**SUPPLEMENTARY MATERIAL**

**Demographic Information of the State of Tennessee, 2000 – 2011**

The average annual population of Tennessee for the study period (2000 – 2011) was 6,048,239 persons. The median age was 37 years. 48.7% of the population was Male, 80.3% were White, 16.7% were African Americans, 1.3% were Asian; 3.6% were Hispanic [1].

**Tennessee Department of Health and Reporting of Diseases Included for this Study**

The Tennessee Department of Health (TDH) is the public health authority in the state of Tennessee and administers the state disease surveillance systems. TDH has its state health department central office in the capital city of Nashville. The state public health system includes 89 rural counties that are combined into regional health offices.

For this study, cases of tuberculosis were identified through the TDH Tuberculosis Control Program. Prior studies including data from the TDH found that completeness of tuberculosis case reporting is close to 100% [2, 3].

Cases of Salmonella spp., Shigella spp., Yersinia spp, and L. monocytogenes were identified through the Foodborne Diseases Active Surveillance Network (FoodNet). FoodNet is an active, multistate population-based surveillance system for laboratory-confirmed foodborne infections. In addition to receiving reports from public and private clinic and hospital laboratories, health department personnel regularly visit all hospitals and commercial labs located in the state to make sure that no cases are missed. This allows capturing close to 100% of laboratory identified cases in TN, except for specimens that go to facilities out of the state. It is difficult to estimate the number of cases missed due to lack of laboratory confirmation. The accuracy of FoodNet reporting has been compared to other national surveillance systems such as the Centers of Diseases Control (CDC) Laboratory-based Enteric Disease Surveillance System (LEDS) showing that FoodNet is as complete as any other system in the country [4, 5].

Cases of Chlamydia trachomatis were identified through the TDH HIV/STD prevention program. Reporting is close to 100% for laboratory identified cases. A prior study in Massachusetts estimated that health department surveillance systems including laboratory and health care provider reporting accounted for 75% of the estimated total number of C. trachomatis cases occurring in the state [6].

**References**

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| --- | --- | --- | --- | --- | --- |
| **Observation** | **Age group****(years)** | **Sex** | **Race** | **Ethnicity** | **PY** |
| 1 | 0 – 9 | F | NAA | NH | 12 |
| 2 | 0 – 9 | F | NAA | NH | 12 |
| … | … | … | … | … | … |
| 283,693 | 0 – 9 | F | NAA | NH | 12 |
| 283,694 | 10 – 19 | F | NAA | NH | 12 |
| … | … | … | … | … | … |
| 6,047,238 | ≥80 | M | AA | H | 12 |
| 6,048,239 | ≥80 | M | AA | H | 12 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Category** | **Age group****(years)** | **Sex** | **Race** | **Ethnicity** | **No. persons** |
| 1 | 0 – 9 | F | NAA | NH | 283,693 |
| 2 | 10 – 19 | F | NAA | NH | 301,323 |
| 3 | 20 – 29 | F | NAA | NH | 309,747 |
| … | … | … | … | … | … |
| 72 | ≥80 | M | AA | H | 30 |
| Total |  |  |  |  | 6,048,239 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Observation** | **Age group****(years)** | **Sex** | **Race** | **Ethnicity** | **PY** | **Chlam** |
| 1 | 0 – 9 | F | NAA | NH | 12 | 0 |
| 2 | 0 – 9 | F | NAA | NH | 12 | 0 |
| … | … | … | … | … | … | … |
| 283,693 | 0 – 9 | F | NAA | NH | 12 | 0 |
| 283,694 | 10 – 19 | F | NAA | NH | 12 | 1 |
| … | … | … | … | … | … | … |
| 6,047,238 | ≥80 | M | AA | H | 12 | 0 |
| 6,048,239 | ≥80 | M | AA | H | 12 | 0 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Observation** | **Age group****(years)** | **Sex** | **Race** | **Ethnicity** | **Chlam** | **PY** | **TB** |
| 1 | 0 – 9 | F | NAA | NH | 0 | 12 | 0 |
| 2 | 0 – 9 | F | NAA | NH | 0 | 12 | 0 |
| … | … | … | … | … | … | … | … |
| 283,693 | 0 – 9 | F | NAA | NH | 0 | 12 | 0 |
| 283,694 | 10 – 19 | F | NAA | NH | 1 | 12 | 0 |
| … | … | … | … | … | … | … | … |
| 6,047,238 | ≥80 | M | AA | H | 0 | 12 | 0 |
| 6,048,239 | ≥80 | M | AA | H | 0 | 12 | 0 |
| 6,048,240 | 0 – 9 | F | NAA | NH | 0 | 12 | 1 |
| 6,048,241 | 0 – 9 | F | NAA | NH | 0 | 10 | 1 |
| … | … | … | … | … | … | … | … |
| 6,048,255 | 10 – 19 | F | NAA | NH | 1 | 12 | 1 |
| … | … | … | … | … | … | … | … |
| 6,051,453 | ≥80 | M | AA | H | 0 | 5 | 1 |

**d)**

**c)**

**b)**

**a)**

**Supplementary Figure 1**

**Supplementary Figure 1.** Database design for multivariable analyses: a) Database containing the annual average number of persons in Tennessee for each of the 72 categories corresponding to all possible combinations of age groups (0 – 9, 10 – 19, …, 70 – 79, ≥80), sex, race (AA, African American; NAA, non-African American), and ethnicity (H, Hispanic; NH, non-Hispanic); b) The average number of persons was transformed into observations in the database (n=6,048,239 observations); c) Each ICBI (i.e., Chlam = *Chlamydia trachomatis*) was inserted in the database. In order to avoid duplicate observations, each case of ICBI was inserted into its respective category replacing an observation. “Chlam” is a count variable (i.e., if a person had 3 episodes of *Chlamydia trachomatis* during the study period then the “Chlam” value was 3); d) Tuberculosis cases were added to the database (3,214 observations). Thus, the number of observations in the final database was 6,051,453. The number of person-years of follow-up (PY) was adjusted by date of birth, date of death and date of arrival to the U.S. if any of these criteria were applicable for each tuberculosis case.