### **ABSTRACT**

### AIM

• Pediatric tuberculosis (TB) infection rates have declined during the last decade in the United States. Among infants, 0-2 years of age, TB may be difficult to detect. Our study examined the epidemiology of active TB infection to determine case rates, specifically in this population.

### METHODS

• Demographic data for pediatric patients was analyzed from the United States National TB Surveillance System (NTSS). The available data for i) <3-year-old and ii) <5-year-old age groups were collected for the years 2000-2018. The case rates per 100,000 children and trends over time were analyzed using descriptive statistical methods. Further analysis of the pediatric cohort included identification of ethnic and gender differences in U.S.-born children.

### RESULTS

- Based on our analysis, there is, interestingly, a lack of sufficient data specifically for children <3 years of age.
- In 2018, there were 186 cases reported for children <5 years of age. The case rate was 0.9 cases/100,000 in the <5 years age group. This cohort represented approximately 2.1% of all TB cases in the U.S. in 2018.
- The trend plot for 2000-2018 showed consistently decreasing case rates. The case rate was higher among males (n=105) and among U.S.-born children, and ethnic minorities accounted for most of the cases.

### CONCLUSIONS

- There is a need to further characterize pediatric TB among the infant population. The frequency of other LTRI e.g., RSV is well described in contrast. This highlights the difficulty of diagnosis among this age group, during a time of lung and immunologic development and susceptibility to respiratory infections.
- The case rate of TB for the <5 years age group shows a decline overall from 2000-2018. Among U.S.-born children, TB is more common among ethnic minorities.

### INTRODUCTION

- Tuberculosis infection among children in the U.S. continues to be an important health concern.
- The identification of TBI early in its course in young children may lead to improved outcomes.
- Younger children with TB are at higher risk for progression.
- Pediatric tuberculosis infection rates have declined during the last decade in the United States. Among infants, 0-2 years of age, TB may be clinically difficult to detect in this population.
- Our study examined the epidemiology of active TB infection to determine case rates, specifically in this population.

## **Pediatric Tuberculosis Infection among Infants** and Young Children in the U.S.

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### RESULTS

### **DEMOGRAPHIC ANALYSIS**

- The majority of pediatric cases among the <5 years age group were identified among U.S.-born children in comparison to non-U.S. born children.
- Among this group, the majority of the 169 cases in 2018 were among Hispanic/Latino and Asian children (n=68 and n=26 respectively).
- The trend plot for 2000-2018 showed consistently decreasing case rates.



### **POVERTY AND TBI**

- There was no correlation between the poverty rates in the 25 most populous metropolitan areas and TBI case rates in children <5 years among the population analyzed in 2018.
- r(23) = -.34, p = .09





- ACS 1-Year Report.
- Data from the youngest age group (<5 years) was collected for the years 2000 to 2018.
- A search for cases among infants less <3 years of age was conducted.
- An analysis of case rates and poverty levels in 25 urban U.S. areas was completed.
- Descriptive statistical methods were used to analyze trends over time, incidence in ethnic and gender distribution, and poverty and incidence correlation.
- A p-value of <0.05 was considered significant.

# children <3 years of age.

- contrast.
- This highlights the difficulty of diagnosis among this age group, during a time of lung and immunologic development and susceptibility to respiratory infections.
- The case rate of TB for children <5 years of age shows a decline overall from 2000-2018. Among U.S.-born children, TB is more common among ethnic minorities.

Table 4. Centers for Disease Control and Prevention. https://www.cdc.gov/tb/statistics/reports/2018/table4.htm. Published September 6, 2019. Table 20. Centers for Disease Control and Prevention. https://www.cdc.gov/tb/statistics/reports/2018/table20.htm. Published September 6, 2019. Table 21. Centers for Disease Control and Prevention. https://www.cdc.gov/tb/statistics/reports/2018/table21.htm. Published September 6, 2019. Table 54. Centers for Disease Control and Prevention. https://www.cdc.gov/tb/statistics/reports/2018/table54.htm. Published September 6, 2019. Data.census.gov. https://data.census.gov/cedsci/advanced?g=310M400US31080,31140&t=Age and Sex&tid=ACSST1Y2018.S0101&y=2018&d=ACS 1-Year Estimates Subject Tables. Bureau USC. Poverty: 2018. The United States Census Bureau. https://www.census.gov/content/dam/Census/library/publications/2020/acs/acsbr20-04.pdf. Published September 17, 2020.

### **METHODS**

• Demographic data for pediatric TBI was collected from the NTSS; TBI case and poverty rates were developed from an

### CONCLUSIONS

• There is a need to further characterize pediatric TB among the infant population. There was a lack of available data for

• The frequency of other LTRI e.g., RSV is well described, in

• Poverty, based on our analysis of urban areas in the U.S., did not show a correlation with TBI case rates in this population.

### REFERENCES