

Invasive Meningococcal Disease

Invasive Meningococcal Disease

Neisseria meningitidis (N. men)

Including Meningitis, Meningococemia, and Other Invasive Infections



IMMEDIATELY REPORTABLE DISEASE

Per N.J.A.C. 8:57, healthcare providers and administrators shall immediately report **by telephone** confirmed and suspected cases of invasive meningococcal disease to the health officer of the jurisdiction where the ill or infected person lives, or if unknown, wherein the diagnosis is made. The health officer (or designee) **must immediately institute the control measures listed below in section 5, "Controlling Further Spread,"** regardless of weekend, holiday, or evening schedules.

Directory of Local Health Departments in New Jersey

AND

Directory of After Hour Emergency Contact Phone Numbers for Local Health Departments in New Jersey, are available at:

<https://www.nj.gov/health/cd/reporting/>

If the health officer is unavailable, the healthcare provider or administrator shall make the report to the New Jersey Department of Health by telephone to 609.826.5964, between 8:00 A.M. and 5:00 P.M. on non-holiday weekdays or to 609.392.2020 during all other days and hours.

January 2025

1 THE DISEASE AND ITS EPIDEMIOLOGY

Etiologic agent

Invasive meningococcal infections are caused by the bacterium *Neisseria meningitidis*, an aerobic, **gram-negative diplococcus**. There are at least 13 serogroups of *N. meningitidis*, classified according to the immunologic reactivity of their polysaccharide capsules (A, B, C, D, 29E, H, I, K, L, W, X, Y, and Z). Of these, six are clinically relevant, being responsible for nearly all disease worldwide (A, B, C, W, X, and Y). Currently, serogroups B, C, and Y cause the majority of the illness seen in the United States. Serogroup distribution also varies by age. Serogroup B causes about 40% of cases in children and young adults less than 25 years of age. Serogroups C, W, or Y cause about 80% of all cases of meningococcal disease among persons 25 years of age or older.

Clinical description and laboratory diagnosis

Meningococcal disease manifests most commonly as meningitis and/or meningococemia, although pneumonia, septic arthritis, otitis media, and epiglottitis are occasionally seen. Symptoms of **meningitis** (infection of the membrane covering the brain and spinal cord) typically include: sudden onset of high fever, headache and stiff neck, often accompanied by other symptoms, such as nausea, vomiting, photophobia (sensitivity to light), and altered mental status. **Meningococemia** (infection of the blood) typically presents with the abrupt onset of fever and a petechial or purpuric rash¹, often associated with hypotension, shock, acute adrenal hemorrhage, and multiorgan failure. Even with appropriate antibiotic treatment, the case-fatality ratio of meningococcal disease is estimated to be between 10% and 15%. The case-fatality ratio of meningococemia is up to 40%. Nearly one fifth of survivors suffer debilitating sequelae, including hearing or visual loss, learning disabilities or mental retardation, seizures, and amputation of limbs secondary to vascular collapse.

Laboratory identification is typically made by isolation of the organism (culture) from normally sterile sites, such as blood or cerebrospinal fluid (CSF). A list of normally sterile sites is available on the New Jersey Department of Health (NJDOH) *Neisseria meningitidis* [webpage](#). As per New Jersey Administrative Code (N.J.A.C.) 8:57-1.7(e), *N. meningitidis* isolated from normally sterile sites **must** be submitted within 3 days of identification to the NJDOH Public Health and Environmental Laboratories ([PHEL](#)) for confirmation and serogrouping. Approval to submit isolates is not necessary as submission is required by regulation.

Detection of *N. meningitidis* via real-time **PCR** is becoming increasingly common. A major advantage of PCR is that it allows for detection of *N. meningitidis* from clinical samples in which the organism could not be detected by culture methods, such as when a patient has been treated with antibiotics before a clinical specimen is obtained for culture. Even when the

¹ **Purpuric/Petechial:** Red or purple discolorations caused by bleeding under the skin or mucous membranes; they do not blanch or fade with pressure. Petechial lesions appear as small, reddish freckles, while purpuric lesions cover larger areas.

organisms are nonviable following antimicrobial treatment, PCR can still detect *N. meningitidis* DNA. The NJDOH is currently unaware of any NJ medical facilities who have the capability to detect the serogroup in addition to the organism via PCR. Therefore, if *N. meningitidis* has been identified via PCR, it is important to determine whether there is also a culture result, if a culture result is pending, or if there is sufficient remaining CSF clinical sample material that can be submitted for testing:

- If the culture result is **positive**, the *N. meningitidis* isolate must be submitted to NJDOH PHEL, as described above and as required by N.J.A.C. 8:57-1.7(e).
- If there is no pending culture or the culture result is negative (e.g., no growth), and result was on **CSF**, it is very important to request from the testing facility that any remaining CSF clinical sample yielding the positive PCR result be sent to NJDOH PHEL for serogroup testing at CDC or an approved VPD reference laboratory. PLEASE NOTE: currently, facilities are not required to submit specimens other than those specified within N.J.A.C. 8:57-1.7, however most facilities are agreeable to submitting the CSF samples in order to facilitate serogroup testing for surveillance and public health response. While approval is not required, it is still important to notify NJDOH that a CSF clinical sample will be submitted instead of an isolate.

Reservoir

Humans (asymptomatic carriers) are the only known reservoir of *N. meningitidis*.

Mode of transmission

The principal route of meningococcal transmission is person-to-person contact via droplet aerosol or secretions from the nasopharynx of colonized persons and requires close contact. The bacteria may also be spread by a vehicle contaminated with saliva (e.g., a cigarette, food utensils, or water bottle), but the risk of such transmission is very low. Up to 10% of the population may be asymptomatic nasopharyngeal carriers of strains of *N. meningitidis*. The bacteria attach to and multiply on the mucosal cells of the nasopharynx. In a small proportion (less than 1%) of colonized persons, the organism penetrates the mucosal cells, enters the bloodstream, and causes invasive disease.

Incubation period

The incubation period of meningococcal disease is usually less than 4 days, with a range of 2 to 10 days.

Infectious period

The patient remains infectious as long as meningococci are present in respiratory/oral secretions, or until 24 hours after initiation of effective antibiotic treatment. In determining indications for prophylaxis, the period of communicability is considered to be from 7 days before disease onset through 24 hours after initiation of effective antibiotic treatment. In addition to standard precautions, droplet precautions are recommended until 24 hours after initiation of effective antibiotics.

Epidemiology

N. meningitidis typically colonizes the nose and throat of 5% to 10% of the general population at any given time. Colonized persons (carriers) are asymptomatic, and carriage of the bacteria may act as an immunizing exposure, protecting the carrier from future infections by that particular strain. Carriers act as vectors, able to spread the bacteria to others through saliva and respiratory secretions. In a small proportion (less than 1%) of colonized persons, *N. meningitidis* penetrates the nasopharyngeal mucosa, reaches the bloodstream, and causes systemic disease. For most people, carriage is an immunizing process that results in a systemic, serogroup-specific protective antibody response.

The relative distribution of serogroups varies by age; serogroup B causes about 40% of cases in children and young adults <25 years of age, while serogroups C, W, Y cause about 80% of all cases of meningococcal disease among persons ≥25 years of age. In New Jersey, approximately 10 confirmed cases of invasive meningococcal disease are reported every year. Although meningococcal disease occurs throughout the year, incidence peaks in late winter and early spring. Infants less than 1 year of age and adolescents ages 16 through 21 years have higher rates of disease than other age groups, but cases occur in all age groups including the elderly.

In the United States, outbreaks account for approximately 5% of reported meningococcal disease cases (95% of cases are sporadic). During 2013–2018, 10 outbreaks of serogroup B meningococcal disease occurred on college campuses, resulting in 39 cases and 2 deaths (range, 2–9 cases per outbreak). An additional 2022 serogroup B outbreak in a college resulted in 2 cases and no deaths. In addition, outbreaks of serogroup C meningococcal disease have been reported among men who have sex with men (MSM) in major metropolitan areas. [Outbreaks](#) have recently occurred among other populations, including persons experiencing homelessness (PEH) and in association with travel to the Kingdom of Saudi Arabia.

[Risk groups](#) include household contacts of case-patients, military recruits, college students living in residence halls, microbiologists working with isolates of *N. meningitidis*, persons traveling or residing in countries in which the disease is common, persons with functional or anatomic asplenia, persons living with HIV infection, persons with deficiencies in the terminal common complement pathway, persons who use complement inhibitors, and men who have sex with men.

2 REPORTING CRITERIA AND LABORATORY TESTING SERVICES

A. New Jersey Department of Health Case Definition

Invasive *Neisseria meningitidis* cases are reported by states to CDC through the National Notifiable Diseases Surveillance System (NNDSS). The New Jersey Department of Health (NJDOH) Communicable Disease Service (CDS) follows the most current case definition as published on the CDC NNDSS website. For the most recent case definition please visit:

<https://ndc.services.cdc.gov/conditions/meningococcal-disease/>

CASE CLASSIFICATION (as of 2015)

Clinical Description:

Clinical purpura fulminans in the absence of a positive blood culture.

Laboratory Criteria for Diagnosis:

- Gram-negative diplococci, not yet identified, isolated from a normally sterile body site
- Detection of *N. meningitidis* antigen
 - In formalin-fixed tissue by immunohistochemistry (IHC); or
 - In CSF by latex agglutination
- Detection of *N. meningitidis* – specific nucleic acid in a specimen obtained from a normally sterile body site, using a validated polymerase chain reaction (PCR) assay; or
- Isolation of *N. meningitidis*
 - From a normally sterile body site; or
 - From purpuric lesions

CONFIRMED

- Detection of *N. meningitidis* – specific nucleic acid in a specimen obtained from a normally sterile body site, using a validated polymerase chain reaction (PCR) assay; OR
- Isolation of *N. meningitidis*
 - From a normally sterile body site; OR
 - From purpuric lesions.

PROBABLE

- Detection of *N. meningitidis* antigen
 - In formalin-fixed tissue by immunohistochemistry (IHC); OR
 - In CSF by latex agglutination

POSSIBLE

- Clinical purpura fulminans in the absence of a positive blood culture; OR
- Gram-negative diplococci, not yet identified, isolated from a normally sterile body site

B. Laboratory Testing Services Available

The PHEL will confirm and serogroup isolates of invasive *N. meningitidis*. Serogrouping aids in public health surveillance.

While PHEL is currently unable to perform serotype testing on PCR-positive specimens, they will facilitate additional testing at CDC or one of the approved VPD Reference Centers.

For more information about submitting specimens, please see Sections 3B and 4B below or contact NJDOH Communicable Disease Service (CDS) at 609.826-5964.

NOTE: Only invasive *N. meningitidis* infections (identified in a specimen collected from a normally sterile body site) are reportable and require a public health response. Up to 10% of persons are asymptomatic, transient nasopharyngeal carriers of *N. meningitidis* strains that are largely nonpathogenic. Therefore, a positive culture or PCR result in a specimen such as throat, sputum, or skin lesion would not constitute an invasive (reportable) case.

3 PURPOSE OF SURVEILLANCE AND REPORTING REQUIREMENTS

A. Purpose of surveillance and reporting

- Ensure that all cases of invasive *N. meningitidis* are serogrouped.
- Identify close contacts of a case and provide recommendations for appropriate preventive measures for those close contacts, such as chemoprophylaxis, thus preventing further spread of infection.
- Increase understanding about the disease, its transmission, and methods of prevention.
- Identify clusters or outbreaks of disease promptly and initiate appropriate prevention and control measures.
- Monitor the impact of meningococcal vaccines.

B. Laboratory Reporting Requirements

The N.J.A.C. 8:57-1.7 states that a laboratory director (or designee) shall report any positive culture, test, or assay result specific for invasive meningococcal disease (*N. meningitidis*) **immediately by telephone** to the local Health Officer having jurisdiction over the locality where the patient lives or, if unknown, to the Health Officer in whose jurisdiction the healthcare provider who requested the laboratory examination is located.

If this is not possible, the report may be made immediately by telephone to the NJDOH at 609.826.5964 during business hours and at 609.392.2020 after business hours and on weekends and holidays. Such report shall be followed within 24 hours by a written or electronic lab report.

C. Health Care Provider Reporting Requirements

According to N.J.A.C. 8:57-1.4, a physician, advanced practice nurse, physician's assistant, or a person having control or supervision over a hospital or other healthcare institution shall **immediately report by telephone a known or suspect case** of invasive meningococcal disease (*N. meningitidis*) to the Health Officer of the jurisdiction where the individual lives or if unknown, wherein the diagnosis is made. If the Health Officer is unavailable, the report shall be made to the NJDOH by telephone at 609.826.5964 during business hours, or 609.392.2020 after business hours and on weekends and holidays.

D. Local Health Department Reporting and Follow-up Responsibilities

The N.J.A.C. 8:57-1.9 states that a Health Officer (or designee) who is notified of the existence of a known or suspect case of invasive meningococcal disease (*N. meningitidis*) shall **immediately notify NJDOH by telephone** at 609.826.5964 during business hours and 609.392.2020 after business hours and on weekends and holidays. It is important that this call be made as soon as possible because a diagnosis of "meningitis" can often cause anxiety or overreaction in a school, workplace, or community setting. NJDOH staff will provide guidance and assistance as needed in case investigation, risk communication, contact tracing, and prophylaxis recommendations. Case investigation and response must not be delayed by weekend, holiday, or evening schedules.

Institution of disease control measures is an integral part of follow-up. It is the Health Officer's responsibility to understand and, if necessary, **immediately institute the control guidelines listed below in section 5, "Controlling Further Spread."**

4 CASE INVESTIGATION

A. Objectives of the investigation

The primary objective of the case investigation is to ensure that all exposed close contacts of the patient are identified and referred to a healthcare provider for chemoprophylaxis to prevent further spread of illness (see section 4B3, below, for definition of close contact).

If the individual does not have a healthcare provider or cannot obtain the recommended medication, the health officer should assist in obtaining the medication.

A second objective of the case investigation is to document information obtained and actions taken. Thorough and timely documentation in Communicable Disease Reporting and Surveillance System (CDRSS) will facilitate communication between disease investigators and assist with public health surveillance. Refer to section 4B5, below, for specific information on filing the report in CDRSS.

Case investigations typically include review of laboratory, medical, and immunization records, as well as interviewing the medical provider/designee to obtain information about clinical presentation and impression. Investigations **also** include interviews of cases, or their guardian, which are necessary to verify onset dates, symptoms, and to identify sources of infection and contacts at risk.

B. Investigation guidelines

A [VPD General Case Investigation Checklist](#) and [Invasive Meningococcal Disease \(IMD\) Case Investigation Checklist](#) for Local Health Departments were developed to be used by case investigators as a supplement along with this chapter. They include high level steps of investigation, not necessarily in order, when investigating *N. men* reports. The checklist can be accessed at: <https://www.nj.gov/health/cd/topics/meningo.shtml>

1. Verify the diagnosis/laboratory report

- i) Clarify verbal reports “[meningitis](#)” vs [meningococcal disease](#). Often, reported cases of “meningitis” are ultimately found to be caused by a virus, fungus, or bacteria other than *N. meningitidis* (e.g., *N. men*, *H. flu*, *S. pneumo*).
 - a. Obtain as much information as possible regarding situation from case reporter. The diagnosis can be verified by the healthcare provider’s clinical impression and/or lab findings.
 - Is the cause of “meningitis” believed to be bacterial? Viral “meningitis” is not reportable.
 - Is *N. men* specifically suspected? How high on differential is *N. men*? Is it enough to begin recommending prophylaxis?
 - Is there another leading diagnosis?
 - b. Request a copy of clinical notes; gram stain and chemistry results (CSF analysis?); and whether any other laboratory tests are pending.

When a high clinical suspicion of *N. men* exists, it is not necessary to await lab results to initiate case investigation and public health response. If the healthcare provider has a reasonable suspicion that the patient has invasive meningococcal disease (meningitis and/or meningococemia), close contacts of the patient should receive prophylaxis, regardless of immunization status.

- ii) Review reported laboratory result(s) to ensure source is from a normally [sterile site](#). Occasionally, reported cases of *N. meningitidis* are ultimately found to be results from laboratory tests performed on specimens that are considered to be non-sterile (e.g., throat swab), therefore not invasive disease, is not reportable, and no public health response is necessary. The case can be closed as Not A Case/Does Not Meet Case Definition. If unsure whether a result is sterile vs non-sterile, inquire with the testing laboratory or NJDOH.
 - a. If PCR positive is reported in CDRSS first, inquire if culture result is pending*
 - b. When *N. meningitidis* has been identified via culture of a normally sterile specimen,
 - An isolate MUST be submitted to [NJ PHEL](#) for serogroup testing, as required per N.J.A.C. 8:57-1.7(e), REGARDLESS of patient’s mortality
 - Approval by NJDOH for isolate submission is not necessary as it is required by regulation.
 - Contact testing laboratory (or facility IP) as soon as possible after a case is reported to assure *N. meningitidis* isolate will be submitted to PHEL. In the laboratory test section of CDRSS, document the date and method the isolate will be sent to PHEL.

- This may necessitate calling a commercial laboratory to request submission.
- Facility/laboratory should create an order via [PHEL's Online Ordering Portal](#):
 - If online ordering is not available, a completed [BACT-109](#) form must accompany the isolate submitted to PHEL.
 - Print requisition form and include with sample in shipment to PHEL. Name and DOB must be correct and match between form and sample or PHEL will reject it.
- c. *When *N. meningitidis* has been identified via PCR on **CSF** and no culture is pending OR culture result is negative:
 - Please request remaining CSF clinical sample (minimum volume: 300-500µL) be sent on cold ice packs (4°C) or dry ice (-20°C) to PHEL for forwarding to Wisconsin State Laboratory of Hygiene (our VPD Reference Center).
 - Notify NJDOH REP/SME that clinical sample is being submitted instead of isolate.
 - Facility/laboratory should create an order via [PHEL's Online Ordering Portal](#):
 - Search for “*Reference Laboratory Test Request*”, select “*Other*” under test type; enter “*N. men PCR testing*”; select specimen type (CSF); and select appropriate reference laboratory location (*Wisconsin*).
 - If online ordering is not available, a completed [BACT-109](#) form must accompany the specimens sent to PHEL. In “Tests Requested” section of the form, indicate “*Reference Laboratory*” and write in “*Wisconsin*”.
 - Print requisition form and include with sample in shipment to PHEL. Name and DOB must be correct and match between form and sample or PHEL will reject it.

2. Verify illness onset date

In order to calculate the infectious period for identification of close contacts, it is very important to verify the illness onset date. Frequently, the information initially reported changes as the case investigation progresses.

3. Identify exposed close contacts and refer them to a healthcare provider for prophylaxis (regardless of vaccination status)

- i) Collect as much information as possible about the patient's activities and contacts during the infectious period to identify close contacts

The infectious period is 7 days before the onset of illness through 24 hours after initiation of effective antibiotic treatment. Information may be obtained by interviewing the patient, the patient's healthcare provider, family and friends, school or daycare personnel, hospital personnel, and others.

- ii) If an individual does not have a healthcare provider or cannot get the medication, assist the contact in obtaining healthcare and/or medication. [Federally Qualified Health Centers](#) (FQHC) serve the uninsured as well as patients with Medicaid, NJ FamilyCare, Medicare, and private insurance. Educate close contacts about meningococcal disease

and advise them to contact their healthcare provider immediately if symptoms of meningococcal disease should occur. Self-observation for symptoms should go on for 10 days from last exposure to the index patient.

A [close contact](#) is defined as follows:

- All members of the patient's household, especially young children
 - [Healthcare](#) and emergency medical service workers who may have been exposed to the patient's oral/nasal secretions through unprotected mouth-to-mouth resuscitation, intubation, or suctioning
 - Childcare or preschool attendees who were in the classroom with the patient in the 7 days prior to onset. Classmates in kindergarten or above are generally not considered close contacts
 - Persons who may have had contact with the patient's oral secretions through kissing or sharing food, drink, or eating utensils in the 7 days before onset
 - Persons who ate or slept in the same dwelling as the patient in the 7 days before onset
 - Airline passengers seated directly next to the index case during flights lasting >8 hours (gate to gate) OR within one seat in any direction from an index case on flights of any duration if the index case was coughing or vomiting during flight (See section 5C below for more information)
- iii) Prophylaxis should be administered as soon as possible, ideally less than 24 hours after identification of the index patient. See more information in Section 5B.
- Conversely, chemoprophylaxis administered more than 14 days after exposure to the index patient is probably of limited

4. Disease Control Measures

Institution of disease control measures is an integral part of case investigation. It is the Health Officer's responsibility to understand and institute the control guidelines listed below in section 5, "Controlling Further Spread".

5. Document case investigation in CDRSS

The local Health Officer must immediately report the case to NJDOH. After notification to NJDOH, it is the Health Officer's responsibility to ensure the case is entered into CDRSS and investigated. Use the following guidelines to accurately record all case information into CDRSS:

- demographic information – at minimum, document/verify the patient's name, date of birth, sex, race/ethnicity, home address, and telephone number(s).
- clinical information, including:
 - illness onset date,
 - admission and discharge dates (when available)
 - signs/symptoms,
 - treatment (antibiotics only related to treating *N. men*),

- Meningococcal vaccine dates, MenB & MenACWY (via NJIIS, PMD, patient/parent/school record)
- mortality (was patient alive upon discharge?)
- laboratory data, including:
 - specimen collection date,
 - specimen type (verify collected from normally sterile site),
 - specimen tests results,
 - date and method isolate will be sent to PHEL for serogrouping.
- epidemiologic information, including:
 - risk factors,
 - Meningococcal Questions Disease Specific Questionnaire:
 - Is the case homeless? If yes, in the 10 days prior to illness onset, did the case stay in an emergency shelter, transitional housing program, or safe haven?
 - Did the patient or close contacts travel in the month prior to disease onset?
 - Who traveled? Case, contact (specify relationship), or both
 - Location (city/country)
 - Return date to the United States
 - For all cases 15-24 years old: Are they a college or university student? If yes:
 - What class year? (Freshman, Sophomore, Junior, Senior, Graduate Student)
 - Living situation? (on or off campus; dorm or apartment or house, etc)
 - Do they participate in Greek life (students who define themselves as members of a Greek organization)?
 - Has the patient taken any [complement inhibitor](#) at the time of disease or up to one year prior to disease onset? Specify the name of the complement inhibitor. Below is an approved list, not necessarily exhaustive as new complement inhibitors are approved:
 - Eculizumab/Soliris
 - Ravulizumab/Ultomiris
 - Pozelimab/Veopoz
 - Avacincaptad pegol/Izervay
 - Zilucoplan/Zilbrysq
 - Avacopan/Tavneos
 - Pegcetacoplan/Empaveli
 - Pegcetacoplan injection/Syfovre
 - Iptacopan/Fabhalta
 - Cinryze
 - Berinert
 - Ruconest
 - For all cases, HIV Status at or after the time of meningococcal disease onset:
 - If known to be HIV positive, select HIV positive

- If unknown, inquire with facility whether HIV test was performed during current hospitalization.
- Please select 'HIV negative' ONLY if you have verified that the patient was tested and found to be HIV-negative during this investigation.
- For male cases, 16 years of age and older: Sex of sex partners - During the past 12 months, has the patient had sex with only males, only females, or with both males and females? Or has he not been sexually active in the last 12 months?
- [industry and occupation](#)
 - add employer name and address and click GEOCODE.
 - If unknown, enter 'Unknown' or 'Unwilling to provide' for both
 - add current occupation (what's the person's job?) and current industry (what does the company make or do?) then click SUBMIT
 - If the person does not work, enter occupation as: 'retired', 'unemployed', 'homemaker', 'volunteer', 'student', 'child', or 'did not work'. And enter 'none' for industry.
 - If unknown, enter 'unknown' for occupation and industry
- contact tracing – document whether case has any exposed close contacts and whether the contacts have been referred for/received prophylaxis.

*Note: additional case information may be requested by the NJDOH Subject Matter Expert (SME).

See section 5C, below, and contact NJDOH Communicable Disease Service for guidance in managing special situations (e.g., epidemiological link to another confirmed case, air traveler, childcare attendee, residents of group homes).

5 CONTROLLING FURTHER SPREAD

A. Isolation and Quarantine Requirements (N.J.A.C. 8:57-1)

1. Minimum period of isolation of patient

In addition to standard precautions, droplet precautions are recommended for 24 hours after the initiation of appropriate antibiotic therapy.

2. Minimum period of quarantine of contacts

None. Antibiotic prophylaxis (when indicated) and personal surveillance for at least 10 days from last exposure to the patient.

B. Prophylaxis for Contacts of Index Case

1. Close contacts of the index patient should be identified and referred to a healthcare provider for antibiotic prophylaxis (regardless of vaccination status). Refer to section 4B3, above, for close contact definition

Additionally, they should be advised to contact their healthcare provider immediately if fever or other symptoms of meningococcal disease should occur.

2. Antibiotic prophylaxis should be administered as soon as possible, ideally less than 24 hours after identification of the index patient

Conversely, chemoprophylaxis administered more than 14 days after exposure to the index patient is probably of limited or no value. Refer to the table below for chemoprophylaxis recommendations.

Recommended Chemoprophylaxis Regimens for Meningococcal Disease Contacts			
Drug	Age of Contact	Dosage	Route & Duration
Rifampin^{a, b}	Infants aged < 1 month	5 mg/kg body weight q12h	Orally x 2 days
	≥ 1 month	10 mg/kg body weight q12h (max 600 mg per dose)	Orally x 2 days
Ceftriaxone	< 15 years	125 mg	Single IM dose
	≥ 15 years	250 mg	Single IM dose
Ciprofloxacin^a	≥ 1 month	20 mg/kg body weight (maximum 500 mg)	Single oral dose
Azithromycin^c		10 mg/kg body weight (maximum 500 mg)	Single oral dose

^a Not recommended for use in pregnant women.

^b Can interfere with the efficacy of oral contraception and some seizure anticoagulant medications. May stain body fluids red and can stain soft contact lenses.

^c Not recommended routinely. Equivalent to rifampin for eradication of N. meningitidis from nasopharynx in one study.

3. Chemoprophylaxis is generally not recommended for asymptomatic nasopharyngeal carriers of N. meningitidis because studies have not proven efficacy of eradication of organism for longer than a few weeks

The decision should be made by the healthcare provider, weighing benefit against potential for development of microbial resistance.

4. A diagnosis of “meningitis” can often cause anxiety and overreaction in a school, workplace, or community setting

Persons who are not close contacts may demand prophylaxis and/or may undertake extreme and unnecessary disinfection measures. Health education and risk communication strategies should be employed to help casual contacts deal with the case in an appropriate way. A sample notification letter is available and intended to be used in consultation with local or state health department staff. Although an informational letter may calm fears, it can also generate anxiety. Before issuing a letter, please consult the NJDOH Communicable Disease Service for assistance. The number to call is 609.826.5964 during business hours or 609.392.2020 outside of business hours.

C. Managing special situations

1. Childcare centers, preschools and schools

While the risk of transmission in these settings remains relatively low, prophylaxis for all attendees in the patient's childcare or preschool class is recommended. This is because physical interaction between young children is often very close.

Prophylaxis is not recommended for classmates of a patient in kindergarten or above, since school-aged children usually have a more defined group of close contacts. Surveillance for additional cases of disease should continue at the facility for at least 10 days after the onset of the case. If one or more additional cases occur, contact NJDOH Communicable Disease Service immediately for advice on outbreak control measures.

2. Community residential program

If a case of meningococcal disease occurs in a residential program, prophylaxis is recommended for close contacts of the patient (as defined above in Section 4B3). Activities at the facility should be assessed to determine the level of interaction between residents. The facility may be considered a household setting and require prophylaxis of all residents, or the prophylaxis may be more targeted. Contact NJDOH Communicable Disease Service for assistance with a case of invasive meningococcal disease in a residential program. In addition, surveillance for new cases of disease in the facility should continue for at least 10 days after the onset of the first case. If one or more additional cases occur, contact Communicable Disease Service immediately for advice on outbreak control measures.

3. Air traveler

Airplanes are suitable environments for the spread of *N. meningitidis*. Prophylaxis is recommended for anyone seated directly next to an index case on a flight lasting more than 8 hours (gate to gate), or for any passengers seated within one seat in any direction from an index case on a flight of any duration if the index case was coughing or vomiting. Contact NJDOH Communicable Disease Service at 609.826.5964 during normal business hours or 609.392.2020 (nights/weekends/holidays) for assistance with a case of meningococcal disease in an air traveler. Information requested will include:

- dates of travel
- airline
- flight number(s)
- seat number(s)
- arrival and departure airport location(s)
- whether case was coughing or vomiting during flight

NJDOH Communicable Disease Service staff are responsible for notifying the CDC Division of Global Migration Health to obtain the passenger manifest. Local health departments in the patient's area of residence should be responsible for contacting traveler contacts. NJDOH Communicable Disease Service will notify the appropriate state health department when contacts live outside of New Jersey. The CDC Division of Global Migration Health can assist in notifying foreign nationals temporarily visiting the United States or those in the passenger's home country.

4. Reported incidence is higher than usual/outbreak suspected

In New Jersey, cases of meningococcal disease are almost always sporadic. If the number of reported cases in a setting or town/community is higher than usual, or if an outbreak is suspected, please contact NJDOH Communicable Disease Service at 609.826.5964 immediately. This situation may warrant an investigation of the clustered cases to determine a course of action to prevent further cases. NJDOH Communicable Disease Service staff can perform surveillance for clusters of illness that may cross several jurisdictions and therefore be difficult to identify at a local level.

D. Preventive measures

1. Personal preventive measures/education

To prevent additional cases:

- Ensure appropriate chemoprophylaxis for close contacts of the index patient.
- Advise close contacts of signs and symptoms of illness and to contact a healthcare provider immediately if they experience any symptoms compatible with invasive meningococcal disease.
- Provide close contacts with meningococcal disease fact sheet from [NJDOH](#), the CDC, or other reliable source.

To avoid future exposures, advise individuals to:

- Practice good hygiene and hand washing.
- Avoid sharing food, beverages, cigarettes, or eating utensils.
- Consider immunization in certain circumstances (see below).

2. Immunization

As of January 2025, there are 3 types of meningococcal vaccines available in the United States:

- Meningococcal conjugate or MenACWY vaccines (Menveo® and MenQuadfi®)
- Serogroup B meningococcal or MenB vaccines (Bexsero® and Trumenba®)
- Pentavalent meningococcal or MenABCWY vaccine (Penbraya™)

Summaries of meningococcal vaccine recommendations from CDC's Advisory Committee on Immunization Practices (ACIP) are available [here](#). For the full text of the recommendations, see [Meningococcal ACIP Vaccine Recommendations](#).

Additional Information

NJDOH Meningococcal Invasive Disease [website](#)

- [Facts for Health Professionals](#)

CDC meningococcal disease [website](#)

- *Meningococcal Vaccine Information Statements:*
 - MenACWY: <http://www.cdc.gov/vaccines/hcp/vis/vis-statements/mening.html>
 - MenB: <https://www.cdc.gov/vaccines/hcp/vis/vis-statements/mening-serogroup.html>

References

- American Academy of Pediatrics. MENINGOCOCCAL INFECTIONS. In: Kimberlin DW, Banerjee R, Barnett ED, Lynfield R, Sawyer MH, eds. [Red Book: 2024 Report of the Committee on Infectious Diseases](#). American Academy of Pediatrics; 2024: 585-599.
- Bilukha OO, Rosenstein N. Prevention and control of meningococcal disease. Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR Recomm Rep* 2005;54(No. RR-7).
- Centers for Disease Control and Prevention. Definitions of Symptoms for Reportable Illnesses. Atlanta, GA: Page last reviewed: 05/24/2024. Last accessed: 01/15/2025. Available at: <https://www.cdc.gov/port-health/php/definitions-symptoms-reportable-illness/>
- Centers for Disease Control and Prevention. Epidemiology and Prevention of Vaccine- Preventable Diseases. Hall E., Wodi A.P., Hamborsky J., et al., eds. 14th ed. Washington, D.C.: Public Health Foundation, 2021. <https://www.cdc.gov/pinkbook/hcp/table-of-contents/chapter-14-meningococcal-disease.html> Page last reviewed: 04/25/2024 Last accessed: 01/15/2025.
- Centers for Disease Control and Prevention. Exposure to patients with meningococcal disease on aircraft—United States, 1999–2001. *MMWR Morb Mortal Wkly Rep*. 2001;June 15;50(23);485-489.
- Centers for Disease Control and Prevention, National Center for Immunization and Respiratory Diseases. Manual for the Surveillance of Vaccine-Preventable Diseases – Chapter 8: Meningococcal disease. <https://www.cdc.gov/surv-manual/php/table-of-contents/chapter-8-meningococcal-disease.html> Page last reviewed: 10/30/2024; Last accessed: 01/15/2025.
- Centers for Disease Control and Prevention. Updated recommendations for use of meningococcal conjugate vaccines—Advisory Committee on Immunization Practices (ACIP), 2010. *MMWR Morb Mortal Wkly Rep*. 2011 Jan 28;60(3):72–6.
- Heymann DL, ed. Control of Communicable Diseases Manual. 20th ed. Washington, DC: American Public Health Association; 2015.
- Mbaeyi SA, Bozio CH, Duffy J, et al. Meningococcal Vaccination: Recommendations of the Advisory Committee on Immunization Practices, United States, 2020. *MMWR Recomm Rep* 2020;69(No. RR-9):1–41. DOI: https://www.cdc.gov/mmwr/volumes/69/rr/rr6909a1.htm?s_cid=rr6909a1_w
- Berry I, Rubis AB, Howie RL, et al. Selection of Antibiotics as Prophylaxis for Close Contacts of Patients with Meningococcal Disease in Areas with Ciprofloxacin Resistance — United States, 2024. *MMWR Morb Mortal Wkly Rep* 2024;73:99–103. DOI: <http://dx.doi.org/10.15585/mmwr.mm7305a2>