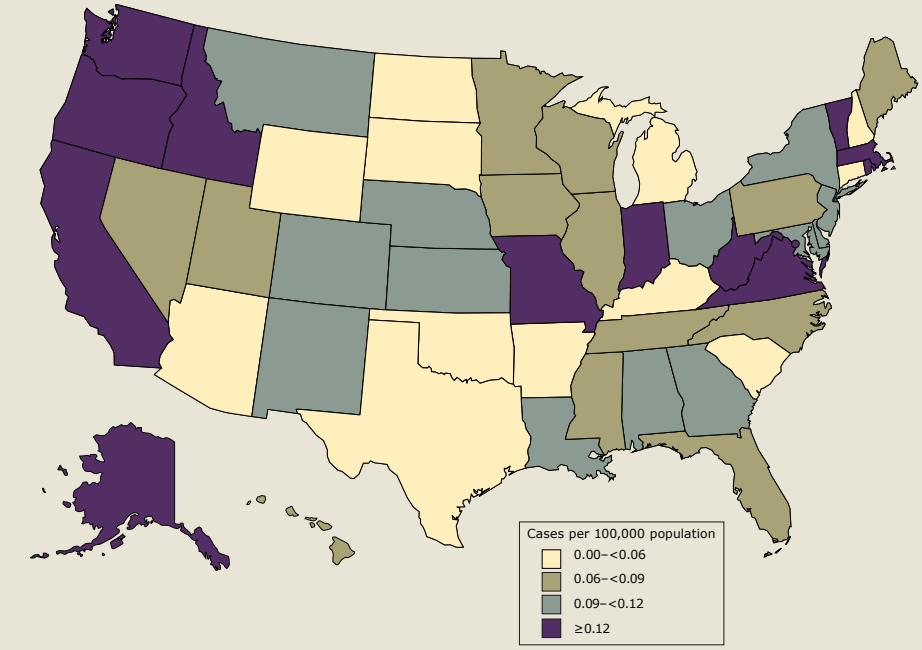
Enhanced Meningococcal Disease Surveillance Report, 2017*

Confirmed and Probable Cases Reported to the National Notifiable Diseases Surveillance System, 2017



As part of Enhanced Meningococcal Disease Surveillance (EMDS), additional data and isolates were collected from 45 state and 3 large jurisdiction health departments. In 2017, the population under surveillance was 319,469,805 or 98 % of the U.S. population. EMDS focuses on: (1) collecting isolates from all cases; (2) collecting complete case information, with an emphasis on college attendance for cases 15–24 years; history of sex with men for male cases ≥16 years; and HIV infection status for all cases.**

CSTE case definition: A confirmed case was defined as isolation of *Neisseria meningitidis* or detection of *N. meningitidis* by PCR from a normally sterile body site.

A probable case was defined as detection of *N. meningitidis* antigen by latex agglutination or immunohistochemistry.

*Delaware, Hawaii, Idaho, South Dakota, Wyoming, and the District of Columbia did not participate in EMDS; cases reported from these jurisdictions are only included in the map, incidence, and CFR tables (n=5). All other information is for cases from participating EMDS jurisdictions only (n=344).

**Funding for EMDS is provided by CDC through the Epidemiology and Laboratory Capacity for Infectious Diseases (ELC) Cooperative Agreement.

Meningococcal Disease Cases and Incidence by Serogroup and Age

Age (years)	B No. (Incidence†)	C No. (Incidence†)	W No. (Incidence†)	Y No. (Incidence†)	Nongroupable No. (Incidence†)	Other‡/Unknown No. (Incidence†)	Total No. (Incidence†)
<1	15 (0.38)	0 (0.00)	2 (0.05)	2 (0.05)	2 (0.05)	4 (0.10)	25 (0.63)
1–4	9 (0.06)	5 (0.03)	0 (0.00)	0 (0.00)	2 (0.01)	4 (0.03)	20 (0.13)
5–10	8 (0.03)	5 (0.02)	0 (0.00)	0 (0.00)	2 (0.01)	2 (0.01)	17 (0.07)
11–15	4 (0.02)	1 (0.00)	1 (0.00)	0 (0.00)	1 (0.00)	1 (0.00)	8 (0.04)
16–23	47 (0.14)	2 (0.01)	2 (0.01)	3 (0.01)	9 (0.03)	5 (0.01)	68 (0.20)
24–44	15 (0.02)	27 (0.03)	6 (0.01)	6 (0.01)	7 (0.01)	6 (0.01)	67 (0.07)
45–64	14 (0.02)	30 (0.04)	7 (0.01)	5 (0.01)	3 (0.00)	10 (0.01)	69 (0.08)
≥65	21 (0.04)	16 (0.03)	8 (0.02)	15 (0.03)	9 (0.02)	6 (0.01)	75 (0.15)
Total	**133 (0.04)**	**86 (0.03)**	**26 (0.01)**	**31 (0.01)**	**35 (0.01)**	**38 (0.01)**	**349 (0.11)**

Includes all confirmed and probable cases reported from all jurisdictions; †Cases per 100,000 population; and ‡includes 2 serogroup E cases.

National Center for Immunization and Respiratory Diseases
Office of Infectious Diseases

Case Fatality

Serogroup	No. deaths	(CFR†)
B	16	(12.0)
C	18	(21.2)
W	3	(12.0)
Y	2	(6.5)
NG	4	(11.4)
Unknown	2	(6.1)
Overall	**45**	**(13.1)**

Age (years)	No. deaths	(CFR†)
<1	3	(12.0)
1–4	6	(30.0)
5–10	0	(0.0)
11–15	2	(25.0)
16–23	3	(4.5)
24–44	9	(13.6)
45–64	9	(13.2)
≥65	13	(17.6)
Overall	**45**	**(13.1)**

Includes all confirmed and probable cases reported from all jurisdictions; †Case fatality ratio (CFR): deaths per 100 cases with known outcome; 5 (1%) cases with unknown outcome.

Laboratory Confirmation Method

84.7% (288/340) of confirmed cases were confirmed by culture; of those 245 (85.1%) had isolates submitted to CDC.
13.5% (46/340) of confirmed cases were confirmed by PCR.
1.8% (6/340) of confirmed cases had unknown laboratory confirmation method.

Outbreaks

98.0% (337/344) of cases had information on association with an outbreak; of those, 7.7% were part of an outbreak.

Eculizumab use

76.5% (263/344) of cases had information on use of the complement component inhibitor eculizumab; of those, 0 were taking eculizumab.

Homelessness

95.1% (327/344) of cases had information on homelessness; of those, 2.4% were identified as homeless.

History of sex with men among male cases

Among male cases aged ≥16 years, 67.9% (95/140) had information on history of sex with men; of those, 18.9% were identified as men who had sex with men (MSM).

College attendance among cases 18-24 years

Among cases 18-24 years, 100% (59/59) had information on college attendance; 64.4% were attending college.

Meningococcal Disease Cases and Incidence by Serogroup and College Attendance*

	B No. (Incidence†)	C No. (Incidence†)	W No. (Incidence†)	Y No. (Incidence†)	Nongroupable No. (Incidence†)	Total** No. (Incidence†)
Attending college‡	30 (0.26)	1 (0.01)	1 (0.01)	2 (0.02)	4 (0.03)	**38 (0.33)**
Not attending college‡	8 (0.04)	1 (0.01)	1 (0.01)	2 (0.01)	5 (0.03)	**21 (0.11)**

*Among cases 18-24 years. **Includes 4 cases with unknown serogroup. †Cases per 100,000 population; and ‡assumes 38.3% of 18–24 year olds attending college[1]

Vaccination Status among cases 18-24 years

MenACWY** vaccine receipt:

College students: 71.1% (27/38) had information on MenACWY receipt; of those 100% received MenACWY.
Persons not attending college: 66.7% (14/21) had information on MenACWY receipt; of those 57.1% received MenACWY.

MenB** vaccine receipt:

College students: 44.7% (17/38) had information on MenB receipt; of those 0 received MenB.
Persons not attending college: 33.3% (7/21) had information on MenB receipt; of those 0 received MenB.

**MenACWY = meningococcal conjugate vaccine, MenB = serogroup B meningococcal vaccine.

www.cdc.gov/meningococcal

HIV Infection among Meningococcal Disease Cases*

Data collected on HIV status will allow CDC to assess the impact of the recent Advisory Committee on Immunization Practices recommendation for use of MenACWY vaccination in HIV-infected persons.[2]

44.2% (152/344) of cases had information on HIV status; of those, 9.9% were identified as HIV-infected.

*Complete information has not been received for all 2017 cases

[1]U.S. Department of Education. Institute of Education Sciences NCfES. Integrated Postsecondary Education Data System Fall Enrollment Survey. https://nces.ed.gov/ipeds/Home/UseTheData, 2015.
[2]MacNeil JR, Rubin LG, Patton M, Ortega-Sanchez IR, Martin SW. Recommendations for Use of Meningococcal Conjugate Vaccines in HIV-infected Persons
— Advisory Committee on Immunization Practices, 2016. *MMWR Morb Mortal Wkly Rep* 2016;65:1189–1194. DOI: http://dx.doi.org/10.15585/mmwr.mm6543a3.