

Arctic Investigations Program (AIP)

Alaska Invasive Bacterial Disease Surveillance Report

Streptococcus pneumoniae – 2014

Background

AIP has conducted statewide surveillance of invasive *Streptococcus pneumoniae* since 1986. Beginning in January 2007, invasive *S. pneumoniae* became a reportable condition to the State of Alaska Division of Public Health (DPH). Reports of cases of disease caused by this organism are shared between AIP and DPH.

Population

The population of the State of Alaska in 2014 was 737,354; 143,367 (19%) were Alaska Native people. Source: AK Dept. of Labor & Workforce Development population estimates.

Case Definition

An isolate of *Streptococcus pneumoniae* from a normally sterile site that has been taken from a resident of Alaska.

Methods

Participating laboratories send isolates recovered from sterile sites to the AIP laboratory in Anchorage; materials and forms for isolate shipment and data collection are provided to each laboratory by AIP. Demographic and clinical information on the cases are collected from a review of medical records. Annually, AIP asks that each laboratory review their records and provide information on any cases that may have been overlooked.

Invasive *Streptococcus pneumoniae* Cases by Race – Alaska, 2014

| Race | Cases n (%) | Age Adjusted Rate* | % Male | Deaths n (%) |
|---------------|----------------|-----------------------|-----------|-----------------|
| Alaska Native | 36 (42) | 27.8 | 67% | 5 (14) |
| Non-Native† | 49 (58)† | 7.4 | 61% | 6 (12) |
| Total | 85 | | 64% | 11 (13) |

*Cases per 100,000 per percent distribution of Alaska 2010 population

†Includes 3 cases for which race was unknown

Invasive *Streptococcus pneumoniae*, Cases & Rates by Age Group & Race – Alaska, 2014

| Age (years) | Alaska Native | | Non-Native | |
|----------------|---------------|-------|--------------|-------|
| | No. Cases | Rate* | No. Cases | Rate* |
| <2 | 4 | 70.1 | 4 | 25.9 |
| 2-4 | 2 | 21.5 | 1 | 4.4 |
| 5-18 | 0 | 0 | 0 | 0 |
| 19-54 | 10 | 15 | 14 | 4.6 |
| 55-64 | 10 | 74.6 | 14 | 16.6 |
| 65+ | 10 | 100.6 | 16 | 26.1 |
| Total | 36 | 25.1 | 49 | 8.3 |

*Cases per 100,000 population

Invasive *Streptococcus pneumoniae*, Clinical Presentations – Alaska, 2014

| | No. | %* |
|---------------------------|-----|----|
| Pneumonia with bacteremia | 56 | 66 |
| Bacteremia | 20 | 24 |
| Empyema | 2 | 2 |
| Meningitis | 1 | 1 |

*Percent of cases

Antibiotic Resistance in Invasive *Streptococcus pneumoniae* Isolates – Alaska, 2014

| Antibiotic | S*% | I†% | R‡% |
|-----------------|-----|-----|-----|
| Penicillin | 88 | 4 | 8 |
| TMP-sulfa | 88 | 9 | 3 |
| Erythromycin | 76 | 0 | 24 |
| Ceftriaxone | 93 | 4 | 3 |
| Tetracycline | 92 | 0 | 8 |
| Chloramphenicol | 96 | 0 | 4 |
| Vancomycin | 100 | 0 | 0 |
| Levofloxacin | 100 | 0 | 0 |
| Clindamycin | 92 | 0 | 8 |

*Susceptible, †Intermediate, ‡Resistant based on year 2014 CLSI definition

Proportion of Invasive Isolates Contained in the PCV13 Vaccine by Age Group – Alaska, 2014

| Age (yrs) | Total (%) |
|-----------|----------------|
| <2 | 0 (0%) of 8 |
| 2-4 | 2 (67%) of 3 |
| 5+ | 10 (16%) of 74 |
| Total | 12 (14%) of 85 |