

Activity 1.1.3 Student Resource Sheet Outbreak Investigation Day 2

The following day, more patients show up at the infirmary. A history and physical is completed for each new patient. The laboratory also returns additional data for patient Sue Smith.

New patients:

Marco

Marco complains of extreme fatigue and a killer headache. He feels like he is coming down with a cold. Marco is supposed to go home for the holidays and does not want to pass whatever he has to his girlfriend, Elena. He figures if he can get some medication now, he can take care of any bug before he feels truly miserable. Marco is Sue's lab partner for biology. They did not know each other before being paired in the lab, but after spending four hours together two times a week, they have become good friends. Even though they are not supposed to eat in the lab, they alternate bringing in food and drink and share these snacks during their breaks.

Alvin

Alvin comes in to the infirmary complaining of a headache and a sore throat. He was at a concert last night and he thinks some of the soreness is due to his enthusiastic yelling, but he wants to at least get some medication for his headache. Alvin has been up all week studying for his chemistry test, but he does make some time for his music. He plays guitar and he has just started getting involved with some of the music groups on campus. As he is sitting in the waiting room, he spots Marco, his neighbor in the dorm.

New evidence:

Sue

Sue is still feeling awful. She must have slept in the wrong position because her neck feels extremely tight when she wakes up. Sue is supposed to leave for a soccer trip two days from now and she really hopes that whatever she has will not keep her from participating. She comes back to the infirmary to find out the results of the tests that were run the previous day.

Samples of Sue's blood, urine, and lymph were collected at the first visit and were used for diagnostic laboratory tests. As part of a pilot study, the college infirmary is working with the molecular biology department at the college to identify pathogens by their DNA sequences. The lab has isolated primers, small segments of DNA that attach to key genes in bacteria and viruses and allow amplification and sequencing of the DNA. Sue's samples were sent out for molecular testing. Little did you know what you would find!

The lab returns the following sequence data from Sue's sample:

atgacccgtc aatctctgca acaggctgcc gaaagccgcc gttccattta ttcgttaa
aaaaatctgc ccgtcggcaa agatgaaatc gtccaaatcg tcgaacacgc cgtttgcac
acaccttctt cgttcaattc ccaatctgcc cgtgtggtcg tgctgtttgg cgaagagcat