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Emergency Preparedness and Response

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

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Summary

The Centers for Disease Control and Prevention (CDC) is issuing this Health Alert Network (HAN) Health Advisory to alert healthcare providers to cases of meningococcal disease linked to Umrah travel to the Kingdom of Saudi Arabia (KSA). Umrah is an Islamic pilgrimage to Mecca, Kingdom of Saudi Arabia, that can be performed any time in the year; the Hajj is an annual Islamic pilgrimage this year taking place June 14–19, 2024. Since April 2024, 12 cases of meningococcal disease linked to KSA travel for Umrah have been reported to national public health agencies in the United States (5 cases), France (4 cases), and the United Kingdom (3 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. Ten cases were caused by *Neisseria meningitidis* serogroup W (NmW), one U.S. case was caused by serogroup C (NmC), and the serogroup is unknown for one U.S. case. Of nine patients with known vaccination status, all were unvaccinated. The isolates from the one U.S. NmC case and two NmW cases (one U.S., one France) were resistant to ciprofloxacin; based on whole-genome sequencing, the remaining eight NmW isolates were all sensitive to penicillin and ciprofloxacin.

In the United States, quadrivalent meningococcal (MenACWY) conjugate vaccination is routinely recommended for adolescents, and also recommended for travelers to countries where meningococcal disease is hyperendemic or epidemic, including a booster dose of MenACWY if the last dose was administered 3–5 or more years previously (depending on the age at most recent dose received). In addition, all Hajj and Umrah pilgrims aged one year and older are required by KSA to receive quadrivalent meningococcal vaccine. Healthcare providers should work with their patients considering travel to perform Hajj or Umrah to ensure that those aged one year or older have received a MenACWY conjugate vaccine within the last 5 years administered at least 10 days prior to arrival in KSA. Healthcare providers should also maintain increased suspicion for meningococcal disease in anyone presenting with symptoms of meningococcal disease after recent travel to

KSA for Hajj or Umrah pilgrimage. U.S. health departments and healthcare providers should 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, caused by the bacterium *Neisseria meningitidis*, is a rare but severe illness with a case-fatality rate of 10–15%, even with appropriate antibiotic treatment. Meningococcal disease often presents as meningitis with symptoms that may include fever, headache, stiff neck, nausea, vomiting, photophobia, or altered mental status. Meningococcal disease may also present as a meningococcal bloodstream infection with symptoms that may include fever, chills, fatigue, vomiting, cold hands and feet, severe aches and pains, rapid breathing, diarrhea, or, in later stages, a petechial or dark purple rash (purpura fulminans). While initial symptoms of meningococcal disease can at first be nonspecific, they worsen rapidly and can become life-threatening within hours. Survivors may experience long-term effects such as deafness or amputations of the extremities. **Immediate antibiotic treatment for meningococcal disease is critical.** Blood and cerebrospinal fluid (CSF) cultures are indicated for patients with suspected meningococcal disease. Healthcare providers should not wait for diagnostic testing or receipt of laboratory results before initiating treatment for suspected cases of meningococcal disease.

Meningococcal disease outbreaks have occurred previously in conjunction with mass gatherings including the Hajj pilgrimage. The most recent global outbreak of meningococcal disease associated with travel to KSA for Hajj was in 2000–2001 and was primarily caused by NmW. 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 prior to arrival. This requirement aligns with ACIP recommendations for revaccination of U.S. travelers to endemic areas who received their last dose 3–5 or more years previously (depending on the age at most recent dose received). Nevertheless, meningococcal vaccination coverage among Umrah travelers is known to be incomplete.

Close contacts of people with meningococcal disease should receive antibiotic chemoprophylaxis as soon as possible after exposure, regardless of immunization status, ideally less than 24 hours after the index patient is identified. Ciprofloxacin, rifampin, and ceftriaxone are the first-line antibiotics recommended for use as chemoprophylaxis. However, ciprofloxacin-resistant strains of *N. meningitidis* have been emerging in the United States and globally. CDC recently released implementation guidance for the preferential use of other recommended prophylaxis antibiotics in areas with multiple cases caused by ciprofloxacin-resistant strains. Health departments should discontinue using ciprofloxacin as prophylaxis for close contacts when, in a catchment area during a rolling 12-month period, both a) ≥2 invasive meningococcal disease cases caused by ciprofloxacin-resistant strains have been reported, and b) cases caused by ciprofloxacin-resistant strains account for ≥20% of all reported invasive meningococcal disease cases. Though a catchment area is defined as a "single contiguous area that contains all counties reporting ciprofloxacin-resistant cases," in this circumstance, it is more appropriate to determine the catchment population based on travel history rather than geographic location at the time of diagnosis. Among the 11 global cases associated with travel to KSA that have antimicrobial sensitivity results available, 3 cases (27%) were caused by ciprofloxacin-resistant strains. Rifampin, ceftriaxone, or azithromycin should be preferentially considered instead of ciprofloxacin as prophylaxis for close contacts in the United States of meningococcal disease cases associated with travel to KSA.

Recommendations for Healthcare Providers

- Recommend vaccination with 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.
- 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.
- Immediately notify state, tribal, local, or territorial health departments about any suspected or confirmed cases of meningococcal disease in the United States.
- Preferentially consider using rifampin, ceftriaxone, or azithromycin instead of ciprofloxacin as prophylaxis for close contacts in the United States of meningococcal disease cases associated with travel in KSA.

Recommendations for Health Departments

- Preferentially consider using rifampin, ceftriaxone, or azithromycin instead of ciprofloxacin as prophylaxis for close contacts in the United States of meningococcal disease cases associated with travel in KSA.
- Consider outreach to local communities to promote meningococcal vaccination for Hajj and Umrah pilgrims to KSA.
- Collect a detailed travel history for all reported cases of meningococcal disease.
- Continue to report cases of meningococcal disease in people who have recently been in KSA, or in close contacts of people who have recently been in KSA, to CDC at meningnet@cdc.gov in addition to routine reporting through the National Notifiable Diseases Surveillance System (NNDSS).

Recommendations for the Public

- People considering travel to KSA to perform Hajj or Umrah should ensure they are current on vaccination with MenACWY vaccine as required by KSA . All travelers aged one year or older performing Hajj or Umrah should have received either a) a MenACWY polysaccharide vaccine (MPSV4, no longer available in the United States) within the last 3 years administered at least 10 days prior to arrival or b) a quadrivalent MenACWY conjugate vaccine within the last 5 years administered at least 10 days prior to arrival.
- Immediately seek medical attention if you, your child, or another close contact develops symptoms of meningococcal disease:
  - **Symptoms of meningococcal meningitis** may include fever, headache, stiff neck, nausea, vomiting, photophobia (eyes being more sensitive to light), or altered mental status (confusion).
  - **Symptoms of meningococcal bloodstream infection** may include fever and chills, fatigue, vomiting, cold hands and feet, severe aches and pains, rapid breathing, diarrhea, or, in later stages, a dark purple rash.
  - **Initial symptoms of meningococcal disease** can at first be vague, but worsen rapidly, and can become life-threatening within hours.

For More Information

Healthcare Providers

- Clinical Information | Meningococcal Disease | CDC
- Meningococcal Vaccination: Information for Healthcare Professionals | CDC
- Meningococcal Disease | CDC Yellow Book 2024

Health Departments

- Meningococcal Disease Surveillance | CDC
- Meningococcal Disease | Manual for the Surveillance of Vaccine-Preventable Diseases | CDC
- Meningococcal Disease Outbreaks and Public Health Response | CDC

Public

- Meningococcal Vaccination | CDC
- Signs and Symptoms | Meningococcal Disease | CDC
- Travelers' Health: Saudi Arabia | CDC
- Ministry of Health, Kingdom of Saudi Arabia
- Visit CDC-INFO or call 1-800-232-4636

References

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The Centers for Disease Control and Prevention (CDC) protects people's health and safety by preventing and controlling diseases and injuries; enhances health decisions by providing credible information on critical health issues; and promotes healthy living through strong partnerships with local, national and international organizations.

DEPARTMENT OF HEALTH AND HUMAN SERVICES

HAN Message Types

- **Health Alert:** Conveys the highest level of importance about a public health incident.
- **Health Advisory:** Provides important information about a public health incident.
- **Health Update:** Provides updated information about a public health incident.

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This message was distributed to state and local health officers, state and local epidemiologists, state and local laboratory directors, public information officers, HAN coordinators, and clinician organizations.

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Top of Page

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- HAN Archive By Year
- HAN Types
- Sign Up for HAN Email Updates
- HAN Jurisdictions

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