

# Spanish Flu (Great Influenza) 1918: The Tale of The Most deadly Pandemic in History

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**ABSTRACT**— *The epidemic is an imminent danger that all humans fear, as it does not differentiate between anyone, whether small or old, rich or poor. It is characterized by its ability and super speed to conquer the world and its primary goal is to target humans and eradicate their lives. In this article, the authors decided to provide a brief historical overview of the Spanish flu pandemic, where it initiated and how it influenced the people of the earth and review a set of images about events that occurred in the United States of America in 1918. All facts in this article are collected from a group of published articles on websites. This article found that the Spanish flu is one of the deadliest diseases in human history, as it managed to kill 40 to 100 million people around the world in two years.*

**Keywords**—Spanish flu, Pandemic, Epidemic, Influenza, COVID-19, United States of America.

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## 1. INTRODUCTION

Epidemics spread very widely in this life [1][2]. The most straightforward example is the spread of the COVID-19 pandemic [3][4], which began in December 2019 in China, and in a short time, it was declared a pandemic after its spread worldwide. This pandemic sparked outrage worldwide, as it infected millions of people in many different countries, and hundreds of thousands of people lost their lives in days after infection [5-8]. Moreover, authorised units confirmed that the ultimate defence against this virus is vaccination; however, vaccine hesitancy and low vaccine acceptance carries a critical risk [9][10].

In today's world, where human interaction between nations is rapid and widespread, the spread of an epidemic from one nation to other nations in a short time has led to a discussion of urban agglomeration and the concept of globalisation [11-13]. In other words, cities are known to be shaped according to the demographic, geographical, economic, social, and political characteristics and the accumulations of the countries in which they are located over time [14]. The expansion of trade and the increase of industrialisation have accelerated urbanisation in countries and thus led to the rapid spread of epidemics between countries. One of the reasons for the emergence of COVID-19 in Wuhan, China and its rapid spread to the world, and this spread cannot be prevented, is seen as a result of globalisation by many sources [15-17]. Today, the culture of production and consumption has changed from the cities that were the place of collective markets to centres of capital and the workforce. In addition, the idea of production and consumption of the capitalist system imposes on the opening and establishment of new areas, meaning that this idea may help the spread of viruses among citizens [18][19]. Actually, there is excellent cooperation between global cities based on the exchange of information, money, products, people, and technology. Therefore, these cities have a significant impact on other cities by increasing their economic

activities and attracting the largest number of citizens to them. In addition, the continuous migration movements between cities. It is also known that the increase in the population of cities increases not only with migration, but also from the rate of decrease in mortality due to various medical and technological developments. This significantly and fundamentally helps the pandemic spread widely and the inability to control it and thus leads to intense crises and significant material losses [20-22].

Artificial intelligence techniques and technology [23-31] have significantly and noticeably helped to track and monitor the spread of the COVID-19 pandemic [32][33], thanks to machine learning techniques [34-36] that are able to analyse X-ray images and CT-scan images and detect the percentage of virus presence in the lung, as well as its significant role in the rapid development of vaccines [37-39].

The primary pursuit of this article is to review an ancient pandemic that caused a sensation after the First World War, which infected and killed millions of people around the world. This article provides a historical overview of the spread of the Spanish flu pandemic and how it started and transferred between countries. Also, this article is a collection of facts and images collected from many sources on the Internet.

## **2. SPANISH INFLUENZA PANDEMIC**

More than a century ago, the Spanish influenza pandemic (1918 -1920) killed about 40 to 100 million people [40-43], and the estimated suspected cases were 500 million people worldwide [44], which is more than the number of people who died in the First World War. Due to this pandemic, the world went through a very difficult and severe period. Patients with this disease complained during this time of the appearance of some symptoms such as headaches, respiratory difficulties, coughing, and high temperature. This influenza appeared in two waves [45], the first in the spring of 1918, which was not very harmful, but in the autumn of the same year, influenza started to spread rapidly and became very deadly. In addition, this influenza is distinguished from other pandemics in that it killed young people who were in good health instead of the elderly, as young people lived at that time in challenging conditions, as some of them died within hours and did not bear the symptoms that appeared on them, meaning that this influenza concentrated heavily on very young people instead of children and the elderly because most of them participated in the First World War and were exhausted and their health was not good at that time. The first wave was on May 22, 1918, in Spain in Madrid is at its religious ceremonies and afterward, everyone who attended the event to injury to this virus. The first of the mention of this event is Spanish newspapers [46]. The second wave occurred in September of the same year in Spain during the harvest season, which is a period that is the beginning of the spread of the disease. A lot of investigations indicated that the onset of the disease was from a training camp for a group of soldiers in the United States of America who had a long and uncomfortable trip to France as soon as they entered the French beaches, the disease started to spread among the soldiers and moved to France and from there to Europe. Whatever place where this pandemic began, it was able to torture and die a large number of residents of the earth. In health care, the patient's lungs were examined under a microscope, where the autopsy showed that the lungs are stiff, red, and filled with fluid, meaning that the cells of the lungs, which are usually filled with air, were saturated with fluid, as if the victims had drowned in the sea. Spanish newspapers, which are primarily characterised by the transfer of the spread of the disease, publicly spoke about millions of Spanish people who died during May and June 1918 because of this virus; then, this information reached all newspapers in the world. Moreover, this pandemic reached everywhere, north to Norway, east to China, and south to New Zealand; even islanders were infected with this virus. People, impoverished areas and rural areas suffered from this pandemic. In New York, 30,000 people who died of this virus were buried [47]. In some cases, the dead were left at home for several days, with no one to bury them. Everyone was afraid of dying. Schools, universities, and bars were closed, a curfew was imposed, and masks were required. Figures (1-7) are a set of images that illustrate some of the events that occurred during the era of the Spanish flu.



**Figure 1:** American Red Cross workers make face masks during the 1918 Spanish Flu pandemic [48]



**Figure 2:** A group of young people infected with the virus in a hospital in the USA in 1918 [49]



**Figure 3:** Mask-wearing women hold stretchers near ambulances in the USA in 1918 [50]



**Figure 4:** A woman wearing a flu mask during a pandemic [51]





Figure 5: New York City in 1918 [52]



Figure 6: Face masks are an ordinary sight in 1918 [53]

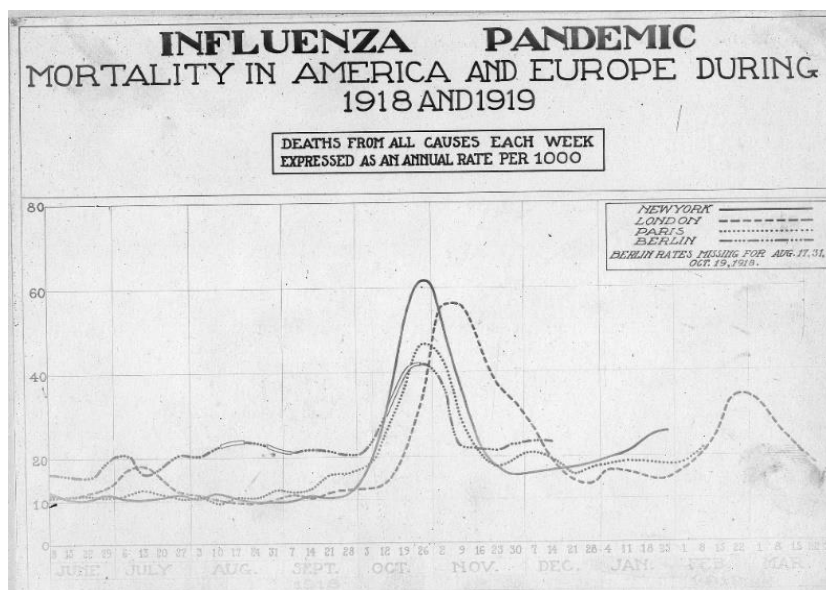


Figure 7: Picture titled (Reeve 003143) "Death in the flu epidemic in America and Europe 1918 and 1919", all-cause deaths per week are expressed as an annual rate per 1000. The chart exhibits data covering New York, London, Paris and Berlin [54]

### 3. CONCLUSIONS

History tells us that epidemics are continuous and do not stop and move quickly from one place to another, as happened with COVID-19. The critical question is, does the world have the ability to face another pandemic despite the presence of vaccines that helped save the lives of citizens, and also not forget about the existence of modern technology that immensely helped health care workers track cases of the spread of the virus. In short, we must prepare and expect another virus to appear in the future by preparing the appropriate quarantine and using modern technology, including artificial intelligence, which has played a significant role at the present time, especially in the medical field, and educating citizens on prevention and adherence to health and hygiene procedures.

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