

The Burden of Flu on our Population

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History of Flu

Influenza (flu) is a viral respiratory illness that can infect the upper airways and the lungs. Flu is transmitted thru droplets when an infected person coughs, sneezes, or talks. The flu season in the US occurs year-round however it is most common in fall and winter at times lasting until May.

Several Influenza related pandemics have been reported including the Influenza-like health crisis of 1580. The pandemic that occurred in 1918 was caused by the H1N1 virus. It devastated the whole world killing more than 50 million people, including 675,000 Americans according to the Center for Disease Control (CDC).^{2,3} The poor environmental condition during World War 1 together with the lack of vaccine and treatment, fueled the spread of the virus. The first Influenza virus was isolated in early 1933 by Smith, Andrewes, and Laidlaw after Shoppe identified Swine Influenza A in 1931.² This discovery proved that Influenza is not a bacteria but a virus. Since then the Influenza virus has mutated from H1N1 in 1918 to H2N2 in 1958, and in 1968 it became H3N2. In 2009, the world's health was threatened again when Influenza H1N1 re-emerged as a pandemic.

Global Incidence 2021-2022

The World Health Organization Global Influenza Program has reported a steady increase in the incidence of Influenza around the globe although relatively lower compared to the pre-COVID-19 pandemic incidence. The change in the pattern of Influenza prevalence could likely be due to the infection control measures in place to mitigate the COVID-19 transmission that has also controlled the transmission of Influenza. There are several strains identified in different regions around the globe, however, Influenza A (H3N2) is predominant in North America, South America, Europe, Southern and Southeast Asia with sporadic cases reported in

the Philippines. Both strains of Influenza B (Yamagata and Victoria lineage) were reported in tropical Africa as well as Influenza A. ¹ It is important for people to know the transmission pattern of Influenza particularly to those who continue to travel globally in order to arm themselves with appropriate prevention measures.

The majority of the cases detected in the US belong to the Influenza A H3N2 strain. Clinic visits due to respiratory illness have increased since December 2021 with Influenza as one of the viral diagnoses. According to CDC, the country's hospitalization rate from Influenza at present is 3.4 % per 100,000 cumulative hospitalization rate, slightly higher compared to 2020-2021 data with wide variability in admission rates in the different regions of the country ^{2,3}. CDC is confident that the current vaccine will prevent critical and life-threatening Influenza illness similar to previous years. This was confirmed in a study done by Pediatric Intensive Care Influenza Network on US children in 2019-2020. ⁵

Clinical Features

The incubation period of Influenza ranges from 1-4 days per CDC. ^{2,3} A person who has the illness can transmit the virus to another person one day before the appearance of symptoms up to 5-7 days, sometimes up to 10 days in children. It is transmitted via the respiratory pathway destroying the epithelial cells of the upper airway and the lungs. It can manifest as a sudden onset of cough, coryza, sore throat, fever, chills, fatigue, myalgia, headache, vomiting, and diarrhea. Symptoms are usually resolved on average in 3-4 days. On rare occasions, some people will have a lingering feeling of fatigue.

Critical illness

Older adults, children younger than 2 years of age, pregnant women, and those with chronic medical conditions including immunocompromised patients are vulnerable to severe complications from flu illness. Some of these patients require hospitalization including intensive care admission. Severe cases often involve mechanical ventilatory support (invasive and non-invasive), use of vasopressors, and other intensive care measures due to life-threatening illness

either as a direct effect of flu or secondary infection. The influenza mortality rate is mostly higher in patients 65 years old and above.

Prevention

The US Public Health Service has recommended annual flu vaccination to everyone who is over six months old to protect from the risk of severe illness. All eligible individuals should request flu vaccines from their primary providers before the start of the flu season. This year the flu vaccination is critical due to the ongoing COVID-19 pandemic. Co-administration of the flu and COVID-19 vaccines are possible.- If you have not yet received your COVID-19 vaccine , please be sure to do.

Visit www.cdc.gov for a detailed flu vaccine information. ⁴

Reference:

1. WHO - Global Influenza Program. <https://www.who.int/teams/global-influenza-programme/surveillance-and-monitoring/influenza-updates/current-influenza-update>.
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3. Influenza - Flu activity and surveillance, <https://www.cdc.gov>.
4. Prevention and Control of Seasonal Flu with Vaccines: Recommendations of ACIP-US —2021-22 Summary of Recommendations. <http://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/flu.html>.
5. Olson, S.M. et al (2022). Vaccine effectiveness against life-threatening Influenza illness in US children. Clinical Infectious Disease. <https://doi.org/10.1093/cid/ciab931>.