

Meningitis Case on a College Campus

On September 4, a college freshman shows up at the student health service complaining of a bad headache, feeling “pukey,” shaking with chills, and feeling “out of it.” He began feeling like this about 12 hours ago and thinks it is getting worse. The Nyquil® he took last evening did not seem to help. He states that he must have gotten the flu when he traveled with his softball team to neighboring towns for a couple of games during this past weekend.

His medical history is unremarkable (i.e., he has no chronic disease or medications, NKDA); however, his social history indicates that he lives in the dorm where he shares a room with one other student. He has a serious relationship with his girl friend of three months who smokes cigarettes (~1/2 ppd) and he likes to have a couple beers on Tuesday nights during intramural softball season. His family lives in out of state and he has not been home for three weeks.

Physical examination reveals a healthy looking male in his late teens. He is 70 inches tall and weighs 155 pounds. His oral temperature is 103°F and he experiences excruciating pain when he tries to touch his chin to his chest. During the exam, the student complains about the fluorescent lights hurting his eyes and seems to be confused about where he is and the day of the week. Based on his symptoms and history, the physician suspects this is a case of meningitis. He performs a spinal tap and the spinal fluid is sent to a lab for confirmation.

Tertiary Prevention:

Individual (patient)-level

1. List the three most common bacterial causes of meningitis in young adults and recommend empiric antibiotic therapy for this patient based on that information (name, dose, schedule, duration, and route)
2. When the lab report indicates *N. meningitides* is the causative organism, you have to review the antibiotic therapy. Explain whether you will continue with the same therapy or change it. (Include the name, dose, schedule, duration, and route information for your decision)
3. Describe how you will know if the therapy is successful (i.e., what should you monitor)?

Population-level

1. Is there a need to create a more effective treatment for meningococcal disease (i.e., should research funding go towards the discovery of better antibiotics)?

Secondary Prevention:

Individual-level

1. List the people in the case description who were most likely exposed to *N. meningitides* by the student who became ill. Explain why you chose them – define “close contact” as part of your answer.
2. What sort of post-exposure chemoprophylaxis should you use in these people to prevent the development of meningococcal disease? List all of the options and pick the best one for this group. How long after a probable exposure can a person use post-exposure prophylaxis and benefit from it?
3. If someone was exposed and becomes infected, how long will it be before symptoms appear (what is the incubation period)?

Population-level

1. Describe how you can quickly identify other individuals who have most likely been exposed to the *N. meningitides*? For example, should his classmates be concerned? Do you need laboratory confirmation?
2. Describe how the campus could reduce the spread of disease to others?
3. If there is a shortage of post-exposure prophylaxis medications, how will you prioritize who gets it and which medication they get?

Primary Prevention:

Individual-level

1. Are there any specific actions students and other members of the campus community can take to reduce the likelihood that they will develop meningococcal disease? Is there a vaccine available for this disease?
2. Are there any general actions students and the rest of the campus community can take to improve their overall health so they can fight off illness?

Population-level

1. Describe information you would include in an education campaign about meningococcal disease and list who you would target.
2. Describe the characteristics of populations with increased risk of meningococcal disease. Are there specific segments of the campus community that have increased risk?