



BOSTON PUBLIC HEALTH COMMISSION
Communicable Disease Control Division
1010 Massachusetts Avenue · Boston, MA 02118
Phone: (617) 534-5611 · Fax: (617) 534-5905

Health Alert: Meningococcal Disease in the Boston Homeless Community

Summary: The Boston Public Health Commission (BPHC) has received reports of three confirmed cases of meningococcal disease in the Boston adult homeless community since the end of January; each presented with meningococemia. One case developed fulminant disease and died. Close contacts of each case have been chemoprophylaxed. Given the number of cases, and the temporal and geographic clustering of cases in a distinct population cohort, vaccine targeting the *Boston homeless community* is currently being offered by Boston Health Care for the Homeless Program and other community partners in conjunction with BPHC. Serogrouping was performed on all three isolates. Two isolates were determined to be serogroup C, and additional testing showed they are genetically similar. The third isolate is serogroup Y, with genetic characterization pending. Menactra (which covers serogroups A, C, W-135, and Y) will be used for vaccination.

Healthcare providers, particularly emergency department clinicians, should consider meningococcal disease in the differential diagnosis of any *homeless individual residing in Boston* who presents with a clinically compatible illness. Healthcare providers in Boston are reminded that all cases of suspected or confirmed meningococcal disease must be *immediately* reported to the Boston Public Health Commission at (617) 534-5611. Additionally, all meningococcal isolates must be submitted to the Hinton State Laboratory Institute for serogrouping and genetic characterization.

EPIDEMIOLOGY: Between 2011 and 2015, twelve cases of meningococcal disease were identified in Boston residents (range 1-5 cases/year). They were sporadic, with no clustering noted by age, gender, or geographical location. In the U.S., outbreaks of invasive meningococcal disease occur most frequently in crowded conditions (e.g., military bases, college dormitories). Cases of invasive meningococcal disease in the U.S. are most often caused by serogroups B, C, and Y (each accounting for approximately 30% of reported cases), although other serogroups are seen sporadically. Epidemics of invasive disease are most commonly associated with serogroups B, C and Y.

The incubation period is usually 2–4 days, but it can range from 1–10 days. Cases remain infectious as long as meningococci are present in their oral secretions. Meningococci usually disappear from the nasopharynx within 24 hours after initiation of effective antibiotic treatment. The overall case-fatality rate, including in cases who are treated with appropriate antimicrobials, is 10-15%. Long term sequelae including hearing loss, digit or limb amputations, and neurologic disability occur in 11-19% of survivors.

SYMPTOMS AND DIAGNOSIS: All three cases presented with meningococemia. Invasive infection can result in meningitis, bacteremia, or both. Presentation with pneumonia is typically associated with serogroup Y. Onset may be nonspecific but abrupt, with fever, chills, malaise, limb pain, and a rash that can be macular, maculopapular, papular, petechial, or purpuric. Fulminant disease may present with purpura, disseminated intravascular coagulation, limb ischemia, pulmonary edema, shock, and coma. **Healthcare providers should consider meningococcal disease in the differential diagnosis of any homeless resident residing in Boston who presents with signs of meningococcal disease.** A confirmed diagnosis is made by identifying meningococci from any normally sterile site. Starting

antimicrobial treatment before collection of any appropriate specimen (e.g., blood or CSF) may decrease the sensitivity of culture.

PREVENTION: Vaccination against meningococcal disease is routinely recommended for specific subgroups (e.g., college students). It is also indicated in well defined settings and subgroups when a cluster has been identified and the associated serogroup is included in an available vaccine.

REPORTING: City and State regulations require that healthcare providers and institutions report *immediately* any clinically suspected or confirmed case of meningococcal disease diagnosed in Boston to BPHC. *All meningococcal isolates must be submitted to the Hinton State Laboratory Institute for serogrouping and genetic characterization.*

Reporting forms for healthcare providers and for laboratories are available at: <http://www.bphc.org/cdc>

Communicable Disease Control Division
Boston Public Health Commission
1010 Massachusetts Avenue
Boston, MA 02118
Tel. (617) 534-5611, Fax. (617) 534-5905
www.bphc.org/cdc