Increase in Invasive Meningococcal Disease Cases in New Jersey and the United States

Date: March 27, 2024

Public Health Message Type: ☐ Alert ☒ Advisory ☐ Update ☐ Information

Intended Audience: ☒ All public health partners ☒ Healthcare providers ☒ Infection preventionists ☒ Local health departments ☒ Schools/childcare centers ☐ ACOs ☐ Animal health professionals ☐ Other

Key Points

- Meningococcal disease, which typically presents as meningitis or meningococcemia, is a sudden-onset, life-threatening illness caused by the bacterium *Neisseria meningitidis*. Prompt antibiotic treatment can reduce morbidity and mortality among patients and antibiotic prophylaxis can prevent secondary disease in close contacts.
- Cases of meningococcal disease in the United States (US) have increased sharply since 2021 and now exceed pre-pandemic levels. In 2023, 415 confirmed and probable meningococcal disease cases were reported in the US (preliminary data); this is the largest number of US cases reported since 2014. In many jurisdictions, the increase is attributable to NmY ST-1466.
- *N. meningitidis* isolates in the US have been largely susceptible to the antibiotics recommended for treatment and prophylaxis. However, 11 meningococcal disease cases reported in the US during 2019–2020 from nine states, including NJ, had isolates containing a bla_{ROB-1} β-lactamase gene associated with penicillin resistance, as well as mutations associated with ciprofloxacin resistance. These cases represented a substantial increase in penicillin-resistant and ciprofloxacin-resistant meningococci in the US since 2013.
- Providers should consider performing antimicrobial susceptibility testing (AST) to determine susceptibility of all meningococcal isolates to penicillin before changing from empirical treatment with cefotaxime or ceftriaxone to penicillin or ampicillin. AST can also be helpful in assessing ciprofloxacin resistance which will help to inform prophylaxis recommendations.
- Providers should ensure that all persons who are eligible be immunized with the meningococcal vaccine. All adolescents should be routinely immunized with a 2-dose series. People at high risk including people living with HIV infection should be immunized.
- Cases of invasive meningococcal disease are **immediately reportable**. NJ Communicable Disease reporting requirements are available here.
    - Cases should be reported to the local health department where the patient resides. If you are unsure which local health department should be contacted, use the locator tool.

Background

Meningococcal disease refers to any illness caused by *N. meningitidis*. These illnesses are often severe, can be deadly and include infections of the lining of the brain and spinal cord (meningitis) and bloodstream. Prompt antibiotic treatment of people infected with *N. meningitidis* and prophylaxis of

close contacts of cases is critical. However, prevention of meningococcal disease by keeping up to date with recommended vaccines is the best protection.

Surveillance

Cases of meningococcal disease in the US have increased sharply since 2021 and now exceed pre-pandemic levels. In 2023, 415 confirmed and probable cases were reported in the US (preliminary data). This is the largest number of US meningococcal disease cases since 2014. Most of the increase in meningococcal disease is driven by *N. meningitidis* serogroup Y (see Figure 1). The Virginia Department of Health is responding to a statewide outbreak of meningococcal disease causes by serogroup Y.

People disproportionately infected by the increase include:

- Black people between the ages of 30 and 60 years
- Adults with HIV infection

The New Jersey Department of Health (NJDOH) Communicable Disease Service has observed a similar trend in NJ (see Figure 2). In 2023, 17 total confirmed meningococcal disease cases were reported in NJ (serogroups included: 12 Y; 3 B; 1 C; 1 unknown), including 2 deaths. This was the largest number of NJ meningococcal cases since 2013 where a total of 20 cases were reported (included an outbreak of serogroup B occurring on a college campus). As of March 27, a total of 10 cases have been reported in NJ for 2024 (serogroups included: 8 Y; 2 B), including 3 deaths.

Providers should have a heightened index of suspicion for meningococcal disease among Black persons ages 30 – 60 years and should be aware that patients with meningococcal bloodstream infection or septic arthritis may present without typical meningitis symptoms.

Antibiotic-resistant *N. meningitidis* serogroup Y

N. meningitidis isolates in the US have been largely susceptible to the antibiotics recommended for treatment and prophylaxis. However, 11 meningococcal disease cases reported in the US during 2019–2020 from nine states, including NJ, had isolates containing a bla_{ROB-1} β-lactamase gene associated with penicillin resistance, as well as mutations associated with ciprofloxacin resistance. These cases represented a substantial increase in penicillin-resistant and ciprofloxacin-resistant meningococci in the US since 2013.

Due to recent reports of ciprofloxacin-resistant, β-lactamase-producing *N. meningitidis* serogroup Y cases in the US, healthcare providers should:

- Perform antimicrobial susceptibility testing (AST) to determine susceptibility of all meningococcal isolates to penicillin before changing from empirical treatment with cefotaxime or ceftriaxone to penicillin or ampicillin.
    - Empirical therapy for suspected meningococcal disease should include an extended-spectrum cephalosporin, such as cefotaxime or ceftriaxone.
    - Treatment with penicillin or ampicillin requires susceptibility testing. Once the microbiologic diagnosis is established, definitive treatment can be continued with an extended-spectrum cephalosporin (cefotaxime or ceftriaxone). Alternatively, if susceptibility of the meningococcal isolate to penicillin is confirmed, treatment can be switched to penicillin G or ampicillin.
- Consider AST on meningococcal isolates to inform prophylaxis decisions. AST should not

delay the initiation of prophylaxis with ciprofloxacin, rifampin, or ceftriaxone. NJ DOH continues to monitor meningococcal disease cases caused by a ciprofloxacin-resistant strain in NJ and surrounding states and is not recommending alternative antibiotic regimens for prophylaxis at this time. NJ last received a report of a ciprofloxacin-resistant strain ~ 2 years ago.

Vaccination

The best way to prevent meningococcal disease is to get vaccinated. Providers should redouble efforts to ensure that all eligible persons receive meningococcal vaccine. CDC recommends meningococcal vaccination for:

- All preteens and teens
- Children at increased risk for meningococcal disease
- Adults at increased risk for meningococcal disease

Three serogroups (B, C, and Y) cause most meningococcal disease in the US and three safe and effective vaccines are available to provide protection (MenACWY, MenB, MenABCWY). The Advisory Committee on Immunization Practices recommended schedules are available at https://www.cdc.gov/vaccines/acip/recommendations.html

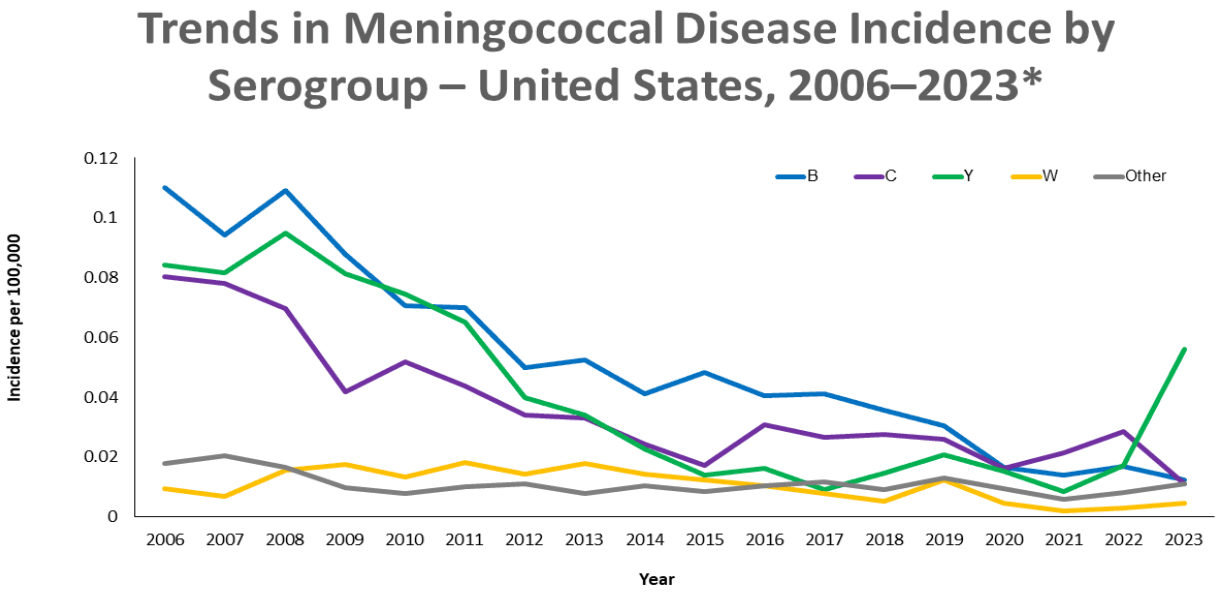
Certain medical conditions, exposures, and medications place people at higher risk for developing meningococcal disease. These conditions include:

- Functional or anatomic asplenia.
- Persistent complement deficiencies (e.g., C3, C5-9, properidin, factor H, factor D).
- HIV infection. A recent MMWR, Notes from the Field, highlighted an increase in meningococcal disease among persons with HIV. Despite being at increased risk, vaccination coverage remains low in this population with only 16.3% of HIV infected persons receiving a dose of MenACWY within 2 years of diagnosis.
- People who receive complement inhibitors (e.g., eculizumab, ravulizamab).
- Microbiologists who are routinely exposed to isolates of *N. meningitidis.*
- People identified as being at increased risk because of an outbreak of meningococcal disease.
- People traveling to a country where meningococcal disease is epidemic or highly endemic.
- First-year college students who live in residence halls.
- Military recruits.

Additional resources

- CDC Meningococcal Disease Website
- NJDOH Meningococcal Disease Website
- *MMWR* Detection of Ciprofloxacin-Resistant, β-Lactamase–Producing Neisseria meningitidis Serogroup Y Isolates — United States, 2019–2020
- CDC Vaccines and Immunizations
- CDC Vaccine Recommendations and Guidelines of the ACIP
- New Jersey Department of Health Vaccine Preventable Disease Program, Immunization Requirements

FIGURE 1



Source: NNDSS data with additional serogroup data from Active Bacterial Core surveillance (ABCs) and state health departments
*2022 and 2023 data are preliminary

1

FIGURE 2