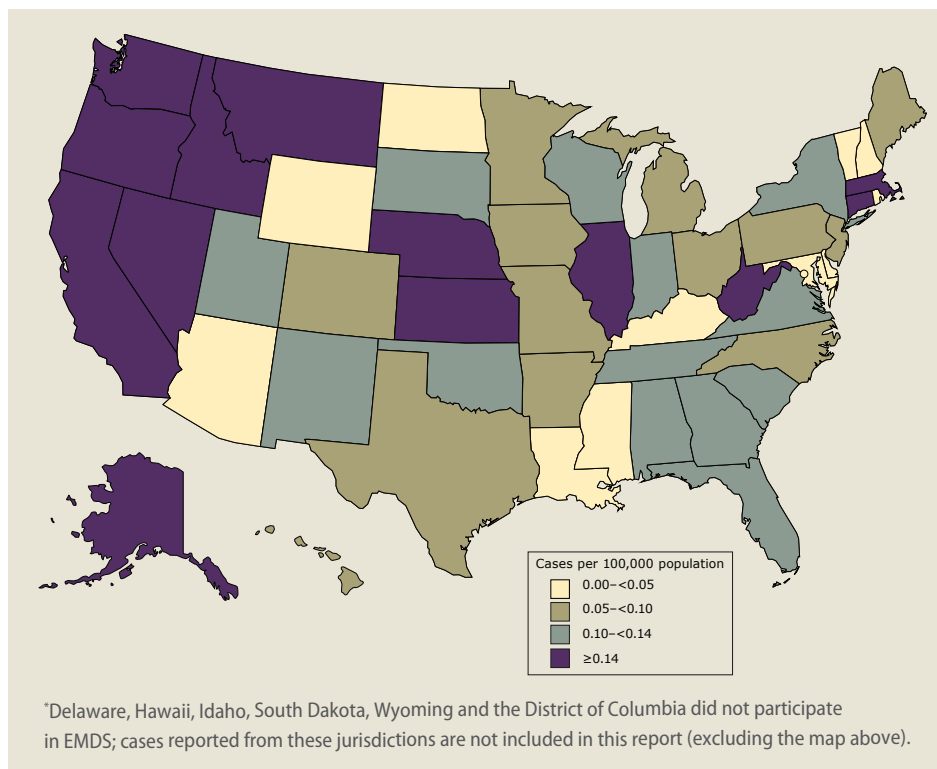


# Enhanced Meningococcal Disease Surveillance Report, 2016



## Confirmed and Probable Cases Reported to the National Notifiable Diseases Surveillance System, 2016\*



As part of Enhanced Meningococcal Disease Surveillance (EMDS)\*\*, additional data and isolates were collected from 45 state and 3 large jurisdiction health departments. In 2016, the population under surveillance was 316,931,626 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 aged 15–24 years; history of sex with men for male cases aged ≥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.

\*\*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 <sup>†</sup> )	C No. (Incidence <sup>†</sup> )	W No. (Incidence <sup>†</sup> )	Y No. (Incidence <sup>†</sup> )	Nongroupable No. (Incidence <sup>†</sup> )	Total <sup>‡</sup> No. (Incidence <sup>†</sup> )
<1	26 (0.67)	4 (0.10)	1 (0.03)	1 (0.03)	1 (0.03)	36 (0.93)
1–4	15 (0.10)	9 (0.06)	3 (0.02)	5 (0.03)	1 (0.01)	33 (0.21)
5–10	5 (0.02)	3 (0.01)	1 (0.00)	0 (0.00)	3 (0.01)	13 (0.05)
11–15	4 (0.02)	2 (0.01)	0 (0.00)	1 (0.00)	1 (0.00)	8 (0.04)
16–23	41 (0.12)	11 (0.03)	2 (0.01)	5 (0.01)	9 (0.03)	72 (0.21)
24–44	19 (0.02)	32 (0.04)	5 (0.01)	8 (0.01)	7 (0.01)	81 (0.09)
45–64	11 (0.01)	26 (0.03)	11 (0.01)	13 (0.02)	2 (0.00)	68 (0.08)
≥65	9 (0.02)	12 (0.02)	11 (0.02)	19 (0.04)	3 (0.01)	61 (0.13)
<b>Total</b>	<b>130 (0.04)</b>	<b>99 (0.03)</b>	<b>34 (0.01)</b>	<b>52 (0.02)</b>	<b>27 (0.01)</b>	<b>372 (0.12)</b>

Includes all confirmed and probable cases; <sup>†</sup>cases per 100,000 population; and <sup>‡</sup>includes 5 (1%) cases with other serogroups not listed and 25 (7%) cases with unknown serogroup.

National Center for Immunization and Respiratory Diseases  
Office of Infectious Diseases



## Case Fatality

Serogroup	No. deaths	(CFR <sup>†</sup> )
B	14	(10.9)
C	12	(12.9)
W	6	(18.2)
Y	9	(18.4)
NG	4	(15.4)
Unknown	3	(15.8)
<b>Overall</b>	<b>49</b>	<b>(13.9)</b>

Age (years)	No. deaths	(CFR <sup>†</sup> )
<1	4	(11.1)
1–4	5	(15.2)
5–10	1	(8.3)
11–15	1	(12.5)
16–23	6	(8.8)
24–44	10	(13.0)
45–64	8	(12.7)
≥65	14	(25.5)
<b>Overall</b>	<b>49</b>	<b>(13.9)</b>

<sup>†</sup>Case fatality ratio (CFR): deaths per 100 cases with known outcome; 20 (5%) cases with unknown outcome.

## Isolate Submission

288 (78.5%) of 367 confirmed cases had isolates submitted to CDC.

## History of sex with men among male meningococcal disease cases

Among male cases aged ≥16 years, 57.2% (83/145) had information on history of sex with men; of those, 39.8% were identified as men who had sex with men (MSM.)

## College attendance among meningococcal disease cases aged 18–24 years

Among cases aged 18–24 years, 90.9% (60/66) had information on college attendance; of those, 53.3% were identified as attending college.

## Vaccination Status among Cases\*

MenACWY\*\* vaccine receipt among college students: 92% (19% unknown)

MenACWY vaccine receipt among persons not attending college: 44% (43% unknown)

MenB\*\* vaccine receipt among college students: 7% (53% unknown)

MenB vaccine receipt among persons not attending college: 0% (61% unknown)

\*Among those with known vaccine history. \*\*MenACWY = meningococcal conjugate vaccine, MenB = serogroup B meningococcal vaccine.

## Meningococcal Disease Cases and Incidence by Serogroup and College Attendance

	B No. (Incidence <sup>†</sup> )	C No. (Incidence <sup>†</sup> )	W No. (Incidence <sup>†</sup> )	Y No. (Incidence <sup>†</sup> )	Nongroupable No. (Incidence <sup>†</sup> )	Total No. (Incidence <sup>†</sup> )
Attending college <sup>‡</sup>	25 (0.23)	0 (0.00)	0 (0.00)	3 (0.03)	4 (0.04)	<b>32 (0.29)</b>
Not attending college <sup>‡</sup>	9 (0.05)	11 (0.06)	1 (0.01)	2 (0.01)	4 (0.02)	<b>28 (0.15)</b>

<sup>†</sup>Cases per 100,000 population; and <sup>‡</sup>assumes 36.2% of 18–24 year olds attending college<sup>1</sup>

[www.cdc.gov/meningococcal](http://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.<sup>2</sup>

Among all cases, 50.5% (188/372) had information on HIV status; of those, 4.3% were identified as HIV-infected.

<sup>1</sup>College Participation Rates: Percent of 18 to 24 Year Olds Enrolled in College. <http://www.higheredinfo.org/dbrowser/index.php?measure=104>.

<sup>2</sup>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>.