

Meningococcal Infection, Invasive

Neisseria meningitidis

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 6, “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:

<http://www.state.nj.us/health/lh/community/index.shtml#1>

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.



February 2017



1 THE DISEASE AND ITS EPIDEMIOLOGY

A. 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, five are clinically relevant, being responsible for nearly all disease worldwide (A, B, C, Y, and W). Currently, serogroups B, C, and Y cause the majority of United States infections; serogroup A is extremely rare in the United States and W-135 causes a very small proportion of infections. However, serogroup distribution has changed over time. Serogroup Y caused only 2% of United States cases in the early 1990s but 37% of cases from 1997 to 2002. Serogroup distribution also varies by age. In the United States, serogroup B is the most common serogroup in infants, serogroup C is most common in adolescents and young adults, and serogroup Y causes the majority of cases in those aged 65 years and older. Similar fluctuations in serogroups are seen worldwide.

B. Clinical description

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 rash, 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.

C. Reservoirs

Humans are the only known reservoir of *N. meningitidis*.

D. 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. 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 15% 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.

E. Incubation period

The incubation period of meningococcal disease is usually less than 4 days, with a range of 1 to 10 days.

F. 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.

G. Epidemiology

N. meningitidis typically colonizes the nose and throat of 5% to 15% 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.

The rate of meningococcal disease in the United States has varied between 0.9 and 1.5 cases per 100,000 persons for four decades. In New Jersey, approximately 35 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. Rates of meningococcal disease are highest in infancy with a second spike in incidence in adolescence, with a peak at around 18 to 21 years of age.

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, and persons with deficiencies in the terminal common complement pathway. 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.

2 CASE DEFINITION

N. meningitidis cases are reported by states to CDC through the National Notifiable Diseases Surveillance System (NNDSS). The New Jersey Department of Health (NJDOH), Vaccine Preventable Disease Program follows the most current case definition as published on the CDC NNDSS website. For the most recent case definition please visit:

<http://wwwn.cdc.gov/NNDSS/script/conditionsummary.aspx?CondID=107>

1. Clinical criteria

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

2. Laboratory criteria for diagnosis

- Gram-negative diplococci, not yet identified, isolated from a normally sterile body site (e.g., blood or CSF)
- 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 (e.g., blood or CSF), using a validated polymerase chain reaction (PCR) assay; or
- Isolation of *N. meningitidis*
 - From a normally sterile body site (e.g., blood or CSF, or less commonly, synovial, pleural, or pericardial fluid); or
 - From purpuric lesions

3. Case classification (as of 2015)

SUSPECTED

- 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 (e.g., blood or CSF)

PROBABLE

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

CONFIRMED

- Detection of *N. meningitidis* – specific nucleic acid in a specimen obtained from a normally sterile body site (e.g., blood or CSF), using a validated polymerase chain reaction (PCR) assay; or
- Isolation of *N. meningitidis*
 - From a normally sterile body site (e.g., blood or CSF, or less commonly, synovial, pleural, or pericardial fluid); or
 - From purpuric lesions.

NOTE: Only invasive infections with *N. meningitidis* are reportable and require a public health response. Up to 15% of persons are asymptomatic, transient nasopharyngeal carriers of *N. meningitidis* strains that are largely nonpathogenic. Therefore, a positive culture or PCR test in a specimen from throat, sputum, or skin lesion would not constitute an invasive (reportable) case.

3 LABORATORY TESTING AVAILABLE

Laboratory tests for clinical/diagnostic purposes are the same as those for surveillance and reporting. These are culture, antigen testing, PCR, and gram stain. The Public Health and Environmental Laboratories (PHEL) will confirm and serogroup isolates of *N. meningitidis*. If an isolate is not available (due to no culture growth of the organism) but a specimen remains from a positive PCR result for *N. meningitidis*, special arrangements can be made to obtain serogroup testing on those specimens. Serogrouping aids in public health surveillance. For more information about submitting specimens, contact PHEL at 609.530.8506.

NOTE: Per New Jersey Administrative Code (N.J.A.C. 8:57-1.7) all isolates of *N. meningitidis* must be submitted within three working days to the New Jersey Department of Health, Division of Public Health and Environmental Laboratories, Attn: Specimen Receiving, 3 Schwarzkopf Drive, Ewing, NJ 08628.

4 PURPOSE OF SURVEILLANCE AND REPORTING REQUIREMENTS

A. Purpose of surveillance and reporting

- To identify close contacts of a case and provide recommendations for appropriate preventive measures for those close contacts, thus preventing further spread of infection
- To increase understanding about the disease, its transmission, and methods of prevention
- To identify clusters or outbreaks of disease promptly, and initiate appropriate prevention and control measures
- To monitor the impact of meningococcal vaccines.

B. Laboratory reporting requirements

The New Jersey Administrative Code (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 **immediately by telephone** to the local health officer having jurisdiction over the locality

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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 Vaccine Preventable Disease Program 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. Healthcare 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 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 Vaccine Preventable Disease Program by telephone at 609.826.5964 during business hours, or 609.392.2020 after business hours and on weekends and holidays.

D. Health officer reporting and follow-up responsibilities

The New Jersey Administrative Code (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 shall **immediately notify NJDOH Vaccine Preventable Disease Program 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. Vaccine Preventable Disease Program staff will provide guidance and assistance as needed in case investigation, risk communication, contact tracing, and prophylaxis recommendations.

A telephone report must be followed up by an electronic report within 24 hours via the Internet using the confidential and secure Communicable Disease Reporting and Surveillance System (CDRSS). Refer to section 5C, below, for specific information on filing the report on CDRSS. **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 6**, "Controlling Further Spread." Case investigation and response must not be delayed by weekend, holiday, or evening schedules.

5 CASE INVESTIGATION

A. Objectives of the investigation

The primary objective of the case investigation is to ensure that close contacts of the patient are identified and referred to their healthcare provider for chemoprophylaxis to prevent further spread of illness. (See section 6B, 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. Agents and dosages for prophylaxis can be found in section 6B, below. A second objective of the case investigation is to document information obtained and actions taken. Complete documentation in CDRSS will facilitate communication between disease investigators and assist with public health surveillance.

B. Investigation guidelines

1. Verify the diagnosis

Often, reported cases of “meningitis” are ultimately found to be caused by a virus or bacteria other than *N. meningitidis*. The diagnosis can be verified by the healthcare provider’s clinical impression and/or lab findings. 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. (See section 6B, below, for prophylaxis recommendations.)

2. 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.

3. Speak with close contacts of the patient and refer them to their healthcare providers for prophylaxis

If an individual does not have a healthcare provider or cannot get the medication, assist the contact in obtaining healthcare and/or medication. 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 nursery school attendees who were in the classroom with the patient in the 7 days before onset
- 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.

4. 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. (See section 6B, below, for prophylaxis recommendations).

5. See section 6C, below, and contact NJDOH Vaccine Preventable Disease Program for guidance in managing special situations (e.g., epidemiological link to another confirmed case, air traveler, childcare attendee, residents of group homes).

C. Documentation of the investigation

1. Use the confidential and secure CDRSS to record information obtained and actions taken during the investigation. CDRSS serves as a communication tool among state, regional, and local health entities and is the repository for official records of the case investigation.

Public health nurses, disease investigators, laboratorians, Infection Control Practitioners (ICPs), epidemiologists, and others enter their findings into the system. This affords users a clear picture of the specific case, and enables investigators to make comparisons and/or linkages to other cases.

2. Accurate and complete reporting of invasive meningococcal cases is important in identifying clusters or outbreaks of disease and initiating appropriate prevention and control measures.

D. CDRSS entry

The mandatory fields in CDRSS include: disease, last name, county, municipality, gender, race, ethnicity, case status, report status.

The following table can be used as a quick reference guide to determine which CDRSS fields need to be completed for accurate and complete reporting of meningococcal cases. The “Tab” column includes the tabs which appear along the top of the CDRSS screen. The “Required Information” column provides detailed explanations of what data should be entered.

CDRSS Screen	Entry Considerations
Patient Info	Enter disease name (MENINGOCOCCAL DISEASE—no subgroup), patient demographics, illness onset date, and the date the disease was reported to the local health department. Onset date is important because it’s needed to guide the use of chemoprophylaxis in close contacts.
Addresses	Enter any alternate address (e.g., college residence, vacation home). Use the comments box in this screen to note any pertinent information about the alternate address (e.g., lives in dorm room; returns home weekends). Entering an alternate address will allow other disease investigators to access the case if it pertains to their jurisdiction.
Clinical Status	Enter physician and hospitalization information. If the patient was admitted to two or more hospitals, be sure that all are entered so the case can be accessed by all Infection Control Practitioners (ICPs) concerned. Note any antibiotic treatment because this may affect culture results. Note whether the patient had been immunized against meningococcal disease and, if yes, identify type of vaccine and dates of administration within the Immunizations section.

CDRSS Screen	Entry Considerations
Signs/Symptoms	Check appropriate boxes for signs and symptoms, and indicate onset. Make every effort to get complete information by interviewing physician, family, Infection Control Practitioners (ICPs), or others involved with the patient. Additional signs or symptoms may be added by clicking the “Add Symptom/Sign Not Listed Above” button and selecting from the dropdown menu options.
Risk Factors	Enter complete information about risk factors to facilitate study of meningococcal disease in New Jersey.
Laboratory Eval	Enter the appropriate lab tests. Note if the specimen is blood or CSF.
Contact Tracing	Use this screen to enter information about close contacts. Record the contact’s name, age, relationship to the patient, and whether or not he or she received prophylaxis. If he or she did not receive prophylaxis, explain why. Each contact may be entered separately by clicking on “FIND CONTACT BY NAME,” or a narrative note may be written in the comment box.
Case Comments	Enter general comments here if the information does not pertain to a specific topic screen or drop-down. NOTE: Select pieces of information entered in the Comments section CANNOT be automatically exported when generating reports. Therefore, whenever possible, record information about the case in the fields that have been designated to capture this information; information included in these fields CAN be automatically exported when generating reports.
Epidemiology (optional screen)	Record name and contact information of disease investigators from other agencies (e.g., CDC, out-of-state health departments). Note communications between investigators in the comments box.

CDRSS Screen	Entry Considerations
<p>Case Classification Report Status</p>	<p>Assign case status based on the case definition, not clinical diagnosis; i.e., assign “CONFIRMED” status only when blood and/or CSF are culture positive.</p> <p>DO NOT DELETE a case that was entered as meningococcal disease but then proved to be caused by a different organism. Assign “NOT A CASE” and record the reason for the change. If a new case is created for the final diagnosis, note the new CDRSS number in the comment box.</p> <p>Cases marked as “DHSS approved” cannot be edited. Call or e-mail NJDOH to have the case reopened if there is information to be added.</p>

6 CONTROLLING FURTHER SPREAD

A. Isolation and quarantine requirements (N.J.A.C. 8:57-1.11)

1. Minimum period of isolation of patient

Until 24 hours after the initiation of appropriate antibiotic therapy.

2. Minimum period of quarantine of contacts

Antibiotic prophylaxis (when indicated) and personal surveillance for at least 10 days from last exposure to the patient.

B. Protection of contacts of a case

1. Close contacts of the index patient should be identified and referred to their healthcare provider for antibiotic prophylaxis

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

2. 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 nursery school attendees who were in the classroom with the patient in the 7 days before 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.

3. 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 Antibiotic Prophylaxis Regimens for Meningococcal Disease			
Drug	Age of Contact	Dosage	Route & Duration
Rifampin*	Infants aged <1 mo	5 mg/kg body weight q12h	Orally x 2 days
	Infants aged ≥ 1 mo, and children ≤ 18 years	10 mg/kg body weight q12h (max 1200 mg per 24 h)	Orally x 2 days
	Adults ≥ 18 years	600 mg q12h	Orally x 2 days
Ciprofloxacin**	Adults ≥18 years	500 mg	Single oral dose
Ceftriaxone	< 15 years	125 mg	Single IM dose
	≥ 15 years	250 mg	Single IM dose

* Not recommended for use in pregnant women. Can interfere with the efficacy of oral contraception and some seizure anticoagulant medications. May stain body fluids red and can stain soft contact lenses.

** Not recommended for people younger than 18 years of age; use may be justified after assessment of risks and benefits for the individual patient.

4. 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.

5. 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 letter is available, 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 sending a letter out, please consult the NJDOH Vaccine Preventable Disease Program 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 children 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 Vaccine Preventable Disease Program 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 6B). 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 Vaccine Preventable Disease Program 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 Vaccine Preventable Disease Program 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 patient on a flight lasting more than 8 hours, or for any passengers who had direct contact with respiratory secretions from an index patient. Contact NJDOH Vaccine Preventable Disease Program 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. NJDOH Vaccine Preventable Disease staff are responsible for notifying the CDC quarantine station to obtain the passenger manifest. Local health departments in the patient's area of residence should be responsible for contacting traveler contacts. NJDOH Vaccine Preventable Disease Program will notify the appropriate state health department when contacts live outside of New Jersey. The CDC quarantine station 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 Vaccine Preventable Disease Program 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 Vaccine Preventable Disease Program staff can perform surveillance for clusters of illness that may cross several jurisdictions and therefore be difficult to identify at a local level.

5. Serogroup B invasive meningococcal disease

Recent outbreaks of serogroup B meningococcal (MenB) disease on college campuses highlight the challenge of controlling MenB disease. From 2008-2010, a prolonged outbreak of MenB on a university campus in Ohio led to 13 cases and one death. In 2013, two universities in New Jersey and California experienced MenB outbreaks with a combined 13 cases and one death reported.

Vaccination campaigns using Bexsero were conducted at the two universities to help control the outbreaks. In 2013, Bexsero, a vaccine against MenB, was not yet licensed in the United States, but was licensed for use in Europe, Canada, and Australia. The Food and Drug Administration's (FDA) current regulations allow the use of a drug or vaccine that is not approved in the United States to treat serious or immediately life-threatening diseases or conditions when there are no comparable or satisfactory alternative treatment options. The mechanism allowing such use is known as an expanded access Investigational New Drug Application (IND). To help contain the outbreak, the FDA approved the use of Bexsero through the IND process.

The CDC developed a document titled *Interim Guidance for Control of Serogroup B Meningococcal Disease Outbreaks in Organizational Settings*. The guidance was developed to assist decision makers to determine the need for vaccination, clarify the procedure for implementing the use of a MenB vaccine under an expanded access IND and improve timeliness of implementation of a vaccination campaign. For guidance click on the following link: <http://www.cdc.gov/meningococcal/downloads/interim-guidance.pdf>

Since October 2014, the FDA has approved two vaccines to prevent MenB disease in individuals 10 through 25 years of age. The first vaccine is Trumenba and the second is Bexsero. Before these approvals, meningococcal vaccines in the United States covered only four of the five main serogroups of *N. meningitidis* bacteria that cause meningococcal disease: A, C, Y, and W-135.

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 advise them to contact their healthcare provider immediately if they experience any symptoms compatible with invasive meningococcal disease
- Provide close contacts with a [Meningococcal Disease Fact Sheet](#) available from the NJDOH Web site, 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

Four meningococcal vaccines are currently available in the United States: Meningococcal polysaccharide vaccine (Menomune®) and meningococcal conjugate vaccines (Menactra®, Menveo®, and MenHibrix®). Meningococcal vaccines protect against most types of meningococcal disease, although they do not prevent all cases. Currently meningococcal vaccine is recommended for:

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- Children aged 11 through 18 years – primary dose at age 11-12 years with a booster dose at age 16 years
- College students living in a residence hall
- Military recruits
- Persons with functional or anatomic asplenia
- Persons with deficiencies in the terminal common complement pathway
- Microbiologists who are routinely exposed to *Neisseria meningitidis*
- Persons traveling or residing in countries in which the disease is common.

Additional Information

A *Sample Letter Regarding Exposure to Meningococcal Disease* can be accessed at http://www.state.nj.us/health/cd/meningo/documents/sample_letter.doc

Information for Health Professionals can be accessed at http://www.state.nj.us/health/cd/meningo/documents/nmen_facts.pdf

A *Meningococcal Vaccine Information Statement* can be accessed at <http://www.cdc.gov/vaccines/hcp/vis/vis-statements/mening.html>

The CDC Web site for meningococcal disease is at <http://www.cdc.gov/meningococcal/>

The CDC surveillance case definition may be found at <http://wwwn.cdc.gov/NNDSS/script/conditionsummary.aspx?CondID=107>

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