

# TerranearPMC Safety Share

## Week of December 26, 2017 – Winter Season is Flu Season

Winter weather has arrived in many areas across the country (and some areas have had no signs of winter – sorry to all those that purchased season ski passes!) And that means we are in the midst of Flu Season! The fact is, while flu outbreaks may happen in early November or even in March, everywhere on Earth where there is a winter season, the flu is also present.

And yet with all our scientific knowledge, we still do not have a firm grasp as to why winter time is flu season. But, there have been a quite a number of theories. One theory is that flu peaks in winter because people spend more time indoors, with the windows closed, breathing each other's air. Other scientists have argued that the darkness (i.e. lack of Vitamin D and melatonin) and cold of winter weakens our immune systems, making us more susceptible to the virus. And a third theory is that--regardless of how we deal with the cold--the flu virus thrives in the cold, dry air of winter, but suffers in the warm, humid air of summer.

The first known outbreak of the flu (or influenza) occurred in 1918, at the end of the First World War. As soldiers fanned out on the European battles lines and then travelled back home after the war, the virus followed, making its way around the globe. Areas that suffered greatly were Russia and Greenland where two more pandemic waves spawned and were even deadlier than the first. The disease became known as Spanish flu only because the Spanish news media was the first to widely report the epidemic, which had been hushed by wartime censors elsewhere in Europe.

It was the deadliest pandemic in modern history. An estimated 500 million people worldwide--about one-third of the planet's population at the time--contracted the disease and resulted in an estimated 20 million to 50 million deaths. More than 25 percent of the U.S. population became sick, and some 675,000 Americans died during the pandemic. Surprisingly, many flu victims were young, healthy adults. Of course the reason for this may be due its initial outbreak occurring in the battlefields of WWI where most of the victims were young men. However, as noted earlier, this disease did spread throughout the world, and even then, it seems that the most severe cases focused on young adults between the ages of 20 and 40.

At the time, there were no effective drugs or vaccines to treat this disease or even to prevent its spread. In the U.S., citizens were ordered to wear masks. At the same time, schools, theaters and other public places were closed. Many sufferers came down with severe nosebleeds, spewing blood out of their nostrils with such force that nurses were being splashed by patients' body fluids. Those persons that succumbed to this disease eventually drowned in their own bodily fluids. We now understand that the severe health effects caused by influenza virus was due to its ability to target the lungs, causing pneumonia.

The Meriam-Webster Dictionary defines influenza as an acute, highly contagious, respiratory disease caused by any of three orthomyxoviruses (a family of viruses that has RNA - ribonucleic acid – as its genetic material). There are three main types of influenza of which Influenza A is the most common, most notably marked by sudden onset, fever, sore throat, fatigue, muscle aches, inflammation of the respiratory mucous membranes, and cough, that has numerous variants caused by subtypes such as H1N1, H2N2, and H3N2.

Why Spanish flu was so fatal, especially to people in the prime of their lives, is what scientists have been striving to understand. It was TIME magazine that first reported, in the wake of Hong Kong's 1997 avian flu outbreak that a pathologist named Johan Hultin collected an intact, long-frozen sample of the Spanish flu virus from a mass grave in a tiny Alaska town called Brevig Mission, where 85 percent of the



population perished in a single week. Research on that sample indicated that one way Spanish flu worked was by overstimulating the immune system and turning it against its owner — so having a strong immune system (as expected with young, healthy individuals) may have been a disadvantage. It was also through this research that in 2005 (after eight years of examining the corps of the influenza victim), scientists succeeded in sequencing the virus's RNA. But the specifics regarding the determination of the virus's origination remained a mystery.

At the same time, Hultin was able to research records from the initial outbreak of 1918 that provided insight how one Alaskan community was able to survive the pandemic. That is, isolation. TIME magazine explained: "It was a tactic... successfully used in 1918 by a village just 30 miles from Brevig. Its elders, after learning of the advancing plague, stationed armed guards at the village perimeter with orders to shoot anyone who tried to enter. The village survived unscathed."

As we all know today, the flu, is a virus that attacks the respiratory system and is highly contagious: When an infected person coughs, sneezes or talks, respiratory droplets are generated and transmitted into the air, and can then be inhaled by anyone nearby. Additionally, a person who touches something with the virus on it and then touches his or her mouth, eyes or nose, can become infected.

A person may be infectious to others both before and during the time they are showing symptoms. The infection may be confirmed by testing the throat, sputum, or nose for the virus. A number of rapid tests are available; however, people may still have the infection if the results are negative. A type of polymerase chain reaction that detects the virus's RNA is more accurate.

So, how can we protect ourselves from this annual winter illness? According to the Centers for Disease Control and Prevention (CDC), there are three main actions to take.

First – Get a flu vaccination! While there are many different flu viruses, a flu vaccine protects against the viruses that research suggests will be most common.

Second – Practice preventative actions. These include avoiding close contact with sick people, avoid touching your eyes, nose and mouth and washing your hands with soap and water (if soap isn't available, use an alcohol-based hand rub.)

Third – If you get the flu, use antiviral drugs. These are prescription medicines (pills, liquid or an inhaled powder) and are not available over-the-counter. Studies show that flu antiviral drugs work best for treatment when they are started within 2 days of getting sick, although starting them later can still be helpful.

And as a final word, if you develop flu symptoms, avoid contact with others and stay home for at least 24 hours after your fever is gone except to get medical care or for other necessities. Experts agree that your fever should be gone for 24 hours without the use of a fever-reducing medicine.

**A lot of people ask me if I were shipwrecked, and could only have one book, what would it be? I always say 'How to Build a Boat.**

Steven Alexander Wright

