For the first edition of the Influenza issue, we will be taking it back to one of the first vaccine preventable disease profiles that we reviewed – influenza. While a lot is known about both seasonal and epidemic influenza, it is sometimes overlooked as a deadly vaccine preventable disease. This month, we will re-review the symptoms, history, and discuss the difference between seasonal and epidemic influenza.

***Do You Have Flu-Like Symptoms?***

We’ve probably all heard or said that phrase at some point, but flu-like symptoms encompass a lot of common symptoms including a cough, sore throat, headaches, fatigue, and usually a fever or chills, but not always. However, Influenza symptoms usually come on suddenly whereas cold symptoms come on gradually and rarely have a fever associated with them.

Most people recover from influenza in a couple of weeks without complications. But there is a risk for mild to severe complications for those with pre-existing conditions or those who are older. Those complications including pneumonia, sinus and ear infections, inflammatory heart disease, and even encephalitis.

Influenza is caused by a contagious viral infection that enters the nose, throat, and lungs through respiratory droplets. There are four main types of influenza. Both A and B are common in humans, and C and D typically infect animals and microorganisms. Influenza A is typically the cause of epidemic influenza such as Swine Flu and Avian Flu whereas Influenza B is traditionally more deadly and can cause more serious illness.

***Seasonal Vs. Epidemic Influenza***

Seasonal and epidemic influenza are two different things. Epidemic or pandemic influenza includes a concentrated spread of the virus in one area and are typically different than the current circulating seasonal virus. The seasonal spread typically occurs during fall and winter and are predicted

***History of Influenza***

It isn’t known when influenza first began to infect humans, but scientists believe that domesticating birds and pigs starting in early 1600 AC caused the virus to spread from animals to humans. Influenza-like illnesses were reported in northern Greece, Italy, and other parts of Asia and Europe around this time. In 412 BC, the Greek physician Hippocrates described what is believed to be influenza in one of his books. The term “influenza” or “La Influenza” was coined in the 1300s from the Italian word for “influence”. It is believed that “Cold Influence” was used as a term for the period return of the disease that was “influenced by the stars”.

Flu epidemics continued throughout the next two centuries in parts of Asia and Europe. It is believed that an epidemic in Rome in the early 1580 killed over 8,000 people. This epidemic was considered the first flu pandemic, and many more would follow until the first vaccine was developed in 1945.

***The 1918 Flu Pandemic***

Coined as the Spanish Flu, the 1918 influenza pandemic was the deadliest pandemic of the 20th century and killed about 20 to 50 million people worldwide. At it’s peak, over one third of the world’s population was infected with the flu.

It is widely believed that the pandemic began in Kansas at Camp Funston and modern-day Fort Riley, where men were being hospitalized with severe flu-like symptoms. A local doctor reported this to the local public health service, but nothing was done. By March 4 of that year, as many as 500 soldiers at Fort Riley were hospitalized within a week. Because of World War I, many of these soldiers had been sent to Europe to assist with the war – and well, it spread like wildfire and by May of that year – it was a full-blown pandemic. The term “Spanish influenza” is believed to come from the lack of media censure in Spain when the disease hit Europe – but the virus itself, a strain of H1N1 (the swine flu virus), started in Kansas. By the end of the pandemic, the average life expectancy in the United States had dropped by 12 years.

***Seasonal Influenza Surveillance Begins***

By 1952, the World Health Organization created a surveillance system for the flu. Because of small changes to the influenza virus, it was determined that traditional surveillance would no longer work, and a new seasonal determination was made. This seasonal surveillance is still use, and helps scientists determine effective seasonal influenza vaccines.

***The 2009-2010 Swine Flu Epidemic***

The same strain of the virus that caused the 1918 pandemic came back in full force in 2009. This epidemic typically affected children and younger adults who had not experienced the virus before. Because of this virus, the then President Barack Obama invested heavily in new vaccine and public health measures, many of which continue today.

***Vaccine Development and Current Research***

The influenza virus was isolated by scientists after the 1918 pandemic. Prior to this time, it was believed that bacteria were the cause of the virus, not a virus itself – leading scientists to do more research. By 1945, the first inactivated influenza vaccine was developed at the University of Michigan for the military. This vaccine used fertilized chicken eggs – which, as you know, is still in use today.

After the success of the mRNA technology used to prevent the COVID-19 virus, scientists have continued to develop better vaccines to seasonal influenza. In 2023, pharmaceutical companies are believed to release a flu/COVID-19 combo. In the future, it is highly likely that the influenza will have one universal vaccination – and will never been seen again.

***Personal Experiences from Your Resident Millennial***

It’s been a while since I’ve had personal connections to a vaccine we’ve discussed. This one is twofold.

I was one of the 60 million cases of Swine Flu in the summer of 2009. It was one of the few times I’ve been horribly sick, and I just happened to be on vacation with my family at Walt Disney World – it is not the *Happiest Place of Earth* for me anymore.

I was also a huge *Twilight* fan in middle school. The main character of that novel, Edward, who is a vampire, died of the influenza during the 1918 flu pandemic. With the book’s resurgence in popularity this past year, people have used *Twilight* as an effective marketing strategy for increasing vaccination.

Sources:

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