



Infectious Disease Epidemiology Report

Streptococcus pneumoniae, 2012



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 Epidemiology Program of the 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.

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 for all invasive cases, including those that are antibiotic resistant.

Results

A total of 102 cases of invasive pneumococcal disease were reported in Maine during 2012, for a rate of 7.7 cases per 100,000 persons. Of these, 79 (77.4%) were sensitive to all antibiotics tested. Three invasive pneumococcal cases were in children less than five years. The rate of invasive pneumococcal disease in children less than five years was 4.2 cases per 100,000 persons. Of cases in children less than five years, 66.7% had received the pneumococcal vaccine.

Twenty cases of antibiotic-resistant invasive pneumococcal disease were reported in Maine

during 2012 for a rate of 1.5 cases per 100,000 persons (Figure 1). Of antibiotic-resistant invasive pneumococcal disease reported in 2012, no cases were identified in children less than five years of age (Table 1).

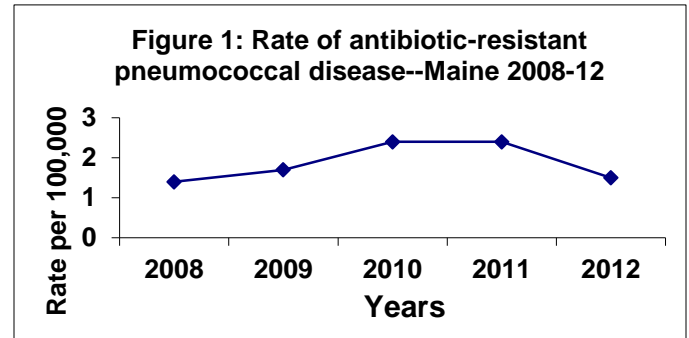


Table 1: Invasive and antibiotic-resistant pneumococcal disease by age – Maine, 2012

Age	All Invasive		Antibiotic-Resistant	
	Years	#	#	%
<1		1	0	0
1-4		2	0	0
5-9		0	0	0
10-19		1	1	5.0
20-29		3	1	5.0
30-39		5	3	15.0
40-49		10	2	10.0
50-64		23	3	15.0
>=65		57	10	50.0
Total		102	20	19.6

The majority of cases of antibiotic-resistant invasive pneumococcal disease were clinically diagnosed with pneumonia (Table 2). Of the 20 antibiotic-resistant cases, there were two deaths.

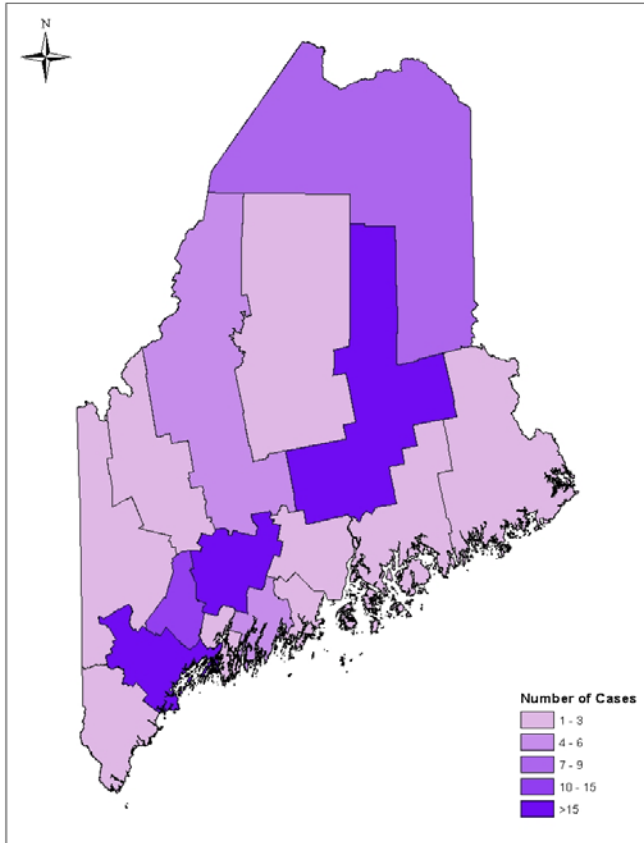
Table 2: Invasive pneumococcal disease by site of infection* – Maine, 2012

Site of infection	#	%
Bacteremia without focus	15	20
Meningitis	5	5.5
Pneumonia	75	44.6

* Cases may have had more than one site of infection

Antibiotic-resistant invasive pneumococcal disease was identified among residents of 11 Maine counties in 2012 .

Figure 2: Invasive pneumococcal disease by county- Maine, 2012



Discussion

Maine CDC conducts routine surveillance on all invasive pneumococcal cases. Changes in federal CDC's pneumococcal disease reporting led to modifications in Maine's surveillance in 2010.

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.

All adults 65 years and older as well as persons with certain health conditions are encouraged to receive 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
<http://www.mainepublichealth.gov>
- Federal CDC
<http://www.cdc.gov/vaccines/vpd-vac/pneumo/default.htm>