

The Taming of the Flu Mending Misconceptions and Thwarting Transmission

There are certain things every Augie student expects once the winter comes: snow, break, holiday gifts, -and unfortunately the flu.

Each year, the flu, a shortened version of the medical name “influenza,” crosses the globe as an epidemic, including, as we all know too well, college campuses. Yet the disease may not be what you think. When you’re nauseous and up all night experiencing what you may think of as “the flu,” what you’re most likely suffering is gastroenteritis, a viral inflammation of the lining of the gut.

Influenza is actually a respiratory disease caused by many strains of three different categories of viruses. Scientists classify a virus depending on its source and the behavior of its two major surface proteins, Hemagglutinin and Neuraminidase. Influenza A viruses are found in humans and animals and have proteins that change often. Influenza B viruses have proteins that change very slowly and are viruses found only in humans. Influenza C viruses are also found solely in humans but are strains that are extremely uncommon.

As with human DNA, all three categories of the influenza virus carry their genetic information in 8 separate segments, called ribonucleoproteins. Since there are 8 different segments, instead of just one segment as in our cells, there is lots of room for recombinants to form. These recombinants create new forms of the virus that immune systems are not familiar with. This is why new flu strains are formed each year in response to the immune system in cooperation with antibiotics and why, unfortunately, each year you can become re-infected.

As influenza takes its tour around campus, you and your roommate might not be affected in the same way. Your immune system may have responded well to last year’s strain of influenza, but because of genetic recombination this year’s flu might not be so friendly to your body. As unfair as this may seem, if one of you has had a strain of the flu before that is similar to the current strain, that person will have much milder symptoms than the other because his or her immune system is better prepared.

Despite any amount of immune preparation, some strains of influenza have been much more virulent than others. The 1918 Flu Pandemic took the lives of over 20 million people. This “Spanish Flu” caused the common symptoms of fever, headache, cough, congestion, and sore throat, to be intensified, causing people to die as quickly as overnight.

Many did not meet their fate in this rapid manner, however. Some people’s immune systems were slowly weakened instead of immediately destroyed. A large number of infected persons developed complications, usually bacterial pneumonia, that caused them to die.

Vaccinations, antibiotics and other medicines were not available to combat the side effects of influenza in 1918. Today, such luxuries do exist, but some should only be used to fight pneumonia or other complications. It is because the virus multiplies best on cold, moist cell membranes that the body develops a fever when you have “the flu.” Warming the body decreases the virus’s chances of replicating. Therefore it is actually detrimental to take any sort of fever reducer, because you are only facilitating the growth of the virus. Vaccinations can be helpful, however, to avoid getting the virus in the first place.

Vaccinations are usually given in the fall, right before the cold season. Yet, really, we don’t have to wait all year long to see the appearance of influenza. Although it may seem that along with snow comes influenza, it is, in fact, in our company at all times. Yet when the cold weather

increases we are more likely to be held up inside where we are in closer contact with the aerosols, respiratory droplets, which are involved in the transmission of the virus.

The virus is nearly everywhere during the winter, especially on campuses, where close proximity facilitates close interaction. Students also have high stress because of lack of sleep, academics, and social lives, weakening their immune systems. Interestingly, the improved quality of houses and dorms also assists in the transmission of influenza. Air tight insulation increases humidity, which is great for safeguarding aerosols containing influenza. This is not to say that Augustana bears this type of housing.

You may wonder if the world is at risk of another pandemic influenza event. The answer to this question is quite possibly yes. When a population is exposed to a virus, they develop what is called "herd immunity," meaning that a large mass becomes immune to that particular virus. However, when all members of that population die, there is no immunity left and that particular virus can strike again. Therefore, it is possible that we could be expecting to see the see the same virus that caused the 1918 pandemic again.