

Oregon Public Health Division
Model Protocol for Chemoprophylaxis to Prevent Meningococcal
Disease in Contacts of Cases

Protocol:

1. Determine whether contact has had a significant exposure to an infectious case;
2. Screen for contraindications to antibiotics, and possible drug interactions;
3. Provide patient with meningococcal disease fact sheet;
4. Dispense prophylactic antibiotics as outlined on pages 2 – 3.

Signature of Health Officer

Date

Transmission of Meningococcal Disease

Transmission is by direct exposure to droplets or direct contact with discharges from the nose or throat of a colonized person—symptomatic or otherwise. Cases are probably most infectious during the 3 days prior to onset of symptoms and are considered no longer communicable 24 hours after initiation of treatment with ceftriaxone.

It is important to distinguish colonization from disease. Close contacts of cases (e.g., household members or day-care contacts) are at increased risk of becoming infected and developing illness. Risk of disease in close contacts is highest during the 7-day period following onset of illness of the case.

Those exposed 7 or more days before onset of illness in the case are not at significantly increased risk.

Who should get prophylaxis?

Persons who have had *significant* exposure to the case during the communicable period receive prophylaxis. These include:

1. All persons who have spent *at least* 4 hours (cumulatively, within 7 days of index patient’s onset) in close, face-to-face association with the case (e.g., household members, day-care contacts, or cellmates); and
2. Anyone directly exposed to the patient’s nasopharyngeal secretions (e.g., via kissing, mouth-to-mouth resuscitation, intubation, or nasotracheal suctioning). Healthcare workers who have not had direct contact with the case’s nasopharyngeal secretions are *not* at increased risk, and prophylaxis is not indicated for them.

Chemoprophylaxis should be initiated as soon as possible; it is no longer indicated if more than 14 days have passed since the last contact with the index patient

Prophylaxis should not be recommended to persons who have had only brief or casual contact with the case. If such persons are anxious about their exposure, they should be advised that their risk of disease is extremely low. In addition, they should be advised to be alert to signs and symptoms of illness, especially fever, and to seek medical care immediately should illness develop.

Which drugs should be used for prophylaxis?

Before dispensing any medications, the patient should be asked about allergies to drugs, including antibiotics; pregnancy (adolescent and adult females); whether they are nursing (women); and about current medications (to assess for possible drug interactions).

Acceptable chemoprophylaxis includes ciprofloxacin, rifampin, or ceftriaxone, each of which is 90%–95% effective in reducing nasopharyngeal carriage of *N. meningitidis*. Azithromycin is less well studied, and not routinely recommended, but has also been shown to eradicate nasopharyngeal carriage; it may be considered as second-line chemoprophylaxis and may be useful in the uncommon instance of ciprofloxacin resistance.

Ciprofloxacin was not previously recommended in children due to induced arthropathy in juvenile animals, but abundant evidence of lack of joint damage has been found in young children given ciprofloxacin. In one randomized clinical trial on carriage eradication, ciprofloxacin when compared to rifampicin did not lead to a higher rate of side effects. Multiple controlled prospective and retrospective studies, using higher doses of ciprofloxacin, showed that the rate of adverse events of ciprofloxacin in children was similar to that seen with other antibiotics, and that long-term cartilage damage was not seen in humans.^{1,2} The dosage for persons ≥ 1 month of age is 20 mg/kg up to a maximum of 500 mg, orally.³ Ciprofloxacin is not recommended for pregnant women.

Rifampin dosage for those < 1 month of age is 5 mg/kg twice daily for two days; for persons ≥ 1 month of age, 10 mg/kg twice daily for two days (maximum 600mg). Rifampin chemoprophylaxis is not recommended for pregnant women. Those taking rifampin should be informed that gastrointestinal upset, orange discoloration of urine, discoloration of soft contact lenses, and decreased effectiveness of oral contraceptives can occur. Complete medication list should be obtained and checked for interactions prior to providing rifampin. (N.b.: that the rifampin schedule for eradication of *Haemophilus influenzae* carriage is effective against *N. meningitidis* carriage as well, but not vice versa.)

Ceftriaxone can be used for children and adults (including pregnant women) to eradicate nasopharyngeal carriage if ciprofloxacin and rifampin are contraindicated. It is given as a single IM dose of 125 mg for children < 15 years of age and 250 mg for older persons.

Azithromycin may be given as a single oral dose of 10 mg/kg (maximum of 500 mg).

The drug of choice for children is rifampin or ciprofloxacin. Keep in mind that liquid suspension for ciprofloxacin may not be readily available.

Table 1. Recommended chemoprophylaxis regimens for protection against meningococcal disease

Drug	Age	Dose	Duration	Cautions
Ciprofloxacin	≥1 month	20 mg/kg up to a max of 500 mg	Single dose	Not recommended for pregnant women
Rifampin	<1 month ≥1 month	5 mg/kg, orally, twice daily 10 mg/kg (maximum 600 mg), orally, twice daily	2 days	Can interfere with the efficacy or oral contraceptives, some anticonvulsants, and warfarin, among many other drug interactions; may stain soft contact lenses orange Not recommended in pregnant women
Ceftriaxone	<15 years ≥15 years	125 mg, intramuscularly 250 mg, intramuscularly	Single dose	To decrease pain at injection site, dilute with 1% lidocaine
Azithromycin		10 mg/kg (maximum 500 mg), orally	Single dose	Not routinely recommended Use when fluoroquinolone-resistant <i>N meningitidis</i> has been identified in the community

References

1. Burkhardt J, Walterspiel J, & Schaad U. (1997). Quinolone arthropathy in animals versus children. *Clinical Infectious Diseases*, 25, 1196-1204.
2. Guidance for public health management of meningococcal disease in the UK. Health Protection Agency Meningococcus and *Haemophilus* Forum. Updated March 2012. Available at:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/322008/Guidance_for_management_of_meningococcal_disease_pdf.pdf
3. American Academy of Pediatrics. [Meningococcal Infections]. In: Kimberlin DW, Brady MT, Jackson MA, Long SS, eds. *Red Book: 2015 Report of the Committee on Infectious Diseases*. 30th ed. Elk Grove Village, IL; American Academy of Pediatrics; 2015: [547 – 558].

For printable versions of Oregon’s Meningococcal Disease Investigative Guidelines and fact sheets for patients, see:

<http://public.health.oregon.gov/DiseasesConditions/CommunicableDisease/ReportingCommunicableDisease/Pages/index.aspx>

For recommendations of the CDC Advisory Committee on Immunization Practices (ACIP) for vaccination see: Centers for Disease Control and Prevention. Control and prevention of meningococcal disease and control and prevention of serogroup C meningococcal disease: Evaluation and management of suspected outbreaks. *MMWR* 1997;46(RR-5): 1-21. Accessible at: <http://www.cdc.gov/MMWR/PDF/rr/rr4605.pdf>

For recommendations of the CDC Advisory Committee on Immunization Practices (ACIP) for chemoprophylaxis see:

Centers for Disease Control and Prevention. Prevention and Control of Meningococcal Disease: Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2013; 62 (RR02): 1-22. Accessible at:

<https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6202a1.htm>

While not explicitly endorsed by us, there are a number of web sites where you can assess for specific drug interactions including: www.drugs.com/drug_interactions.html

Update Log

June 2021	Removed “Standing Orders” and updated to “Protocol”. (Tasha Martin)
Sept. 2011	Sulfadiazine removed as alternate agent. Web links updated (Dr. Richard Leman)
Oct. 2016	Reviewed orders. Removed designation of Rifampin as the drug of choice. Added summary table of acceptable chemoprophylaxis. Web links updated. (Tasha Poissant).