DC HEALTH
GOVERNMENT OF THE DISTRICT OF COLUMBIA

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## Health Notice for District of Columbia Health Care Providers

# Meningococcal Disease Cases Linked to Travel to the Kingdom of Saudi Arabia (KSA): Ensure Pilgrims are Current on Meningococcal Vaccination

## SUMMARY

The Health Advisory issued by the Centers for Disease Control and Prevention (CDC) through the Health Alert Network (HAN) aims to alert healthcare providers to cases of meningococcal disease linked to Umrah travel to the Kingdom of Saudi Arabia (KSA). Umrah is a year-round Islamic pilgrimage to Mecca, while Hajj is an annual pilgrimage taking place June 14–19, 2024. As of April 2024, there have been 12 reported cases of meningococcal disease associated with travel to KSA for Umrah. The cases were reported to national public health agencies. There are five cases in the United States (U.S.), four in France, and three in the United Kingdom[1]. Out of these cases, two cases were in children aged ≤18 years, four cases were in adults aged 18–44 years, four cases were in adults aged 45–64 years, and two cases were in adults aged 65 years or older. Ten cases were in patients who traveled to KSA, and two were in patients who had close contact with travelers to KSA. Additionally, ten cases were caused by *Neisseria meningitidis* serogroup W (NmW), one U.S. case was caused by serogroup C (NmC), and one U.S. case has an unknown serogroup. Of nine patients with known vaccination status, all were unvaccinated. The isolates from one U.S. NmC case and two NmW cases (one U.S. and one France) were resistant to ciprofloxacin[1]. Based on whole-genome sequencing, the remaining eight NmW isolates were all sensitive to penicillin and ciprofloxacin. As of May 20, 2024, the DC Department of Health (DC Health) confirmed one case of meningococcal disease with an unknown serogroup, and the patient had not traveled outside the United States. Healthcare providers are strongly encouraged to maintain awareness of *Neisseria meningitis*, serogroup C, W, and Y cases and promptly report suspected and confirmed cases to DC Health. Healthcare providers should:

1. Maintain a heightened suspicion for meningococcal disease, in anyone presenting with symptoms of meningococcal disease after recent travel to KSA for Hajj or Umrah pilgrimage.
2. Preferentially consider using rifampin, ceftriaxone, or azithromycin instead of ciprofloxacin for chemoprophylaxis of close contacts of meningococcal disease cases associated with travel to KSA.

## BACKGROUND

Meningococcal disease is a serious and potentially life-threatening infection (case-fatality rate of 10-15%) caused by the bacterium *Neisseria meningitidis*[1,5]. The serogroups A, B, C, W, X, and Y are the primary causes of meningococcal disease worldwide. The four serogroups B, C, W, and Y circulate in the United States. Humans are the only natural reservoir for *N. meningitidis*[1]. Meningococcal bacteria can be transmitted from person-to-person, by asymptomatic carriers or persons with invasive disease, through direct contact with large droplets of respiratory secretions or saliva.

Meningococcal disease is a sudden-onset, life-threatening illness usually presenting as meningitis or meningococcemia. Typical symptoms of meningitis include fever, headache, and stiff neck, while symptoms

of meningococcemia commonly include fever, chills, fatigue, vomiting, diarrhea, cold extremities, and severe body pains, or, in later stages, a petechial or purpuric rash (purpura fulminans) often associated with hypotension, shock, acute adrenal hemorrhage, and multiorgan failure[1,2,5]. The initial symptoms may be nonspecific, they worsen rapidly with the disease becoming life-threatening within hours. Immediate antibiotic treatment is crucial, as most patients with meningococcal meningitis caused by *N. meningitidis* can fully recover with prompt antibiotic therapy[1,2,5]. Blood and cerebrospinal fluid (CSF) cultures are needed for identifying *N. meningitidis* in patients with suspected meningococcal disease. Healthcare providers should initiate treatment without waiting for laboratory results.

The most recent global outbreak of meningococcal disease associated with travel to KSA for Hajj was in 2000–2001 and was mainly caused by NmW[1]. Since 2002, KSA has required that all travelers aged one year or older performing Hajj or Umrah provide documentation of either a) a MenACWY polysaccharide vaccine (MPSV4 is no longer available in the United States) within the last 3 years administered at least 10 days prior to arrival, or b) a MenACWY conjugate vaccine within the last 5 years administered at least 10 days before arrival[1]. This requirement aligns with ACIP recommendations for the vaccination of U.S. travelers to endemic areas who received their last dose 3–5 years previously (depending on the age at which the most recent dose was received)[1]. However, meningococcal vaccination coverage among Umrah travelers is known to be incomplete.

In the U.S., to prevent sporadic meningococcal disease, close contacts of infected persons should receive antibiotic chemoprophylaxis as soon as possible after exposure, regardless of immunization status, ideally within 24 hours of identifying the index patient[1,4]. Conversely, chemoprophylaxis administered more than 14 days after the onset of illness in the index patient is likely ineffective. Ciprofloxacin, rifampin, and ceftriaxone are the first-line antibiotics recommended for use as chemoprophylaxis and are 90% to 95% effective in reducing the nasopharyngeal carriage of *N. meningitidis*. However, ciprofloxacin-resistant strains of *N. meningitidis* have been emerging in the United States and globally[1]. Of the 11 global cases linked to travel to KSA with antimicrobial sensitivity results, three (27%) were caused by ciprofloxacin-resistant strains[1]. As a result, rifampin, ceftriaxone, or azithromycin should be considered as preferred options for chemoprophylaxis for close contacts in the U.S. of meningococcal disease cases associated with travel to KSA, instead of ciprofloxacin.

## RECOMMENDATIONS FOR HEALTHCARE PROVIDERS

This health notice aims to alert healthcare providers to meningococcal disease cases linked to Umrah travel to Saudi Arabia. DC Health will continue submitting all meningococcal isolates to the CDC for whole-genome sequencing and monitoring antimicrobial resistance. In the U.S., quadrivalent meningococcal (MenACWY) conjugate vaccination is routinely recommended for adolescents[3,6] and travelers to countries where meningococcal disease is hyperendemic or epidemic[1]. A booster dose of MenACWY is advised if the last dose was administered 3–5 or more years ago, depending on the age at the most recent dose[1,3,6]. In addition, all Hajj and Umrah pilgrims aged one year and older are required by KSA to receive a quadrivalent meningococcal vaccine. It is recommended that clinicians[1]:

- Collaborate with patients planning to travel for Hajj or Umrah to ensure that individuals aged one year or older have received a MenACWY conjugate vaccine within the last 5 years, administered at least 10 days prior to their arrival in KSA.

- Recommend vaccination with the MenACWY conjugate vaccine for people considering travel to KSA to perform Hajj or Umrah (pilgrims) in addition to routine meningococcal vaccination for adolescents and other people at increased meningococcal disease risk.
- Be aware that patients with invasive meningococcal disease may present with a bloodstream infection or septic arthritis and without symptoms typical of meningitis (e.g., headache, stiff neck).
- Maintain a heightened index of suspicion for meningococcal disease among symptomatic people who have recently been in KSA and among close contacts of people who have recently been in KSA, regardless of vaccination status.
- Consider using rifampin, ceftriaxone, or azithromycin instead of ciprofloxacin as prophylaxis of close contacts of meningococcal disease cases associated with travel to KSA[1,4]. The CDC recently released implementation guidance for the preferential use of other recommended prophylaxis antibiotics in areas with multiple cases caused by ciprofloxacin-resistant strains[4].

## ADDITIONAL RESOURCES

- Clinical Information | Meningococcal Disease | CDC
- Selection of Antibiotics as Prophylaxis for Close Contacts of Patients with Meningococcal Disease in Areas with Ciprofloxacin Resistance — United States, 2024 Clinical information | Meningococcal Disease | CDC
- Meningococcal Vaccination: Information for Healthcare Professionals | CDC
- Meningococcal Disease | CDC Yellow Book 2024
- 2024 Immunization Schedules|CDC

## REPORTING REQUIREMENTS

Confirmed and suspected cases of Meningitis (*Neisseria meningitidis*) must be reported immediately (within 24 hours) by telephone at 844-493-2652 or by submitting a Notifiable Disease and Condition Case Report Form online using the DC Reporting and Surveillance Center (DCRC), which can be found on our Infectious Diseases website dchealth.dc.gov/node/143092

## REFERENCES

1. Centers for Disease Control and Prevention. (2024). Meningococcal Disease Cases Linked to Travel to the Kingdom of Saudi Arabia (KSA): Ensure Pilgrims are Current on Meningococcal Vaccination. Retrieved from https://emergency.cdc.gov/han/2024/han00508.asp
2. American Academy of Pediatrics. Summaries of infectious diseases: meningococcal infections. [Section 3]. In: Kimberlin DW, Barnett ED, Lynfield R, Sawyer MH, eds. Red book: 2021–2024 report of the Committee on Infectious Diseases. Itasca, IL: American Academy of Pediatrics; 2021:519–32.
3. Wodi AP, Murthy N, McNally V, Daley MF, Cineas S. Advisory Committee on Immunization Practices Recommended Immunization Schedule for Children and Adolescents Aged 18 Years or Younger — United States, 2024. MMWR Morbidity Mortality Weekly Report 2024; 73:6–10. DOI: http://dx.doi.org/10.15585/mmwr.mm7301a2

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5. Centers for Disease Control and Prevention. (2024). Increase in Invasive Serogroup Y Meningococcal Disease in the United States. Retrieved from https://emergency.cdc.gov/han/2024/han00505.asp
6. Mbaeyi SA, Bozio CH, Duffy J, et al. Meningococcal Vaccination: Recommendations of the Advisory Committee on Immunization Practices, United States, 2020. Morbidity and Mortality Weekly Report Recommendations and Report 2020;69(No. RR-9):1–41. DOI: http://dx.doi.org/10.15585/mmwr.rr6909a1

**Please contact the DC Health Division of Epidemiology-Disease Surveillance and Investigation at: Phone: (202) 535-1825/442-5865 (8:15 am-4:45 pm) | 844-493-2652 (after-hours calls) | Fax: (202) 442-8060 | Email: doh.epi@dc.gov**