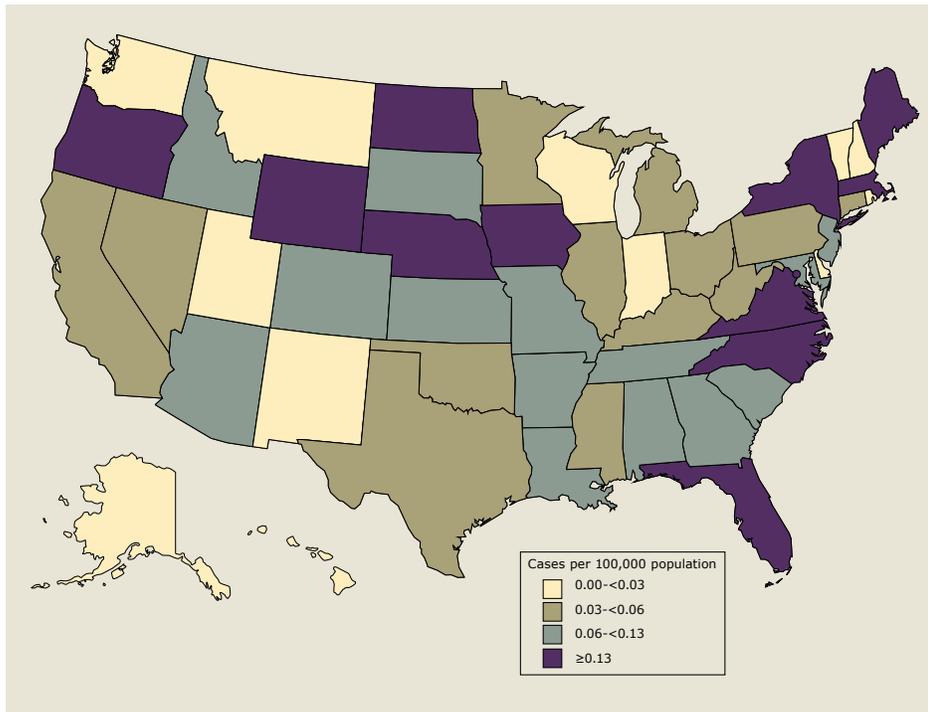


# Enhanced Meningococcal Disease Surveillance Report, 2022



## Confirmed and Probable Cases Reported to the National Notifiable Diseases Surveillance System, 2022



As part of Enhanced Meningococcal Disease Surveillance (EMDS)\*, additional data and isolates were collected from 50 state and 3 large jurisdiction health departments. In 2022, the population under surveillance was 333,287,557 (the full United States population). EMDS focuses on: (1) collecting isolates from all cases; and (2) collecting complete case information, with an emphasis on college attendance for cases in people aged 15–24 years; history of sex with men for cases in males aged ≥16 years; and information on homelessness 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> )	Other/ Unknown No. (Incidence <sup>†</sup> )	Total No. (Incidence <sup>†</sup> )
<1	2 (0.05)	2 (0.05)	1 (0.03)	5 (0.14)	1 (0.03)	3 (0.08)	14 (0.38)
1–4	6 (0.04)	3 (0.02)	2 (0.01)	0 (0.00)	1 (0.01)	2 (0.01)	14 (0.09)
5–10	1 (0.00)	3 (0.01)	0 (0.00)	1 (0.00)	2 (0.01)	0 (0.00)	7 (0.03)
11–15	2 (0.01)	2 (0.01)	0 (0.00)	0 (0.00)	3 (0.01)	0 (0.00)	7 (0.03)
16–23	17 (0.05)	8 (0.02)	0 (0.00)	0 (0.00)	9 (0.03)	6 (0.02)	40 (0.11)
24–44	16 (0.02)	46 (0.05)	3 (0.00)	21 (0.02)	4 (0.00)	8 (0.01)	98 (0.10)
45–64	15 (0.02)	32 (0.04)	4 (0.00)	19 (0.02)	5 (0.01)	11 (0.01)	86 (0.10)
≥65	2 (0.00)	11 (0.02)	2 (0.00)	13 (0.02)	5 (0.01)	10 (0.02)	43 (0.07)
<b>Total</b>	<b>61 (0.02)</b>	<b>107 (0.03)</b>	<b>12 (0.00)</b>	<b>59 (0.02)</b>	<b>30 (0.01)</b>	<b>40 (0.01)</b>	<b>309 (0.09)</b>

Includes all confirmed and probable cases reported from all jurisdictions. <sup>†</sup>Cases per 100,000 population.



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## Case Fatality

Serogroup	No. deaths	CFR <sup>†</sup>
B	4	6.7
C	20	19.2
W	1	9.1
Y	10	17.2
NG	4	13.3
Unknown	1	2.9
<b>Overall</b>	<b>40</b>	<b>13.3</b>

Age (years)	No. deaths	CFR <sup>†</sup>
<1	0	0.0
1–4	1	7.7
5–10	1	14.3
11–15	0	0.0
16–23	3	7.5
24–44	22	23.2
45–64	12	14.6
≥65	1	2.4
<b>Overall</b>	<b>40</b>	<b>13.3</b>

Includes all confirmed and probable cases reported from all jurisdictions

<sup>†</sup> Case fatality ratio (CFR): deaths per 100 cases with known outcome; 9 (3%) cases with unknown outcome.

## Laboratory Confirmation Method

85.4% (263/308) of confirmed cases were confirmed by culture; of those 198 (75.3%) had isolates submitted to CDC.

13.6% (42/308) of confirmed cases were confirmed by PCR.

1.0% (3/308) of confirmed cases had unknown laboratory confirmation method.

## Outbreaks

96.8% (299/309) of cases had information on association with an outbreak; of those, 58 (19.4%) were part of an outbreak. 40 of these 58 cases (69.0%) were related to a large outbreak among men who have sex with men in Florida.

## Complement inhibitor use

76.7% (237/309) of cases had information on use of a complement component inhibitor; of those, 7 (3.0%) were taking a complement inhibitor.

## Homelessness

96.8% (299/309) of cases had information on homelessness; of those, 14 (4.7%) were among people experiencing homelessness.

## History of sex with men among cases in men

Among cases in men aged ≥16 years, 71.8% (117/163) had information on history of sex with men; of those, 46 (39.3%) were identified as men who had sex with men (MSM).

## Symptoms

84.8% (262/309) of cases had symptom information available; of those 10 (3.8%) had gastrointestinal symptoms (nausea, vomiting, or diarrhea) in the absence of typical meningococcal symptoms (headache, fever, neck stiffness, rash). These 10 cases were 5 serogroup C cases, 1 serogroup W case, 2 serogroup Y cases, and 2 case with unknown serogroup.

## Antibiotic-resistant serogroup Y

59 NmY cases were reported. 49 (83.1%) had isolates available for characterization at CDC; of those, 5 (10.2%) were found to be ciprofloxacin- and penicillin-resistant, and 7 (14.3%) were found to be penicillin-resistant only.

## College attendance among cases in people aged 18-24 years

Among cases in people aged 18-24 years, 100% (42/42) had information on college attendance; 24 (57.1%) were in people attending college.

## 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>	12 (0.10)	2 (0.02)	0 (0.00)	0 (0.00)	7 (0.06)	24 (0.20)
Not attending college <sup>‡</sup>	5 (0.03)	8 (0.04)	0 (0.00)	0 (0.00)	3 (0.02)	18 (0.09)

\*Among cases in people aged 18-24 years. \*\* Includes 4 cases with unknown serogroup. <sup>†</sup> Cases per 100,000 population.

<sup>‡</sup> Assumes 38.3% of 18-24 year olds attending college<sup>1</sup>

## Vaccination Status among patients 18-24 years

### MenACWY (meningococcal conjugate vaccine) receipt:

College students: 87.5% (21/24) had information on MenACWY receipt; of those 76.2% received ≥1 dose of MenACWY.

Persons not attending college: 83.3% (15/18) had information on MenACWY receipt; of those 60.0% received ≥1 dose of MenACWY.

### MenB (serogroup B meningococcal vaccine) receipt:

College students: 91.7% (22/24) had information on MenB receipt; of those 36.4% received ≥ 1 dose of MenB.

Persons not attending college: 44.4% (8/18) had information on MenB receipt; of those 12.5% received ≥ 1 dose of MenB.

## HIV Infection among Meningococcal Disease Cases

Data collected on HIV status will allow CDC to assess the impact of the Advisory Committee on Immunization Practices recommendation for use of MenACWY vaccination in people with HIV (PWH)<sup>2</sup>

69.3% (214/309) of cases had information on HIV status; of those, 36 (16.8%) were identified as PWH.

<sup>1</sup> U.S. Department of Education. Institute of Education Sciences NCES. Integrated Postsecondary Education Data System Fall Enrollment Survey. [https://nces.ed.gov/ipeds/Home/UseTheData\\_2015](https://nces.ed.gov/ipeds/Home/UseTheData_2015).

<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>.