



Active Bacterial Core Surveillance (ABCs) Report

Emerging Infections Program Network

Streptococcus pneumoniae, 2018



ABCs Areas

California (3 county San Francisco Bay area); Colorado (5 county Denver area); Connecticut; Georgia (20 county Atlanta area); Maryland (6 county Baltimore area); Minnesota; New Mexico; New York (15 county Rochester and Albany areas and children <5 years in Erie county); Oregon (3 county Portland area); Tennessee (20 counties).

ABCs Population

The surveillance areas represent 34,460,237 persons.
Source: National Center for Health Statistics bridged-race vintage 2018 postcensal file

ABCs Case Definition

Invasive pneumococcal disease: isolation of *Streptococcus pneumoniae* from normally sterile site in resident of a surveillance area in 2018.

ABCs Methodology

ABCs personnel routinely contacted all microbiology laboratories serving acute care hospitals in their area to identify cases. Standardized case report forms that include information on demographic characteristics, clinical syndrome, and outcome of illness were completed for each identified case. Whole genome sequencing (WGS) based characterization was conducted on all pneumococcal isolates, which includes deduction of capsular serotype and minimum inhibitory concentration (MIC) predictions (including PBP typing system for determining beta lactam antibiotic MICs). Conventional MIC testing is conducted on selected strains. Regular laboratory audits assessed completeness of active surveillance and detected additional cases.

Rates of invasive pneumococcal disease were calculated using population estimates for 2018 from the bridged-race vintage 2018 postcensal file. For national estimates, race- and age-specific rates of disease were applied from the aggregate surveillance area to the age and racial distribution of the 2018 U.S. population. Cases with missing data, excluding ethnicity, were multiply imputed using sequential regression imputation methods.[¶]

Reported ABCs Profiles

Race	No.	(Rate [*])
Black	769	(13.2)
White	2312	(9.1)
Other	216	(6.5)

^{*}Per 100,000 population for ABCs areas

¶ Surveillance Note

Missing race (n=321) data were multiply imputed using sequential regression imputation methods.

Age (years)	Cases		Deaths	
	No.	(Rate [*])	No.	(Rate [*])
< 1	54	(13.3)	4	(0.99)
1	39	(9.5)	2	(0.49)
2-4	54	(4.3)	1	(0.08)
5-17	96	(1.7)	1	(0.02)
18-34	223	(2.8)	11	(0.14)
35-49	483	(7.1)	41	(0.60)
50-64	1110	(16.6)	126	(1.88)
65-74	615	(20.2)	71	(2.32)
75-84	374	(25.5)	50	(3.42)
≥ 85	249	(38.7)	54	(8.37)
Total	3,297	(9.6)	361	(1.05)

^{*}Per 100,000 population for ABCs areas

Syndrome	No.	(% [*])
Meningitis	238	(7.2)
Bacteremia without focus	466	(14.1)
Pneumonia with bacteremia	2,355	(71.4)

^{*} Percent of cases

Antibiotic Susceptibility	S [*]	I [†]	R [‡]
Penicillin ⁺	95.0	1.4	2.0
Cefotaxime	96.4	1.4	0.2
Erythromycin	70.6	0.1	28.7
TMP/Sulfa	80.9	12.5	6.6
Tetracycline	88.0	0.0	12.0
Levofloxacin	99.9	0.0	0.1
Vancomycin	100	0.0	0.0

Based on reference lab testing of 2,883 isolates.

^{*} Susceptible; [†] Intermediate; [‡] Resistant based on year 2018 CLSI definitions

⁺ Penicillin CLSI breakpoints changed in 2009

National Estimates of Invasive Disease

Cases: 31,400 (9.6/100,000)
Deaths: 3,480 (1.06/100,000)

Healthy People 2020 Update

Objective: Decrease the incidence of invasive pneumococcal infections to 12 per 100,000 persons less than 5 years of age and to 31 per 100,000 persons aged 65 and older.

Age (year)	2020 Objective	2017 Rate [*]
< 5	12/100,000	7/100,000
≥ 65	31/100,000	24/100,000

^{*}Per 100,000 U.S. population < 5 years or ≥ 65 years

Citation

Centers for Disease Control and Prevention. 2018. Active Bacterial Core Surveillance Report, Emerging Infections Program Network, *Streptococcus pneumoniae*, 2018. Available via the internet: <http://www.cdc.gov/abcs/reports-findings/survreports/spneu18.pdf>