



Infectious Disease Epidemiology Report

Meningococcal Disease, 2010

Background

The Infectious Disease Epidemiology Program of the Maine Center for Disease Control and Prevention (Maine CDC) monitors the incidence of meningococcal disease through mandatory reporting by healthcare providers, clinical laboratories and other public health partners. This report summarizes 2010 surveillance data on cases of meningococcal disease and reviews trends over the past five years.

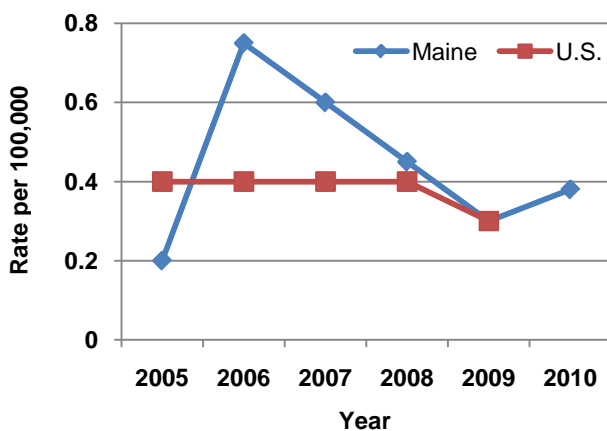
Methods

Meningococcal disease is an infection caused by *Neisseria meningitidis*, a gram-negative diplococcus. Invasive meningococcal disease is defined as *Neisseria meningitidis* isolated from a normally sterile site (such as blood or cerebrospinal fluid or less commonly, joint, pleural, or pericardial fluid). Standardized case reports are completed for all cases and documented in Maine CDC's surveillance system. Serogrouping was performed on *Neisseria meningitidis* isolates at Maine's Health and Environmental Testing Laboratory (HETL). Rates were calculated using 2010 U.S. census population.

Results

A total of five cases of invasive meningococcal disease were reported in 2010 for a rate of 0.4 cases per 100,000 population (Figure 1). The 2009 U.S. rate was 0.3 per 100,000 population.

Figure 1: Rate of Invasive Meningococcal Disease—Maine and U.S., 2005-2010



Of the five cases reported in 2010, two were clinically diagnosed with meningitis (40%), two with sepsis (40%), and one with bacteremia (20%).

Three of the five cases reported were in children aged less than 5 years. Two deaths were associated with invasive meningococcal disease in Maine in 2010.

From 2006 to 2010, 33 cases of invasive meningococcal disease were reported to Maine CDC. Four deaths occurred during these five years (Table 1).

Table 1: Invasive Meningococcal Disease and Deaths—Maine, 2006-2010

	Cases	Case rate	Deaths
2006	10	0.7	0
2007	8	0.6	0
2008	6	0.4	2
2009	4	0.3	0
2010	5	0.3	2
Total	33		4

Four types of meningococcal disease are vaccine-preventable (serogroups A, C, Y, and W-135). One case reported in 2010 was vaccine preventable - serogroup Y (Table 2). The remaining cases reported in 2010 were due to serogroups that are not vaccine-preventable.

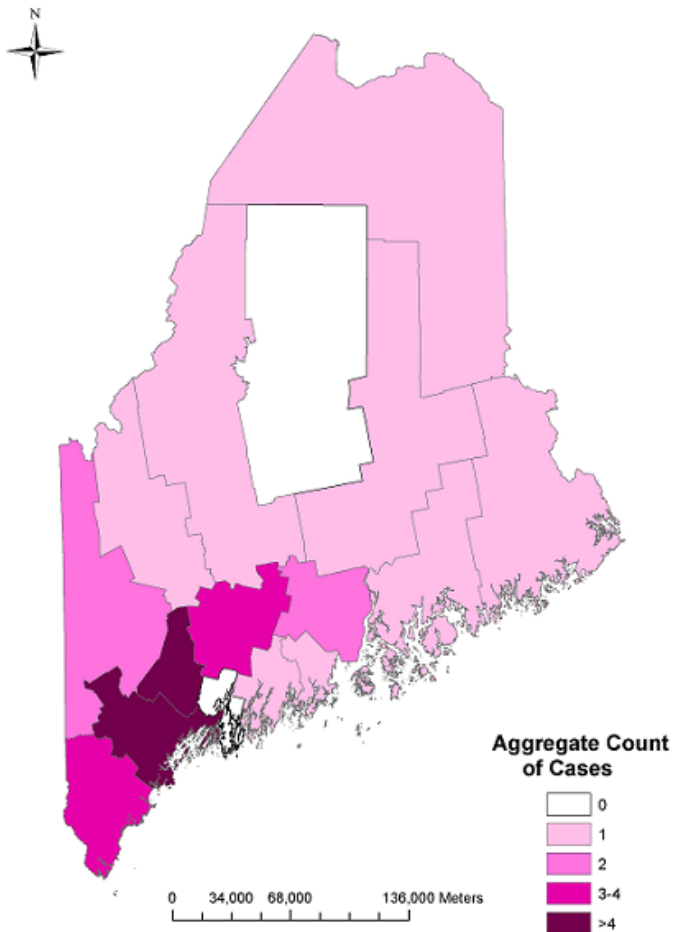
Table 2: Count of Invasive Meningococcal Disease by Serogroup—Maine, 2006-2010

Year	Serogroup					
	B	C	Y	W-135	Not groupable	Unknown*
2006	6	0	1	0	2	1
2007	3	2	2	0	1	0
2008	3	2	1	0	0	0
2009	0	0	1	1	2	0
2010	3	0	1	0	0	1
Total	15	4	6	1	5	2

* Isolate not received at HETL for serogrouping.

Cases of meningococcal disease were identified among residents of 14 Maine counties from 2006-2010 (Figure 2).

Figure 2: Meningococcal Disease by County—Maine, 2006-2010



Discussion

In 2010, five cases of invasive meningococcal disease were reported in Maine. Meningococcal disease can cause neurological disability, limb loss, and in some cases death. However, this illness can be prevented through vaccination and controlled through chemoprophylaxis of close contacts of cases.

Healthcare providers are encouraged to promote the use of meningococcal vaccines. There are two types of meningococcal vaccine: the meningococcal polysaccharide vaccine (MPSV4) and the meningococcal conjugate vaccine (MCV4). Both vaccines protect against serogroups A, C, Y, and W-135. There is currently no licensed vaccine

in the United States that protects against serogroup B.

MCV4 was licensed in 2005 and is the preferred vaccine for persons aged 2 to 55 years. MPSV4 was licensed in the 1970s and may be used if MCV4 is not available. MPSV4 is also licensed for people older than 55.

The Advisory Committee on Immunization Practices (ACIP) recommends vaccination with MCV4 for:

- 11-12 year olds at their pre-adolescent visit and a booster dose at age 16 years
- All unvaccinated teens ages 13-18 years; if vaccinated at age 13-15 years, a booster dose is recommended at age 16-18 years
- Unvaccinated incoming college students ages 19-21 years; a booster dose is recommended for incoming students who received their most recent dose when younger than age 16 years
- Persons with certain immune deficiency conditions, such as persistent complement component deficiency, HIV, and functional or anatomic asplenia
- Microbiologists routinely working with *Neisseria meningitidis*
- Travelers to or residents of countries where meningococcal disease is common
- U.S. military recruits

Clinicians suspecting meningococcal disease should report cases immediately to Maine CDC by calling 1-800-821-5821 or faxing to 1-800-293-7534. Epidemiologists are available 24 hours a day to assist in disease control measures.

Additional information about meningococcal disease can be found at:

- Maine CDC
<http://www.maine.gov/dhhs/boh/ddc/epi/airborne/meningococcal.shtml>
- Federal CDC
<http://www.cdc.gov/meningitis/index.html>
<http://www.cdc.gov/vaccines/vpd-vac/mening/default.htm>