



BOSTON PUBLIC HEALTH COMMISSION
Communicable Disease Control Division
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UPDATE: Meningococcal Disease in the Boston Adult Homeless Community

Summary: The Boston Public Health Commission (BPHC) has received reports of five confirmed cases of meningococcal disease in the Boston adult homeless community since the end of January. Four cases presented with meningococemia; one presented with meningitis. Two cases developed fulminant disease and died. Close contacts of each case have been chemoprophylaxed. Serogrouping has been completed on four isolates; information on the fifth isolate is pending. Two isolates were determined to be serogroup C, and additional testing showed that they were genetically similar. Two isolates were serogroup Y. Given the number of cases, and the temporal and geographic clustering of cases in a distinct population cohort, BPHC continues to recommend vaccination against meningococcal disease for those in the Boston adult homeless community. Since February 17, 2016, the Boston Health Care for the Homeless Program (BHCHP) has vaccinated over 2,400 individuals at risk. Menactra (which covers serogroups A, C, W-135, and Y) is being used for vaccination.

Healthcare providers, particularly emergency department clinicians, should consider meningococcal disease in the differential diagnosis of any *adult homeless individual* 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 BPHC 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, a total of 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.

Since the end of January 2016, five cases of invasive meningococcal infection have been diagnosed in individuals from Boston's adult homeless community. Four of the cases were male; ages ranged from 20 to 60 years. Onset dates were from January 28, 2016 to March 4, 2016. Four cases presented with meningococemia, and the fifth with meningitis. Despite appropriate antimicrobial and supportive treatment, two cases died. Four cases were not vaccinated; one case was vaccinated one day prior to illness onset.

The incubation period for meningococcal illness 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: 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 adult homeless individual who presents with signs of meningococcal disease. A confirmed diagnosis is made by identifying meningococci from any normally sterile body site. Starting antimicrobial treatment before collection of any appropriate specimen (e.g., blood or CSF) may decrease the sensitivity of culture.

PREVENTION: BPHC is recommending that adults who stay in the adult Boston shelters or participate in day programs for the adult homeless as well as staff of those agencies with direct client contact be vaccinated with a meningococcal conjugate vaccine. Since February 17, 2016, BHCHP has vaccinated over 2,400 individuals with Menactra in response to this cluster. Although no meningococcal conjugate vaccine is currently licensed for use in those over age 55, based on recommendations from the Centers for Disease Control and Prevention (CDC) and the Massachusetts Department of Public Health (MDPH), BPHC is recommending that those over age 55 who are at risk be vaccinated with Menactra.

REPORTING: BHCHP is continuing to work with shelter partners for early identification and reporting of cases. 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>

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