Name: _____ Date: _____ Period: _____ NOTES

Notes: Spread, Treatment, and Prevention of Disease

What is a disease outbreak?	• A disease _____ happens when a disease occurs in greater numbers than expected in a community or _____, or during a _____. • An outbreak may occur in one _____ or even extend to several _____. It can last from days to _____. Sometimes a _____ case of a contagious disease is considered an outbreak. This may be true if it is an _____ disease, is new to a community, or has been _____ from a population for a long time. An outbreak can be considered an _____ or pandemic.
How do diseases spread?	• Infectious diseases _____ in many ways. ○ _____ can be found in many places including food, _____, _____, and on surfaces. ○ Contact with _____ and other animals ▪ Insects and animals can also carry _____ that cause disease. • Ex. _____ Disease is caused by _____ that inhabit ticks. • Rabies, a deadly central _____ system infection is caused by a _____ and is found in the _____ of infected animals, such as _____, raccoons, etc. ○ Person-to-Person Contact ▪ Most of the _____ you have had have probably been passed to you by another _____. ▪ To avoid giving/receiving pathogens, you should _____.
What are Carriers and Vectors?	• Carriers and vectors can spread _____, but generally do not get _____ themselves. • _____: a person or animal that has a disease and can _____, but does not show any _____. • _____: an organism (like a mosquito or tick) that _____ pathogens from one organism to _____.
How do we treat and prevent diseases?	• Diseases caused by _____ can be treated with medicines that contain _____. ○ The first antibiotics were discovered in _____ by a scientist named Flemming. • Antimicrobial: something that kills _____ (includes hand sanitizer, _____, etc.) • Scientists continue efforts to _____ and _____ illness. ○ _____: a substance that contains a _____ or _____ pathogen, such as a bacterium or _____, that stimulates _____ production or cellular _____ against the pathogen but cannot cause _____ infection. Vaccines _____ illnesses (not _____ them!). The use of vaccines has made some diseases nearly _____. ○ Antibiotics fight _____ (bacteria), but they can also lead to _____ in them. ▪ When an antibiotic is used too _____, bacteria can develop _____, meaning it is no longer _____ by the antibiotic. ▪ The next time those bacteria _____ your body, that particular antibiotic will not _____ the disease.
What is the difference between an epidemic and a pandemic?	• Epidemic and _____ refer to the spread of _____ diseases among a population. ○ Epidemic: when a disease spreads to a _____ number of people, but remains in a specific, _____ area. ○ Pandemic: when a disease spreads to _____ places around the _____. A widespread epidemic. In the most extreme case, the entire _____ population would be affected by a pandemic. • The terms epidemic and pandemic usually refer to the _____ of infection, the _____ that is affected or both. ○ An _____ is defined as an illness or health-related issue that is showing up in _____ cases than would normally be expected. It occurs when an infectious disease spreads _____ to many people. In _____, the

	severe acute respiratory syndrome (_____) epidemic took the lives of nearly _____ people worldwide. ○ In the case of a pandemic, even more of the _____ is affected than in an epidemic. A pandemic typically is in a _____ area (usually worldwide) rather than being confined to a particular _____ or region and affect global populations. An epidemic is not _____. For example, malaria can reach _____ levels in regions of _____ but is not a threat globally. However, a _____ strain can begin _____ (epidemic) but eventually spread _____ (pandemic). This is not unusual for a _____ virus, because if people have not been _____ to the virus before, their immune systems are not ready to _____ it off, and more people become ill. _____ started in Mexico city, and it was feared to lead to _____ proportions in North America. Now that the flu has been found in New Zealand, Israel, Scotland and many other _____, it has become _____. The 1918 _____ and the Black Plague are extreme examples of pandemics. Keep in mind, though, that a pandemic doesn't necessarily mean millions of _____—it means a geographically _____ epidemic.
Influenza Pandemics	• _____ pandemics have occurred more than once. Spanish influenza killed _____ million people in _____. The Asian influenza killed _____ million people in 1957. The Hong Kong influenza killed ___ million people in 1968. • An influenza _____ occurs when a new _____ of _____ arises. This means humans have little or no _____ to it; therefore, _____ is at risk. The virus spreads easily from _____ to person, such as through _____ or coughing. As it spreads, the virus can begin to cause _____ illness worldwide. With past flu pandemics, the virus reached all parts of the _____ within _____ to _____ months. With the speed of _____ travel today, public health experts believe an influenza pandemic could spread much more _____. A pandemic can occur in _____, and all parts of the world may not be affected at the same _____.

Questions:

1. In your own words, explain the difference between an epidemic and pandemic.

2. Why is an epidemic bad?

3. Why is a pandemic bad?

4. Which do you think is worse, an epidemic, or a pandemic? Why?

5. List 2 ways that we can treat or prevent a disease.

6. List 3 ways a disease can be spread.

7. Why is it bad when a new subtype of influenza virus arises?

8. Explain how carriers and vectors are related. Why are they so harmful?