Infectious Disease Diagnosis Activity: Doctor’s Notes

You are a doctor working at a clinic specializing in infectious disease. Use the Public Service Announcements (PSA) to check off symptoms on the “Symptom Chart.” You have several patients visiting you today who are complaining about feeling sick with various symptoms. In their visit to the clinic, think like a doctor and ask good questions to get them to tell you their symptoms, how long they have been sick, and their travel history. Do your best to diagnose their ailment from the combination of clues (symptoms, duration of symptoms, travel history, and other pieces of information). You can refer to your “Doctor’s Notes” about infectious disease from the Centers of Disease Control below. To keep track of the patient’s symptoms, use the “Patient Chart” which you will took notes on during the doctor appointment. Use Health Map (http://healthmap.org/en/) to create a disease map to identify where each disease occurs.

Disease Information was taken from the Centers of Disease Control and Prevention Website. http://www.cdc.gov/
Disease Maps: can be made at the following link. http://healthmap.org/en/?ps=99

Malaria
http://www.cdc.gov/malaria/
Symptoms:
• Fevers, chills, sweats, headaches, nausea, vomiting, body aches, malaise, elevated temperatures, perspiration, weakness, enlarged spleen, mild jaundice (yellowing of skin), enlarged liver, increased respiratory rate.
Incubation Period: 7-30 days
Vector: Anopheles mosquitoes
Pathogen: Plasmodium genera protozoa (Plasmodium falciparum, P. vivax, P. ovale, and P. malariae)
Disease Map: http://www.healthmap.org/malaria/index.php

Dengue:
http://www.cdc.gov/Dengue/
Symptoms:
• High fever and at least two of the following: severe headache, severe eye pain (behind eyes), joint pain, muscle and/or bone pain, rash, mild bleeding (e.g., nose or gum bleed, or easy bruising), and low white cell count.
Watch for warning signs as temperature declines 3 to 7 days after symptoms began.
Go IMMEDIATELY to an emergency room or the closest health care provider if any of the following warning signs appear:
• Severe abdominal pain or persistent vomiting, red spots or patches on the skin, bleeding from nose or gums, vomiting blood, black, tarry stools (feces, excrement), drowsiness or irritability, pale, cold, or clammy skin, difficulty breathing.
Incubation Period: 4 – 10 days from mosquito bite.
Vector: Aedes aegypti and Aedes albopictus (mosquito)
Pathogen: Dengue Virus
Disease Map: http://www.healthmap.org/dengue/index.php

Leishmaniasis
http://www.cdc.gov/parasites/leishmaniasis/index.html
Symptoms:
Cutaneous Leishmaniasis: one or more painless ulcers
• One or more painless ulcers
Visceral Leishmaniasis:
• Weight loss, enlargement of the spleen and liver, decreases in the production of blood cells that can lead to anemia, bleeding and infections with other microorganisms, nearly always fatal.
Incubation Period: Few weeks to several years.
Vector: female phlebotomine sandflies
Pathogen: obligate intracellular protozoa of the genus *Leishmania*

Disease Map:

**Lyme Disease**
http://www.cdc.gov/lyme/

Symptoms:
- Bull’s eye rash, fatigue, chills, fever, headache, muscle, joint aches, swollen lymph nodes

Incubation Period: 3 to 30 days

Vector: deer tick, *Ixodes scapularis*

Pathogen: *Borrelia burgdorferi*

Disease Map:

**West Nile Disease**
http://www.cdc.gov/westnile/index.html

Symptoms:
- Fever (high in severe cases), headache, tiredness, body aches, occasionally with a skin rash (on the trunk of the body) and swollen lymph glands, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, paralysis

Incubation Period: 2-15 days

Vector: Culex species of Mosquito

Pathogen: West Nile Virus

Disease Map:

**Eastern Equine Encephalitis**
http://www.cdc.gov/EasternEquineEncephalitis/

Symptoms:
- Early Onset:
  - Chills, fever, malaise, joint pain, and muscle pain.
- Encephalitic Patients:
  - Fever, headache, irritability, restlessness, drowsiness, anorexia, vomiting, diarrhea, cyanosis (blue appearance of skin due to low oxygen), convulsions, and coma.

Incubation Period: 4 – 10 days

Vector: Mosquitoes

Pathogen: Eastern equine encephalitis virus (EEEV)

Disease Map:

**Yellow Fever**
http://www.cdc.gov/yellowfever/

Initial Symptoms:
- Sudden onset of fever, chills, severe headache, back pain, general body aches, nausea, and vomiting, fatigue, and weakness. Most persons improve after the initial presentation.

More Severe Symptoms:
- High fever, jaundice (yellow skin and eyes), bleeding, and eventually shock and failure of multiple organs.

Incubation Period: 3 – 6 days

Vector: *Aedes or Haemagogus* species mosquitoes

Pathogen: Yellow Fever Virus

Disease Map: Map
Infectious Disease Diagnosis Activity: Patient Stories

Samantha

Samantha had a great spring break vacation with her parents to the island of Trinidad. She was at the beach a few days and also traveled into the country side. Samantha got home from vacation on a Sunday and was back at school the next day. By Wednesday she was not feeling well since she suddenly came down with a fever. She felt weak and had the chills. After going to the nurse, Samantha went home from school to rest. When her mom came home, she noticed that Samantha’s eyes looked yellow and the fever was getting higher.

John

John is a high school student who lives in Massachusetts. He works during the summer and after school at a local cranberry farm. He enjoys spending his days outside working for some extra money. He is entering his senior year and his friends have noticed that he has not been himself. He has been tired and irritable. John said that the long hours are getting to him because his muscles and joints have been sore. His mother felt his forehead, which is hot and she comments that his complexion is a little blue.

Jose

Jose went to visit his extended family for the summer in Brazil. He reconnected with his friends by playing soccer each day. A few months after getting home, he noticed growing red spots. The spots leaked puss and developed into ulcers.

Maggie

Maggie is a high school student who lives in Connecticut. She was in the mall looking disoriented. A stranger stopped to ask if she was okay. She said that she has a severe head ache and that her neck was stiff. She noticed that her lymph nodes were swollen and that her whole body was sore.

Tara

Tara is a college student who spent a summer abroad in India, volunteering for a Youth Organization. She spent 30 days as a canoeing instructor at a wilderness camp for under privileged children, located 40 miles outside of the city of Mumbai. Tara enjoyed her time teaching Mumbai’s youth, but began to feel ill towards the end of her stay. She recalls waking up one night, the third week into her volunteership with the sweats and extreme nausea. She remembers these symptoms from when she has the flu last winter, however they were stronger and more persistent now. Tara continued to feel sick the following week with vomiting episodes and a fever. She felt as though tasks that were once easy, such as rowing a canoe with a few children, was now a laborious activity as she was often short of breath. When her father picked her up at the airport, he told his daughter that her skin appeared “yellow.” Tara continues to feel sick with these symptoms, and her complexion hasn’t yet returned to her usual color.
Sebastian

Sebastian is a junior on his high school's baseball team. He just returned from practice exhausted and achy one August afternoon. He went to lay down in his bed to rest since he had a headache and pressure behind his eyes. Sebastian thought his headache was probably from being out in the sun all day while practicing with the team. About a half hour into his nap, his mother called him downstairs for dinner. On his way down, he stopped in the bathroom. Sebastian looked in the mirror and noticed that his face looked pale and blotchy. A moment later his nose began to bleed. He wonders why he is feeling so ill, when just a week earlier, he was visiting his grandparents in San Juan, Puerto Rico soaking up the sun and feeling great.

Kelly

Kelly is a freshman in high school who enjoys hiking with her dog at their favorite park in the Hudson Valley of New York. This spring, the weather has been beautiful, so she has been hiking more frequently. Kelly was in her first period Spanish class one morning when she realized how achy her ankle joints and leg muscles were feeling. She figured her aches and pains must have been from all the hiking she has been doing. When she came home that day, she was tired and decided to change into some comfortable clothes and watch some TV instead of going for a hike. While changing, she noticed a strange circular rash about the size of a grapefruit on her stomach.