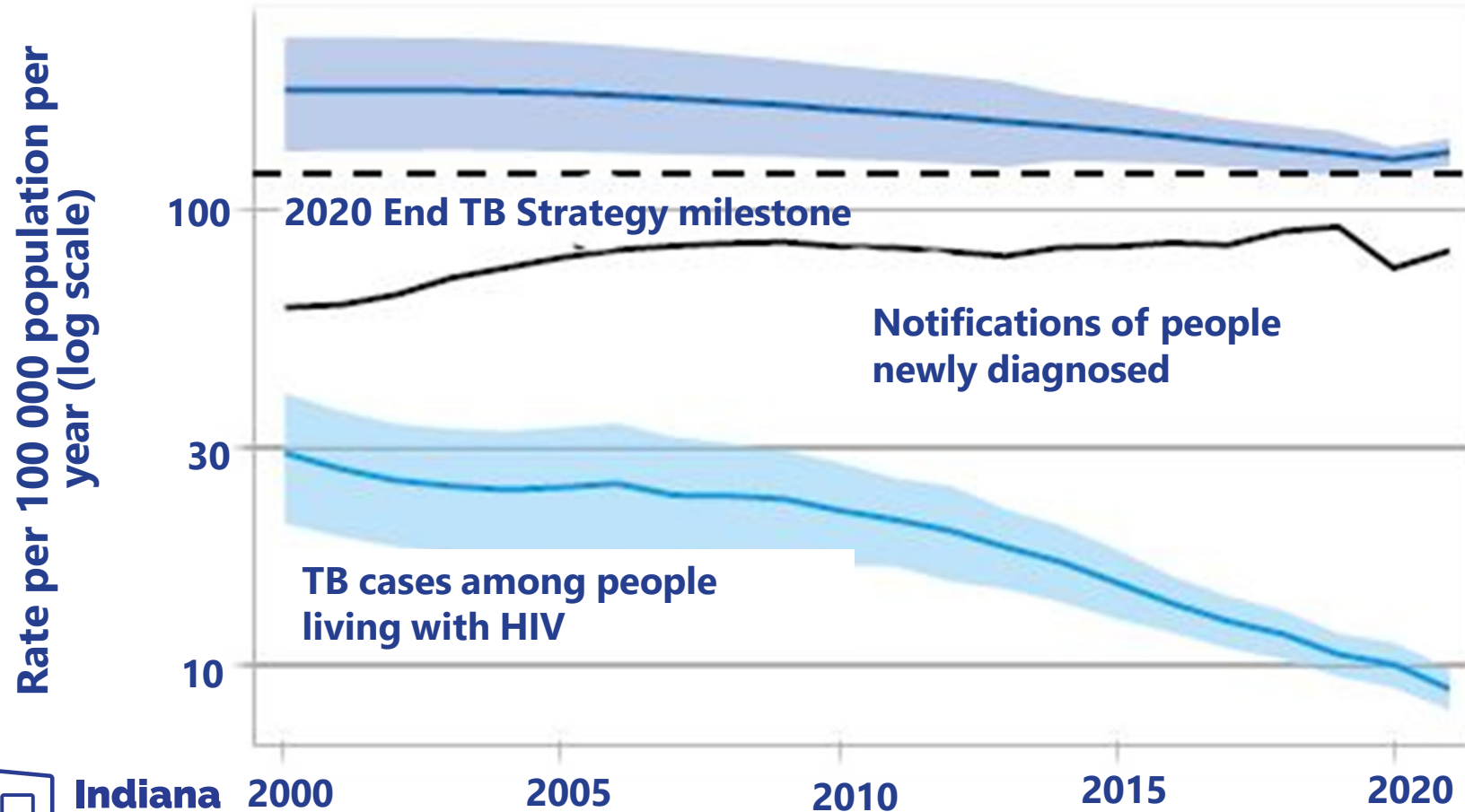
# Global Number of TB Deaths Increased in 2021

TB second only to COVID-19 as cause of death from single infectious agent



# Global Number of TB Incidence Increased in 2021

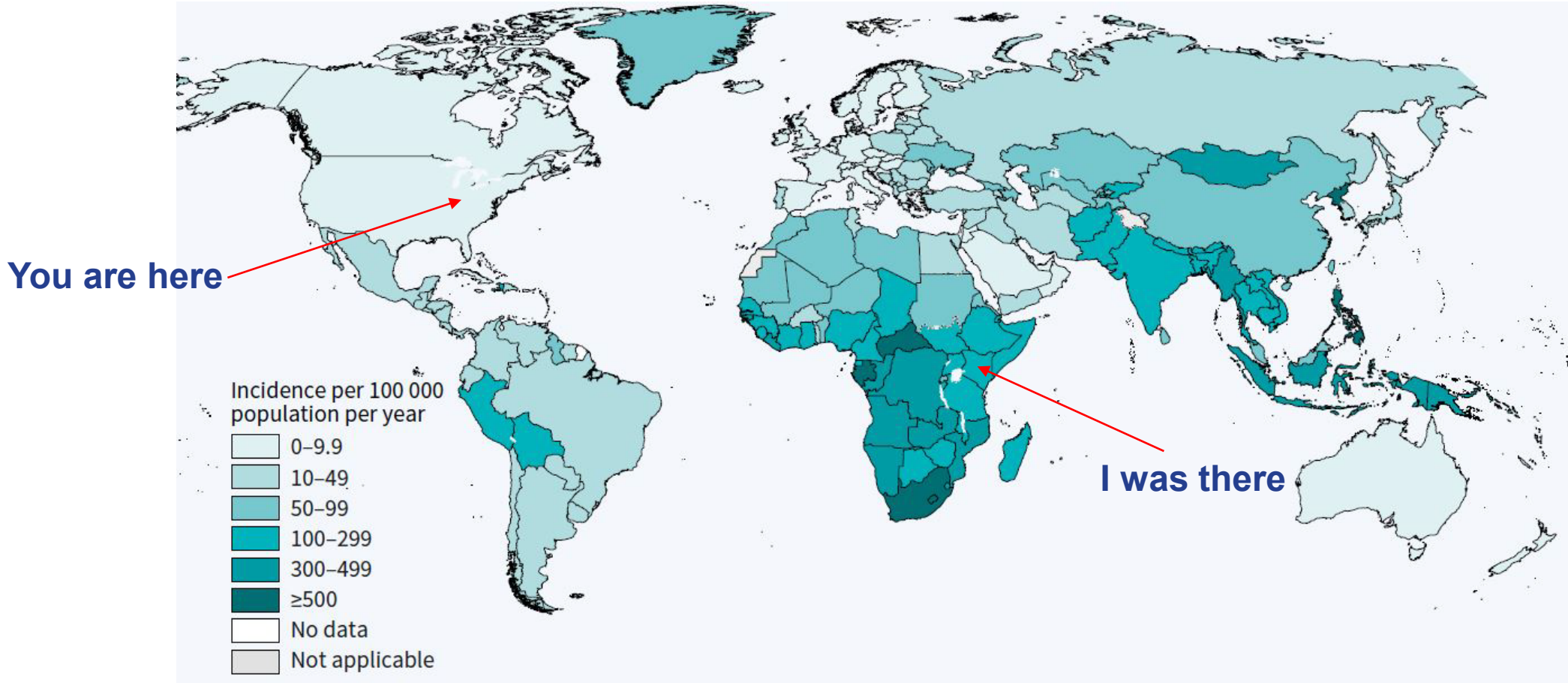
4.5% increase from 2020



10% reduction since 2015, halfway to 2020 milestone of 20%

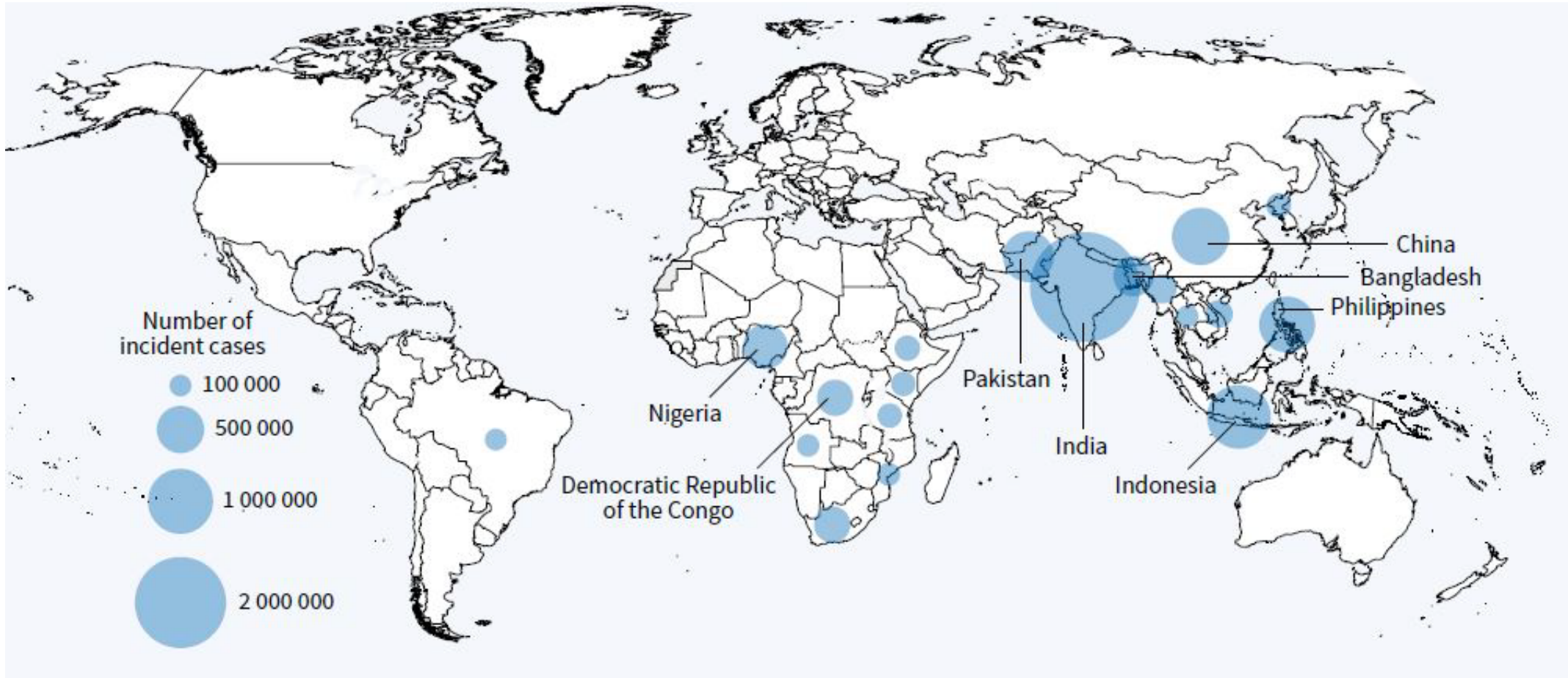


# Annual Tuberculosis Incidence (per 100,000 population), Worldwide, 2021



# 8 Countries, Two-thirds of Global Cases in 2021

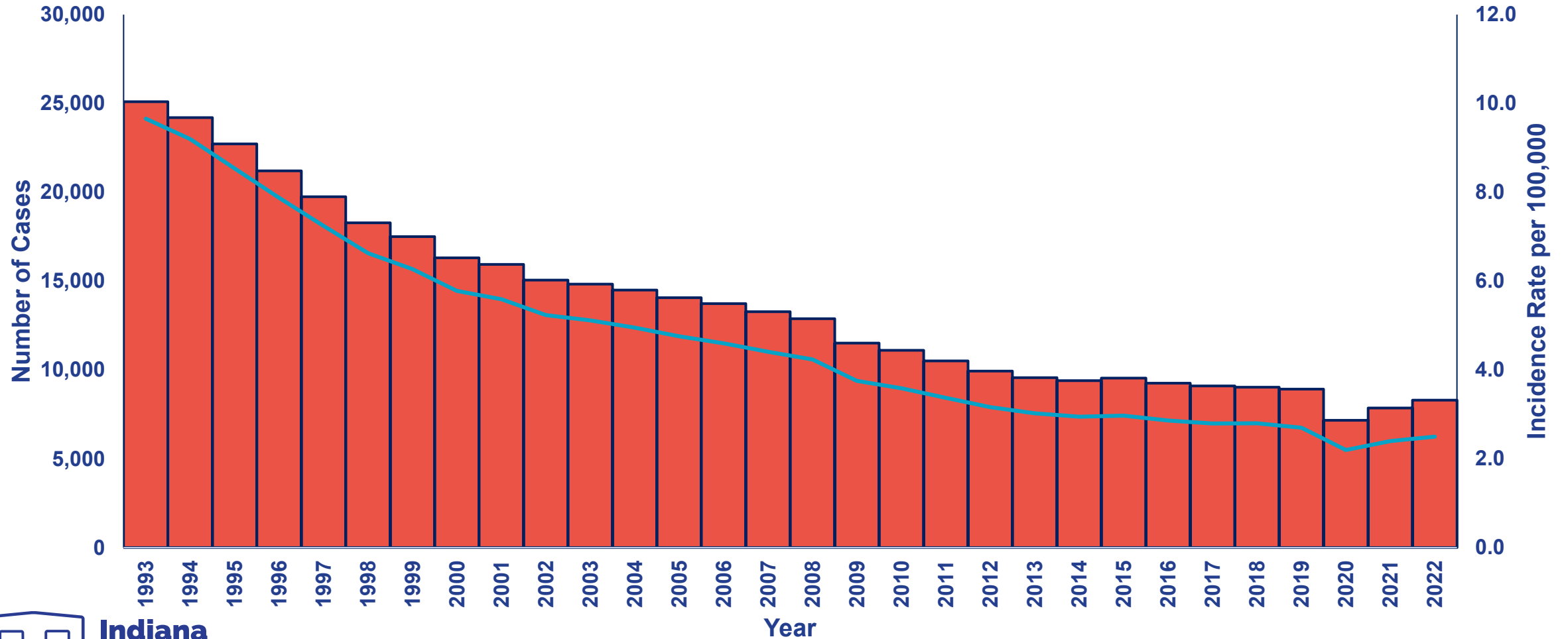
87% in 30 high TB burden countries



# National TB Data



# Reported Tuberculosis (TB) Cases and Rates United States, 1993-2022



Source: CDC Provisional TB Data in the United States, 2022

# CDC: United States Summary

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- Reported TB cases and incidence rates increased from 2021 to 2022, but remain lower compared with years preceding the COVID-19 pandemic
- United States
  - 2022 TB Case Count: 8,300\* Incidence Rate: 2.5\*
  - 2021 TB Case Count: 7,874 Incidence Rate: 2.4

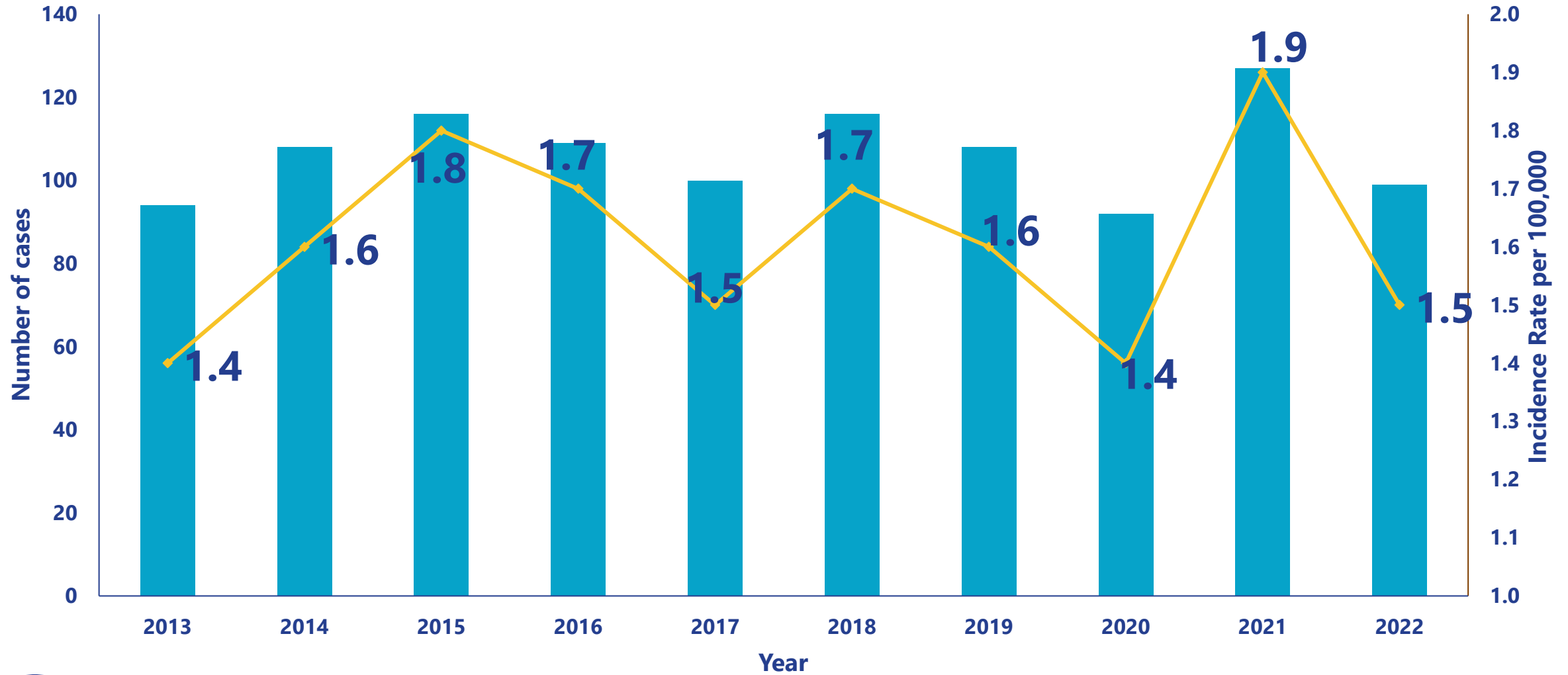
\*provisional data. Incidence rate is cases per 100,000 persons.

- U.S.-born incidence rate appears to be returning to pre-pandemic trajectory

# Indiana TB Updates



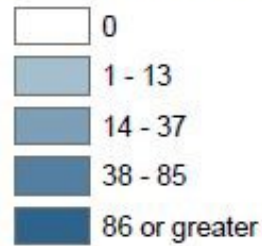
# Indiana TB 10-Year Trend, 2013-2022



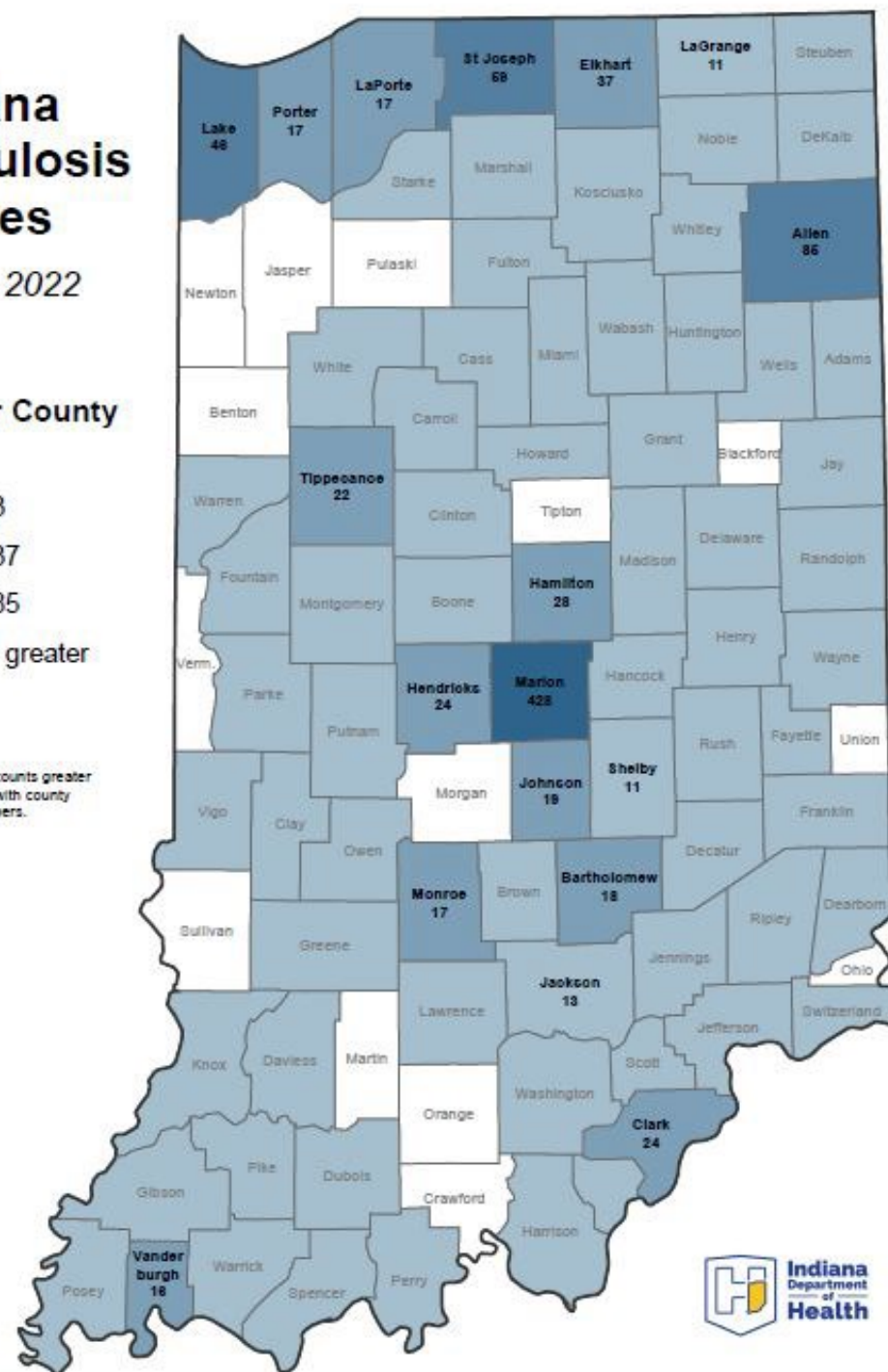
# Indiana Tuberculosis Cases

2013 — 2022

## Cases per County



\*Counties with case counts greater than ten are labeled with county name and case numbers.



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# Indiana Tuberculosis Cases

2022

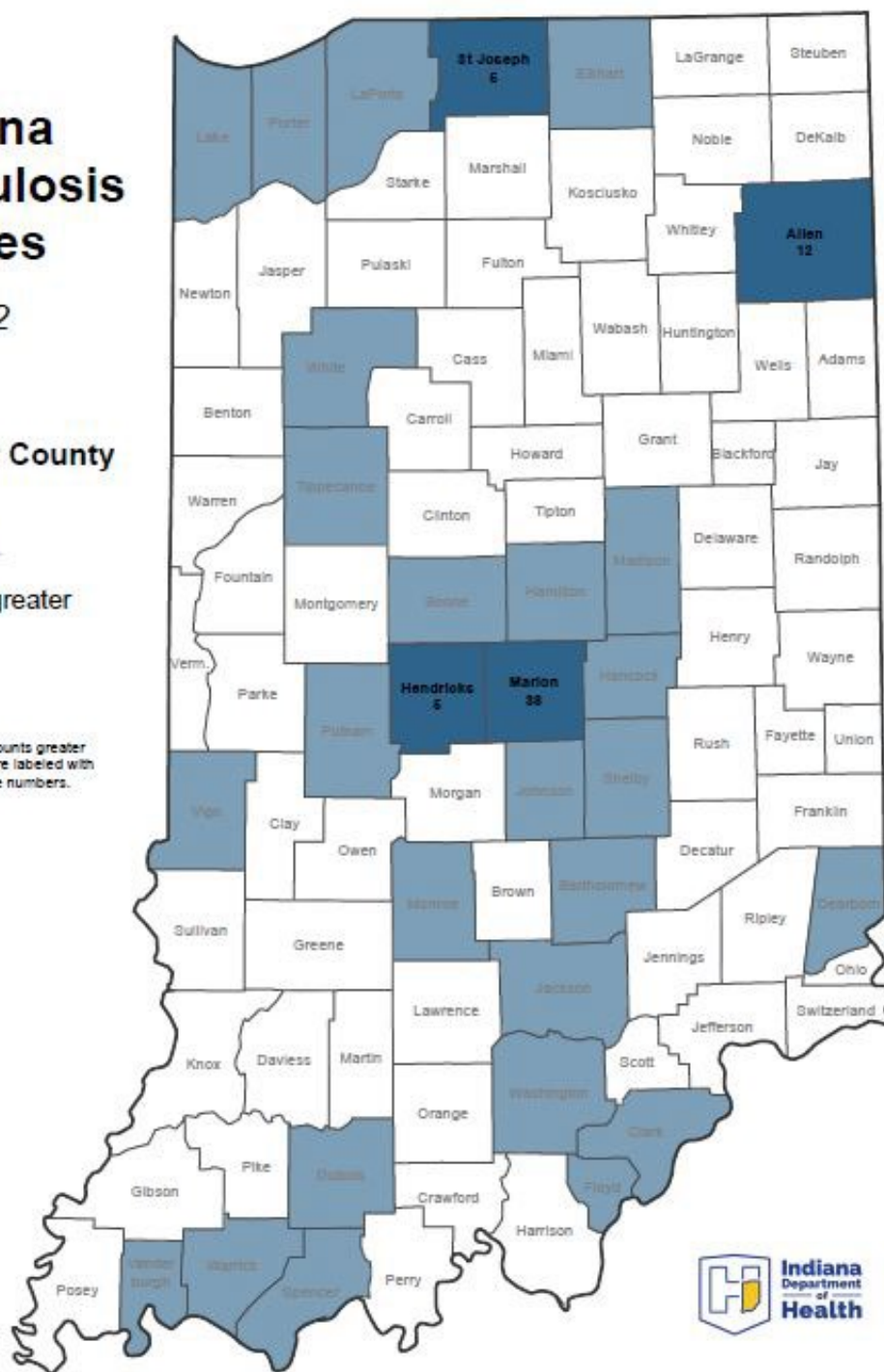
## Cases per County

0

1 to 4

5 or greater

\*Counties with case counts greater than or equal to five are labeled with county name and case numbers.



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# Overview of TB in Indiana, 2022

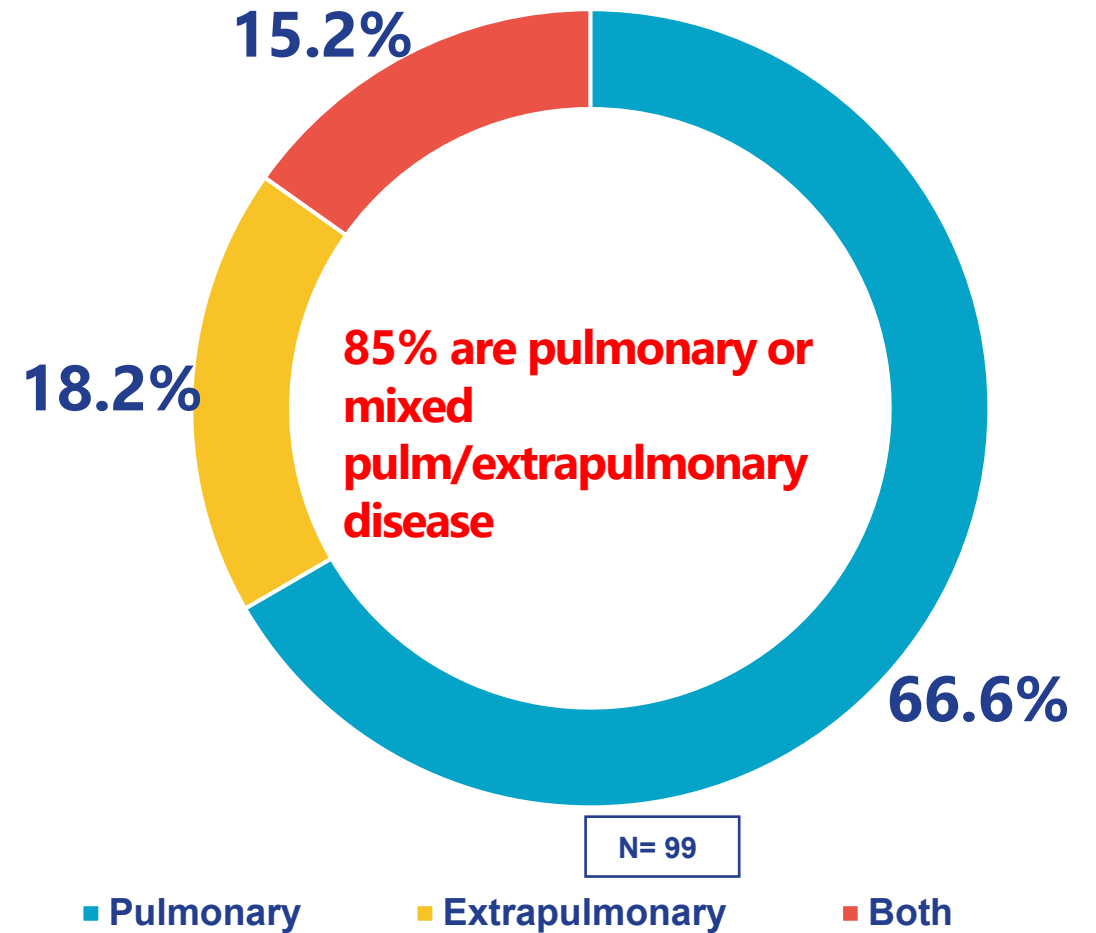
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- Total TB Cases: 99
  - Top Jurisdictions:
    1. Marion (38)
    2. Allen (12)
    3. Hendrick and St. Joseph (5)
  - Incidence Rate: 1.5 cases of TB per 100,000 population  
*(compare to 2.5 for U.S.)*
- Total Reported LTBI Cases: 1458  
*(preliminary report)*
  - Top Jurisdictions:
    1. Marion (417)
    2. Tippecanoe (139)
    3. Hendricks (117)
    4. Hamilton (104)
    5. St. Joseph (96)

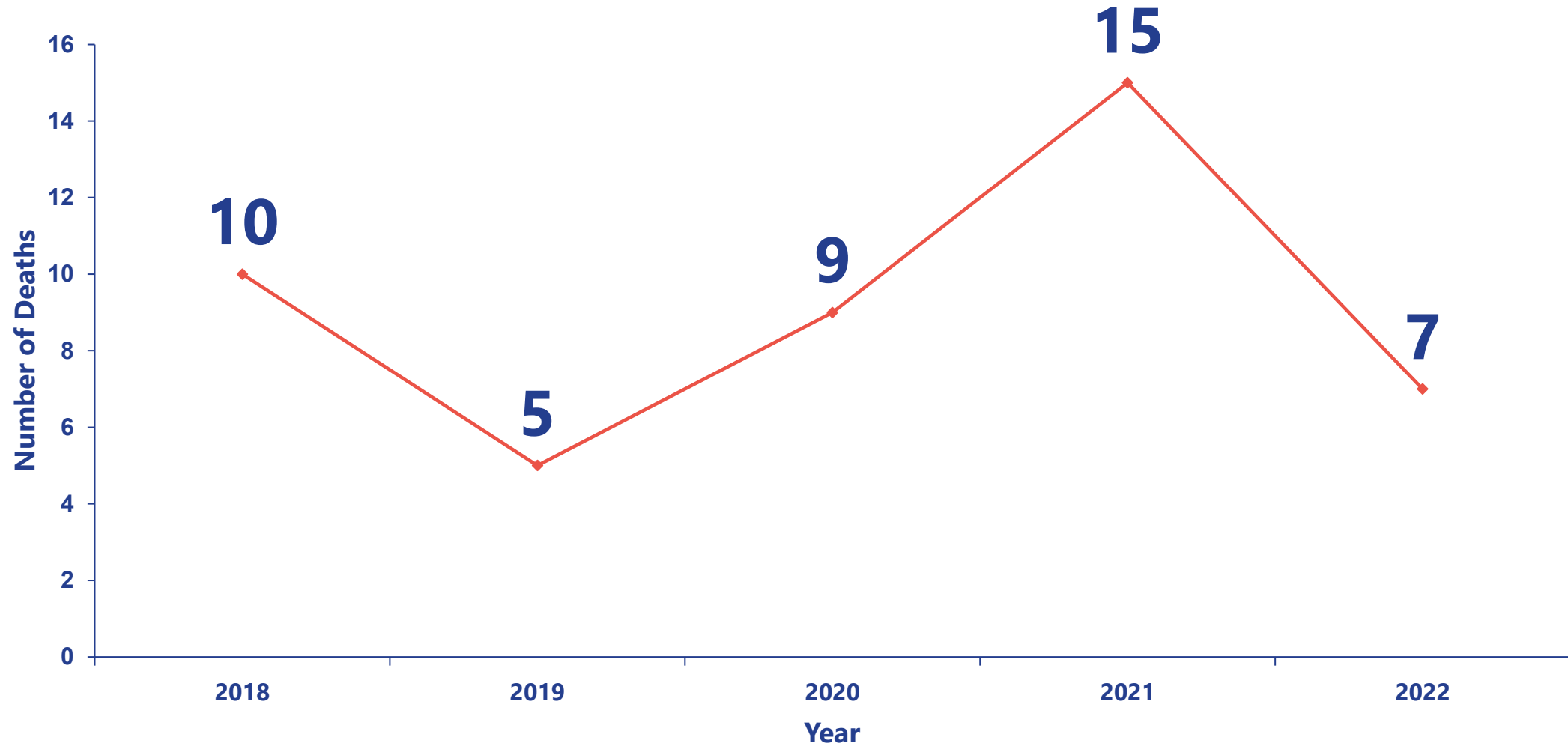
# TB Cases by Site of Disease, Indiana, 2022

Extrapulmonary sites include:

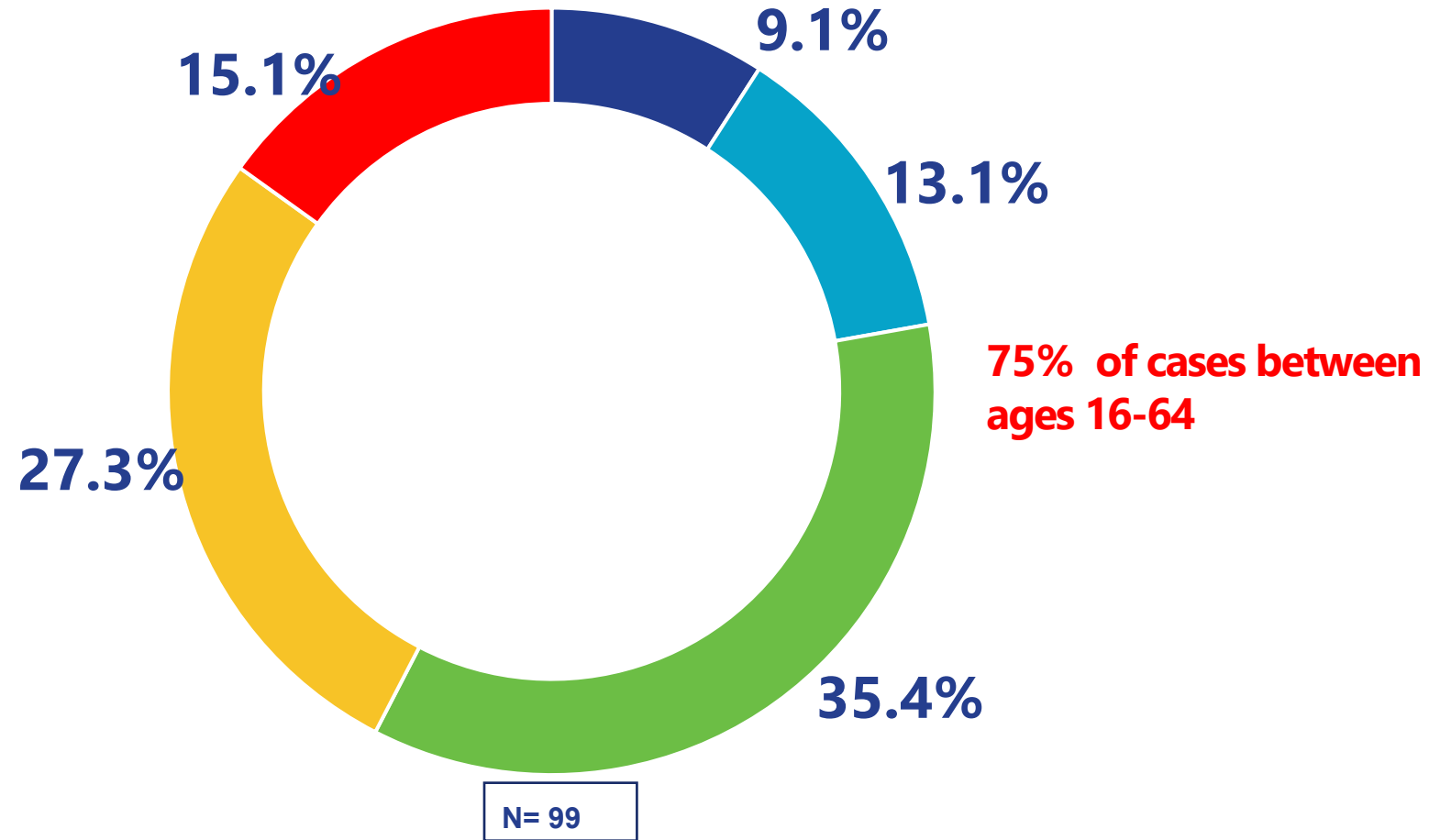
- Lymphatic (35.0%), *adenitis*
- Pleural (22.5%)
- Meningeal (10.0%)
- Peritoneal (7.5%)
- Eye and Ear Appendages (5.0%)



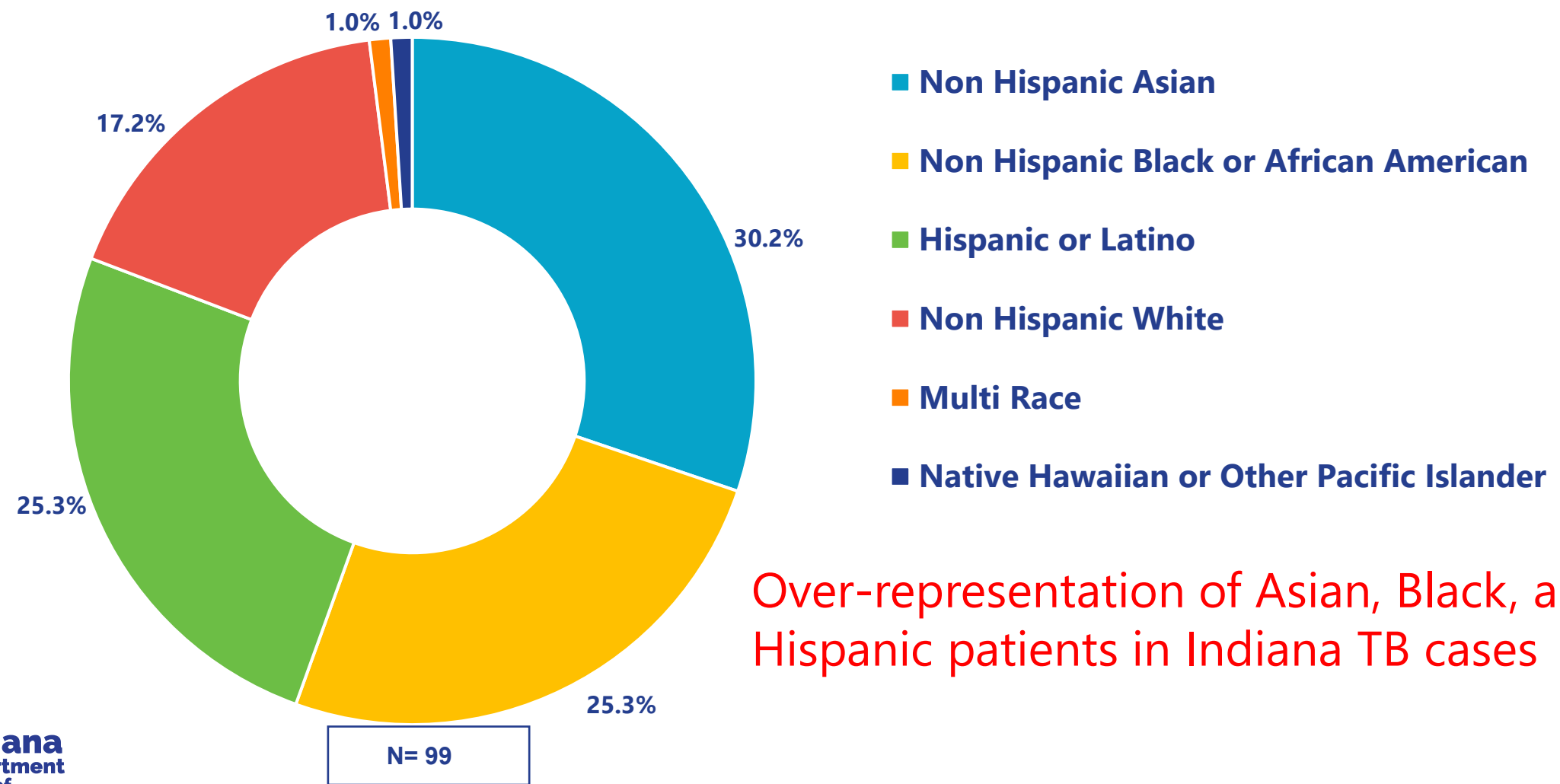
# Number of Tuberculosis Deaths, Indiana, 2018-2022



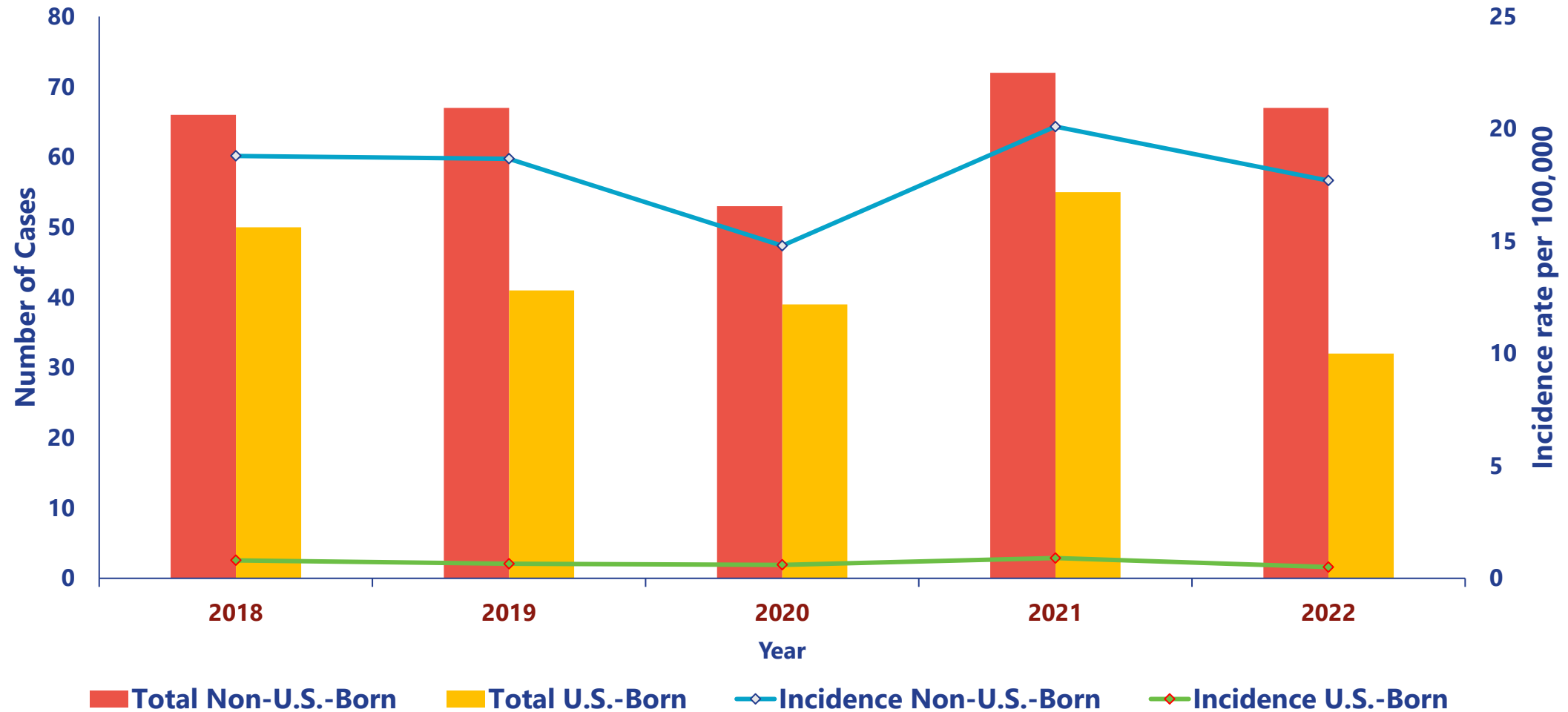
# TB Cases by Age Group, Indiana, 2022



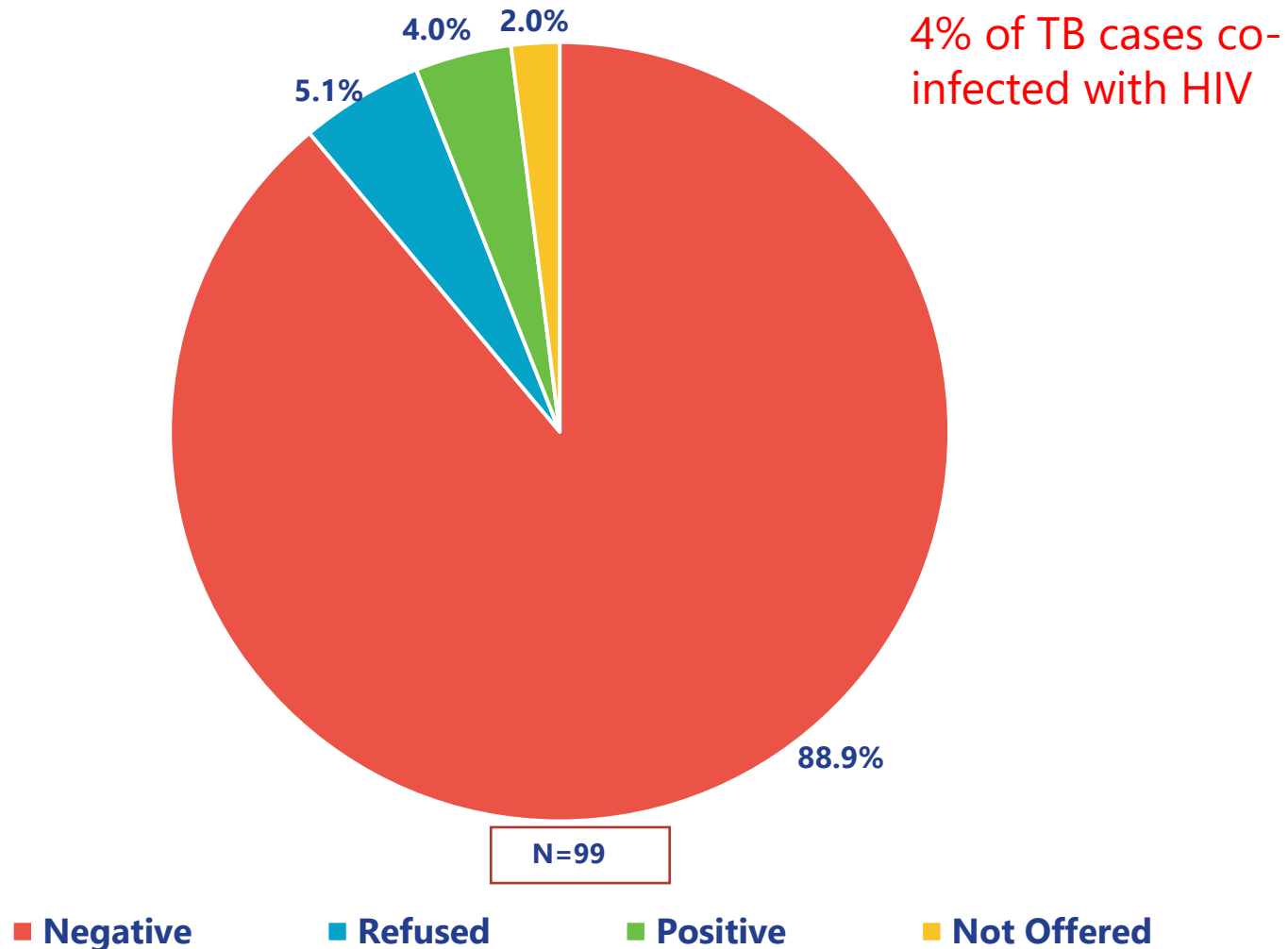
# TB Cases by Hispanic Ethnicity and Non-Hispanic Race, Indiana, 2022



# TB Case Counts and Rates by Country of Birth, Indiana, 2018-2022



# Tuberculosis by HIV Status, Indiana, 2022

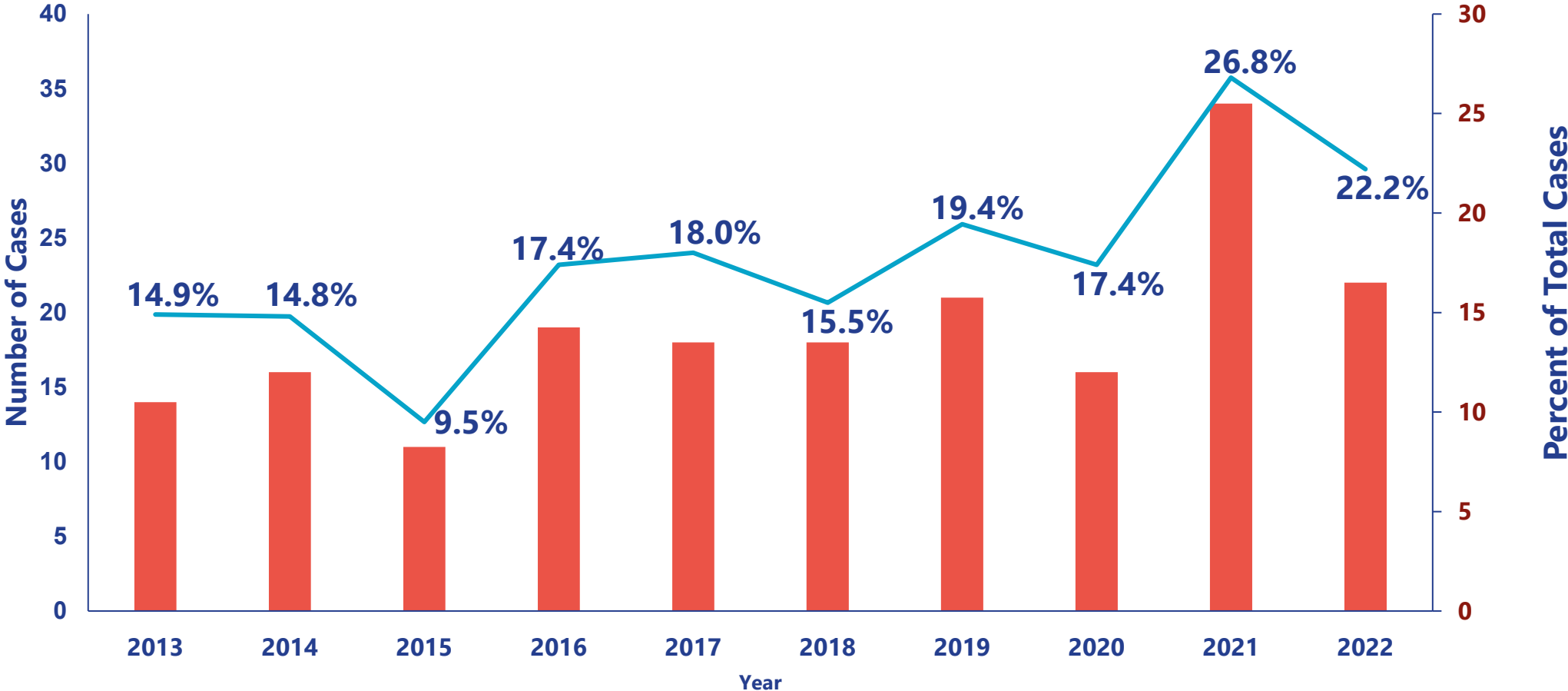




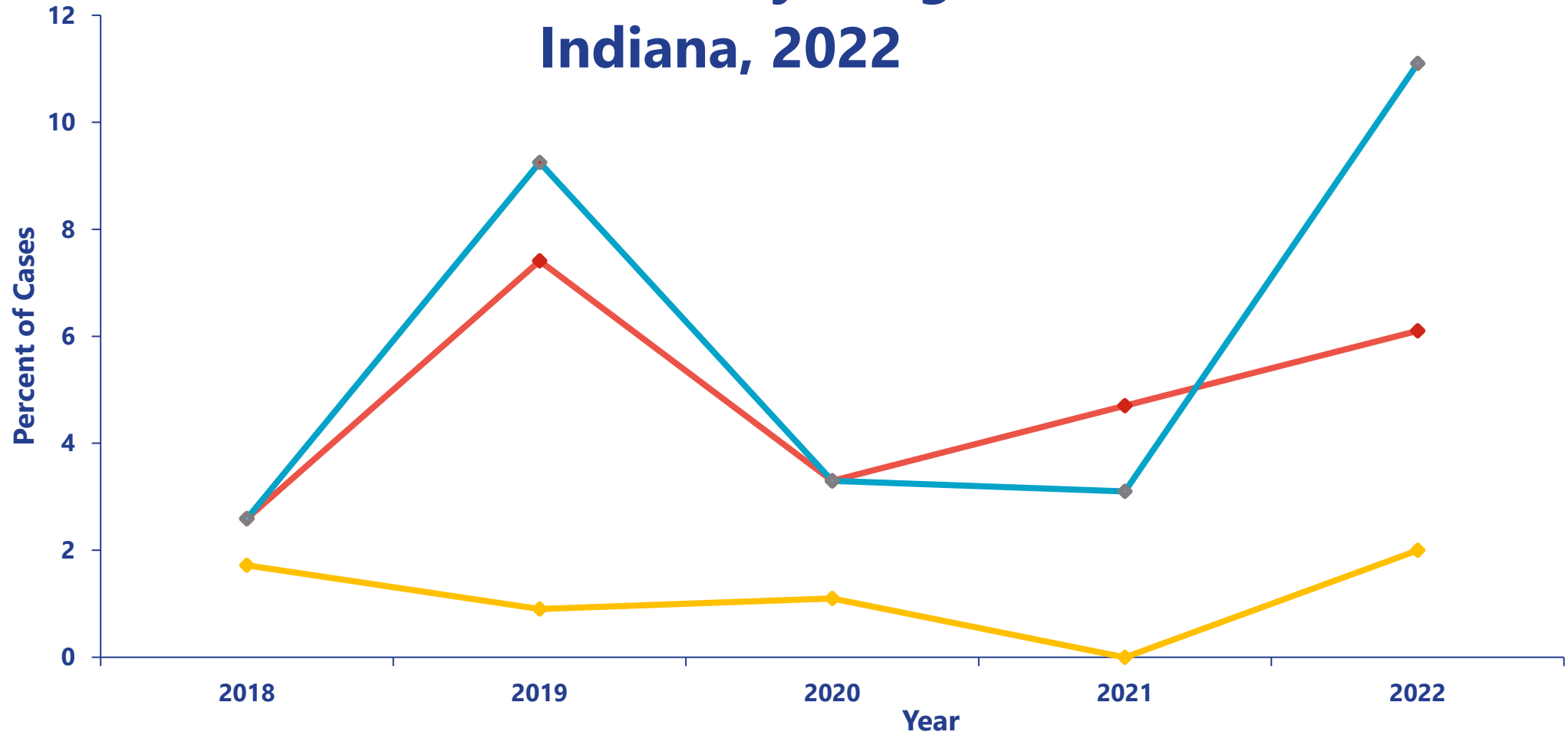
# Most Commonly Reported Risk Factors among TB Cases, Indiana, 2022

Risk Factor	Percent of Cases
Diabetes Mellitus	22.2%
Contact of Infectious TB Patient	9.1%
Immunosuppression (not HIV/AIDS)	6.1%
End-Stage Renal Disease	5.1%
History of Homelessness	5.1%
Excess Alcohol Use (past year)	4.0%
Non-injection Drug Use (past year)	4.0%
Incomplete LTBI Therapy	2.0%
Missed Contact	2.0%

# TB Cases with Diabetes, Indiana, 2013-2022



# Number of TB Cases by Drug Resistance, Indiana, 2022



◆ INH Resistance    ◆ Multidrug Resistance    ◆ Other Drug Resistance





# My Kenya Experience





# Moi Teaching & Referral Hospital, Cancer and Chronic Diseases Ctr



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**TB Director- Dr. Deniero**



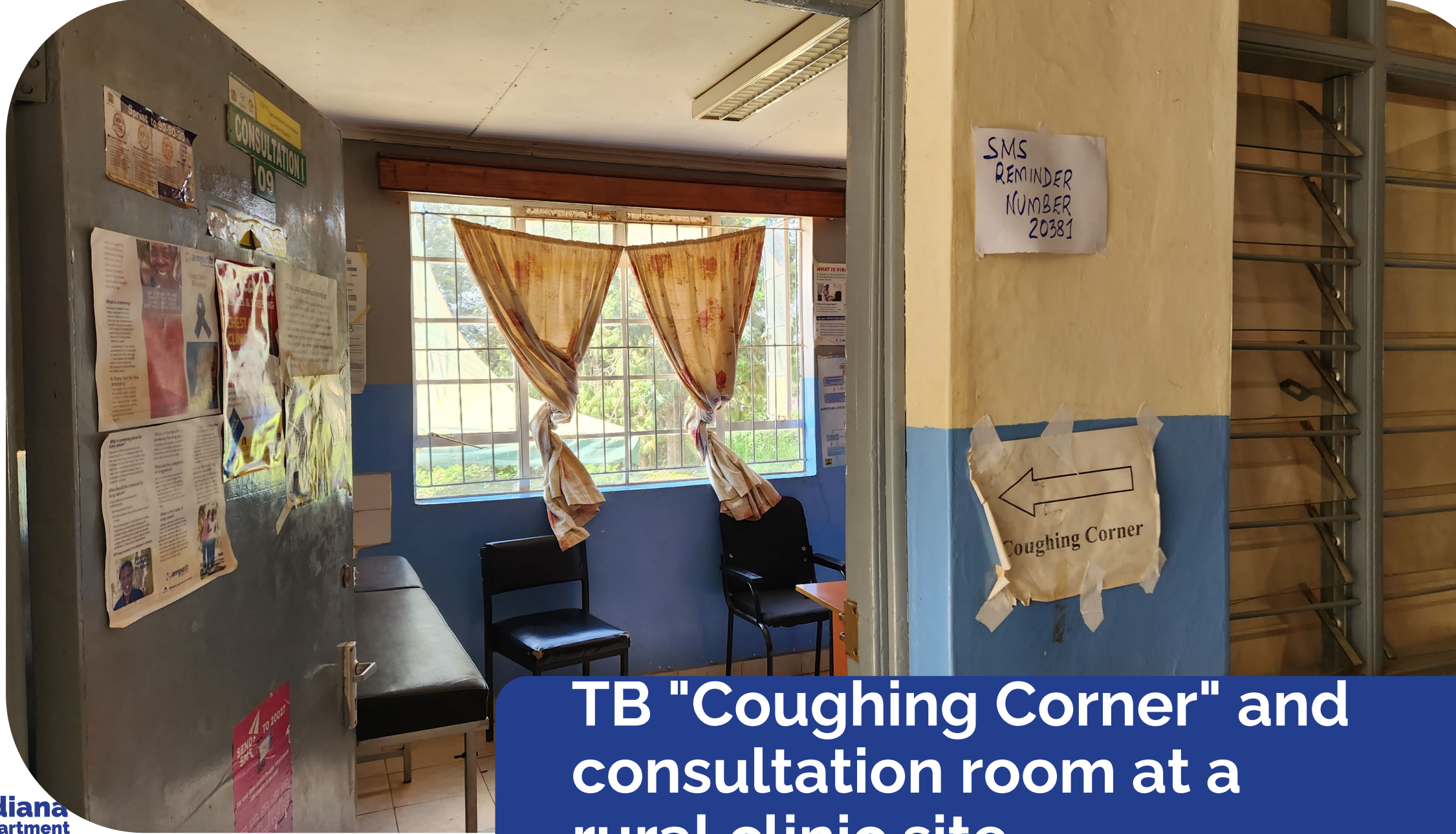
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# Overview of TB care in Kenya, 2023

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## Active TB Cases

- Smear for AFB staining
  - Genexpert analysis for DNA detection and detection of rifampin resistance
  - **NO** cultures done on routine cases
  - RIPE started, nearly all SAT
  - Respiratory isolation is rarely available
- Incidence Rate: **251** cases of TB per 100,000 population (*2.5 for U.S.*)
  - HIV positive TB incidence 60
  - Overall incidence for HIV over 5%
  - MDR TB incidence 2.6
  - 90,000 cases last year in Kenya
  - LTBI screening and treatment minimal (other than kids <5 and PLWH) due to high incidence rates
  - Contact tracing is minimal



**TB "Coughing Corner" and consultation room at a rural clinic site**



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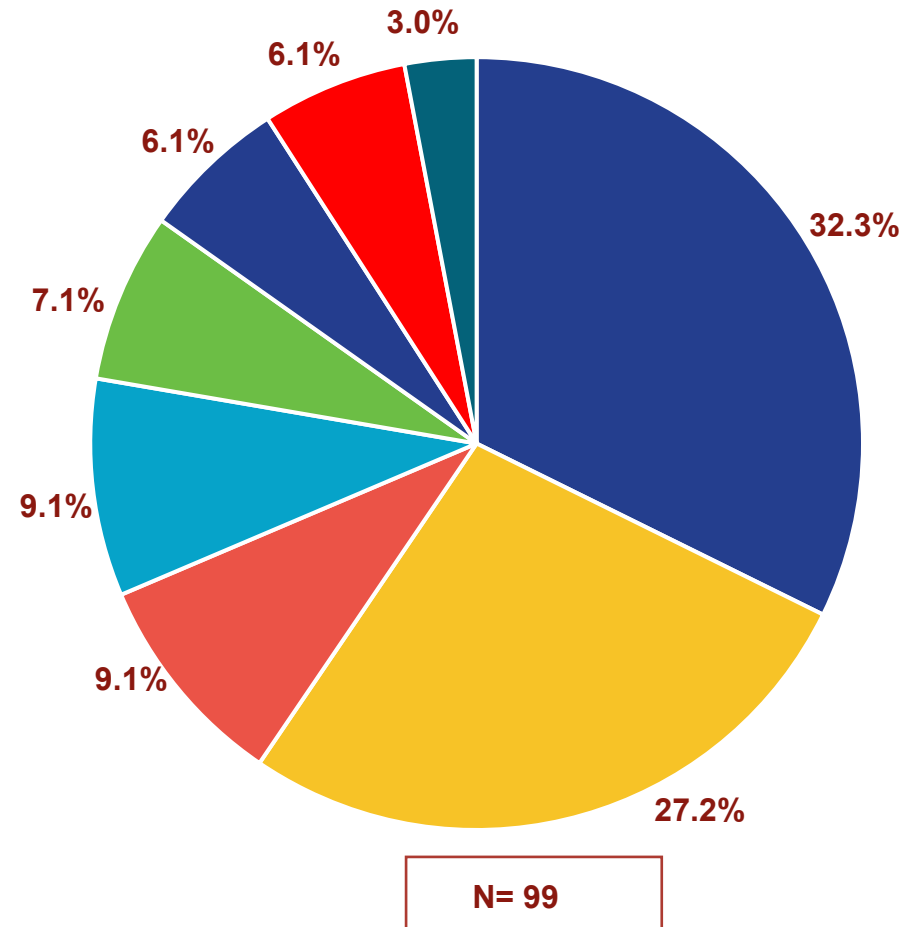


**Thank you!**

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# TB Cases by Country of Birth, Indiana, 2022



# TB Incidence Rate by Age Group, Indiana, 2018-2022

