Meningococcal Disease

In Washington State, during the past decade, a total of 275 invasive meningococcal cases were reported with 17 to 43 reports per year. Of these, 255 meningococcal isolates from Washington patients with invasive infections were sero-grouped and the majority was due to serogroups B (47%), serogroup Y (29%), and serogroup C (18%). The serogroup distribution varies by age, with serogroup B causing 61% of cases in children younger than 2 years of age and meningococcal vaccine serogroups C, Y, and W135 causing 53% of meningococcal disease in those 11 years and older.

Transmission occurs through respiratory droplets or by direct contact with nasopharyngeal secretions from a colonized person – symptomatic or otherwise. Close contacts of a case (e.g., household members or child care contacts) are at increased risk of becoming colonized/infected and developing illness. The attack rate for household contacts of cases is 500–800 times HIGHER THAN the rate for the general population. Risk of disease in close contacts is highest during the 10-day period following exposure.

Examples of close contact with meningococcal patients include:

1. Direct face-to-face contact with a symptomatic case-patient during the contagious period. This includes household and immediate family members, boyfriends/girlfriends, and child care contacts (those who spend many hours together or sleep under the same roof) or who are at increased risk for contact with respiratory secretions of the case.

2. An obvious exposure that involves direct contact with respiratory, oral, or nasal secretions from a case-patient during the contagious period (e.g., a cough or sneeze in the face, sharing eating utensils, sharing water bottles, kissing, mouth-to-mouth resuscitation, or performing intubation or nasotracheal suctioning without a mask). Health care workers who have not had direct contact with the case’s nasopharyngeal secretions are not at increased risk, and prophylaxis is not indicated.

3. Close proximity for a prolonged period of time with a case-patient during the contagious period.

Resources:
- Washington State Dept. of Health Meningococcal Guidelines

On February 4th, CDHD was notified by local EMS that a patient with suspected meningitis had been transported to Confluence Health ER. EMS was concerned about exposure to the ambulance crew. This prompted an investigation by CDHD. On February 5th, CDHD was notified that the patient’s blood culture grew out Neisseria meningitidis. Subsequently, over 30 individuals required prophy for their exposure.
Chemoprophylaxis should be recommended for all household members and other persons deemed to have been exposed, regardless of their immunization status. Since contacts are at highest risk of becoming ill immediately after the onset of the case, prophylaxis should be initiated as soon as possible, ideally less than 24 hours after identification of the index patient. Chemoprophylaxis is not recommended for persons who have had only brief or casual contact with the case.

Rifampin, ciprofloxacin, and ceftriaxone are all appropriate drugs for chemoprophylaxis. They are 90–95% effective in reducing nasopharyngeal carriage of \textit{N. meningitidis}.

Rifampin is the drug of choice for most children. \textit{Rifampin is not recommended for pregnant women}. Those taking rifampin should be informed that the following side effects can occur: gastrointestinal upset, orange discoloration of urine and tears, discoloration of soft contact lenses, and decreased effectiveness of oral contraceptives.

Ciprofloxacin can be used for chemoprophylaxis of persons 18 years and older. \textit{Ciprofloxacin is not recommended for pregnant women}.

Ceftriaxone can be used for children and adults (including pregnant women) to eradicate nasopharyngeal carriage if rifampin is contraindicated.

\begin{table}[h]
\centering
\begin{tabular}{|l|l|l|l|}
\hline
\textbf{Drug} & \textbf{Age group} & \textbf{Dosage} & \textbf{Duration and route of administration} \\
\hline
\textbf{Rifampin}$\dagger$ & Children aged <1 yr & 5 mg/kg body weight every 12 hrs & 2 days \\
 & Children aged ≥1 yr & 10 mg/kg body weight every 12 hrs (max 600 mg/dose) & 2 days \\
 & Adults & 600 mg every 12 hrs & 2 days \\
\hline
\textbf{Ciprofloxacin}$\ddagger$ & Adults (≥18 yrs old) & 500 mg & Single dose \\
\textbf{Ceftriaxone} & Children aged <15 yrs & 125 mg & Single IM dose \\
 & Adults & 250 mg & Single IM dose \\
\hline
\end{tabular}
\caption{Schedule for administering chemoprophylaxis against meningococcal disease}
\end{table}

$\dagger$ Oral administration unless indicated otherwise.

$\ddagger$ Not recommended for pregnant women because it is teratogenic in laboratory animals. Because the reliability of oral contraceptives might be affected by rifampin therapy, consideration should be given to using alternative contraceptive measures while rifampin is being administered.

Not usually recommended for persons aged <18 years or for pregnant women and lactating women because it causes cartilage damage in immature laboratory animals. Can be used for chemoprophylaxis of children when no acceptable alternative therapy is available. Recent literature review identified no reports of irreversible cartilage toxicity or age-associated adverse events among children and adolescents (Source: Bernstein F, Feinman SM, Bhume JL, Moran JS. Ciprofloxacin for the treatment of uncomplicated gonococcal infection in adolescents: does the benefit outweigh the risk? Clin Infect Dis 2002;35:S191–9).

Table reproduced from: MMWR May 27, 2005 / 54(RR07);1-21
From January 1 to February 6, 2015, 121 people from 17 states and Washington DC were reported to have measles [AZ (7), CA (88), CO (1), DC (1), DE (1), IL (3), MI (1), MN (1), NE (2), NJ (1), NY (2), NV (2), OR (1), PA (1), SD (2) TX (1), UT (2), WA (4)]*. Most of these cases [103 cases (85%)] are part of a large, ongoing multi-state outbreak linked to an amusement park in California. For cases with age reported, the age of case-patients range from 10 months to 57 years (median = 16.5 years). To date, 8 (15%) case-patients were hospitalized. Of the 52 outbreak-associated cases, 55% were unvaccinated, 31% had unknown vaccination status, and 12% were vaccinated. Of the 6 cases vaccinated, 2 had received 1 dose and 4 had received 2 or more doses. Among the 28 unvaccinated cases, 5 were under age for vaccination.

The outbreak likely started from a traveler who became infected overseas with measles, then visited the amusement park while infectious. However, no source has been identified. Analysis by CDC scientists shows that the measles virus in this outbreak is identical to the virus type (genotype B3) that caused the large measles outbreak in the Philippines in 2014. However, the same virus type has been identified within the past 6 months in 14 other countries and at least 6 U.S. states not associated with the current outbreak. http://www.cdc.gov/measles/cases-outbreaks.html


Measles Cases and Outbreaks
January 1 to February 6, 2015*

121 Cases
1 Outbreak

representing 85% of reported cases this year

U.S. Measles Cases by Year

*Provisional data reported to CDC’s National Center for Immunization and Respiratory Diseases