

***Neisseria meningitidis* Update**

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Meningococcal disease is a severe, sometimes deadly infection of the lining of the brain and spinal cord and bloodstream caused by the bacterium *Neisseria meningitidis*. Prompt empiric antibiotic treatment can reduce morbidity and mortality among patients, and antibiotic prophylaxis can prevent secondary disease in close contacts. *Neisseria meningitidis* has six serogroups: A, B, C, W, X, Y which have historically been susceptible to the recommended antibiotics used for treatment.

Recently there have been detections of serogroup Y isolates that are resistant to both penicillin and ciprofloxacin. During 2019–20, 11 meningococcal isolates from U.S. patients contained a blaROB-1 β -lactamase gene associated with penicillin resistance and further mutations associated with ciprofloxacin resistance. An additional 22 cases reported during 2013–20 contained the blaROB-1 gene to incur penicillin resistance but did not have mutations associated with ciprofloxacin resistance. Ceftriaxone and cefotaxime are the recommended first-line agents for empiric bacterial meningitis treatment and can continue to be used as these antimicrobial agents. However, healthcare providers should ascertain *Neisseria meningitidis* isolates susceptibility to penicillin before using penicillin or ampicillin for treatment.

All invasive *Neisseria meningitidis* isolates identified in Nebraska should be submitted to the Nebraska Public Health Laboratory (NPHL) for serogrouping and antibiotic susceptibility testing. In addition, NPHL also collaborates with the CDC for additional molecular testing to monitor for national trends involving meningococcal disease. To date, no serogroup Y isolates have been identified in Nebraska and no resistance to penicillin and ciprofloxacin have been confirmed for *N. meningitidis* isolates. For further information see the CDC MMWR titled “Detection of

Ciprofloxacin-Resistant, β -Lactamase–Producing *Neisseria meningitidis* Serogroup Y Isolates —
United States, 2019–2020” at <https://www.cdc.gov/mmwr/volumes/69/wr/mm6924a2.htm>.