

Infectious Disease Epidemiology Report

Streptococcus pneumoniae, 2015



Background

Streptococcus pneumoniae is a gram-positive diplococcus with a well formed capsule that is commonly found in the nose and throat. The bacteria can sometimes cause severe illness in children, the elderly, and other people with weakened immune systems. *Streptococcus pneumoniae* is the most common cause of middle ear infections, sepsis in children, and pneumonia in immunocompromised individuals and the elderly.

The Infectious Disease Program of Maine Center for Disease Control and Prevention (Maine CDC) monitors the incidence of invasive pneumococcal disease through mandatory reporting by health care providers, clinical laboratories, and other public health partners. This report summarizes 2015 surveillance data on cases of invasive pneumococcal disease.

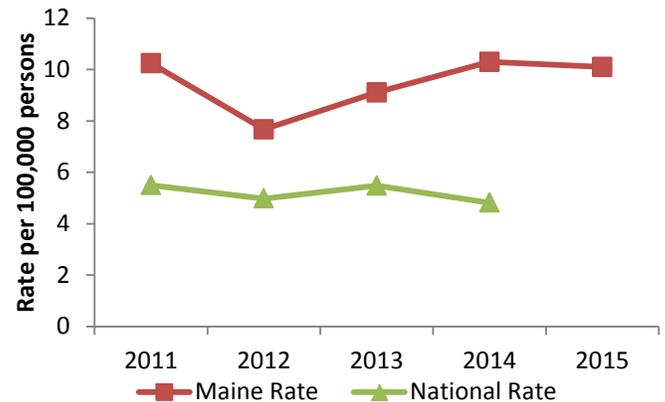
Methods

Invasive pneumococcal disease is defined as isolation of *Streptococcus pneumoniae* from a normally sterile site (e.g., blood or cerebrospinal fluid [CSF] or, less commonly, joint, pleural, or pericardial fluid). Antibiotic-resistant invasive pneumococcal disease meets the invasive definition and is resistant to at least one antibiotic. Standardized case reports are completed at Maine CDC for all invasive cases.

Results

A total of 135 cases of invasive pneumococcal disease were reported in Maine during 2015, for a rate of 10.1 cases per 100,000 persons. This is a slight decline from 2014. (Figure 1).

Figure 1. Invasive Pneumococcal Disease Rates, Maine and the US – 2010-2015



Overall, of the 135 reported cases, 110 (81.5%) were sensitive to all antibiotics tested; 21 (15.5%) were resistant to at least one antibiotic. Five cases occurred in children less than five years old, one of which was antibiotic-resistant (Table 1).

Table 1: Invasive and antibiotic-resistant pneumococcal disease by age – Maine, 2015

Age	All Invasive		Antibiotic-Resistant	
	#	%	#	%
<4	5	3.7	1	20.0
5-9	0	0.0	0	0.0
10-19	3	2.2	0	0.0
20-29	1	0.7	0	0.0
30-39	6	4.4	1	16.6
40-49	13	9.6	3	23.1
50-64	40	29.6	8	20.0
>=65	67	49.6	8	11.9
Total	135	100.0	21	15.7

Of the five cases in children less than four years, two (40%) had received the pneumococcal conjugate vaccine. Of the 67 adults aged 65 years and older, 42 (63%) had received a polysaccharide pneumococcal vaccine (PPV23). Overall, 60 of the 135 cases (44%) had previously received a pneumococcal vaccine.

Streptococcus pneumoniae – Maine, 2015

The vast majority of cases (96.3%) were hospitalized, and seven patients (5.2%) died.

The majority of cases of invasive pneumococcal disease were clinically diagnosed with pneumonia (Table 2).

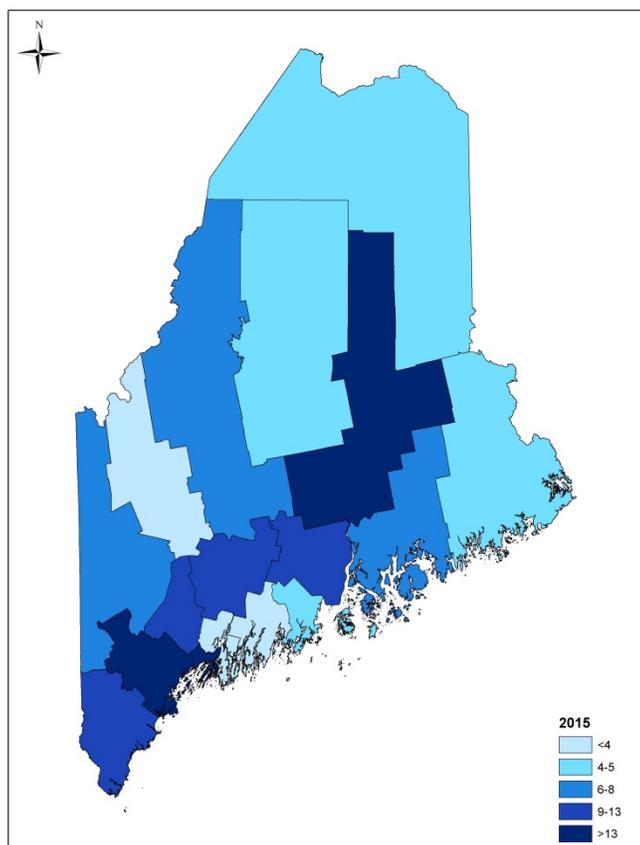
Table 2: Invasive pneumococcal disease by site of infection* – Maine, 2015, n=135

Site of infection	#	%
Bacteremia without focus	32	23.7
Osteomyelitis	1	0.7
Meningitis	2	1.5
Pneumonia	99	73.3
Endocarditis	1	0.7

* Cases may have had more than one site of infection

Invasive pneumococcal disease was identified among residents in all 16 Maine counties in 2015 (Figure 2).

Figure 2: Invasive pneumococcal disease cases by county- Maine, 2015



Discussion

Rates of pneumococcal disease have remained relatively steady in Maine over the last five years. Half of reported cases occurred in mature adults over the age of 65 years, making them eligible for pneumococcal vaccination.

Health care providers are encouraged to promote the use of pneumococcal vaccines. Pneumococcal conjugate vaccine (PCV13) is approved for all infants and children younger than five years of age. It protects against the 13 types of pneumococcal bacteria most likely to cause disease in infants and young children.

As of August 2014, all adults 65 years and older as well as persons with certain health conditions are encouraged to receive both the pneumococcal conjugate vaccine (PCV13) as well as one dose of the polysaccharide pneumococcal vaccine (PPV23) that provides protection against 23 serotypes of pneumococcal infection.

The following persons are encouraged to receive PPV23:

- Anyone 2 years of age or older with long term health problems such as diabetes, leaks of cerebrospinal fluid; heart, lung (not including asthma) kidney, or liver disease; or alcoholism
- Smokers older than 19
- Adults 19 and older who have asthma
- People who live in nursing homes or other long-term care facilities

Invasive pneumococcal disease should be reported to Maine CDC by calling 1-800-821-5821 or faxing to 1-800-293-7534. For more information contact your healthcare provider or local health center.

Additional information about invasive pneumococcal disease can be found at:

- Maine CDC pneumococcal website: <http://www.maine.gov/dhhs/mecdc>
- Federal CDC pneumococcal website: <http://www.cdc.gov/pneumococcal/index.html>