



Lessons from America's Experience with the Influenza Pandemic of 1918-20

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Introduction

Harry Truman said, "the only thing new in the world is the history you don't know." However, I believe, while history may repeat itself, it does so imperfectly. With that caveat, I would like to examine what we might learn from my understandings of the 1918-20 influenza epidemic that can be applied to the current COVID-19 outbreak. (Note: there is no commonality in influenza viruses and corona viruses. They are as different as elephants and buffalos.) However, there are parallels between the influenza epidemic and the current COVID -19 outbreak. Both viruses had not been seen previously in human populations. As a result, both the 1918 population and our present population did not seem to have any natural immunity to the viruses. Both viruses were easily transmitted from person to person by airborne droplets and possibly from surfaces where the droplets have landed. They also pass from person to person by physi-

cal contact. Given these analogous characteristics, it is useful to examine what is known about the 1918-20 epidemic to look for possible occurrences that may occur in 2020 and later. The importance of doing this is to recall that the influenza outbreak infected an estimated 30 million Americans and killed 675,000. [1]. If the same rates were to occur in the current epidemic, 100 million would be ill and 2,000,000 would die.

Viruses are constantly mutating and epidemics change with the mutations

The influenza outbreak in the United States began in the spring of 1918 and swept through World War I military camps and civilian areas near the camps. The disease was mild and only lasted 3-4 days. There was debate as to whether the condition was influenza because of the short course of the disease



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[1,2]. It seemed to disappear over the summer and the epidemic was considered to be over. By September it returned with a vengeance having apparently mutated to a more deadly form. Many fell gravely ill and many died. Deaths in the second wave appeared to constitute most of the fatalities in the epidemic. This wave's mortality rate may have been as high as 6-7% in those who were infected in comparison to the usual influenza rate of 0.1%. The third wave began in the winter of 1918-19. with an illness that was severe but less fatal. This is suggestive of the outbreak having reverted to something resembling a usual flu season. The difference in the three waves suggests

that the virus mutated from causing a mild Influenza to one of extraordinary lethality and back to a traditional outbreak [3].

The previous paragraph reads as if the Influenza's three waves were occurring simultaneously across the country. Actually, they happened at different times in different places. Some parts of the country did not get through the third wave until 1920 [1]. This is similar to the current outbreak. The United States experienced a northern/northeastern COVID-19 outbreak in March, April and May but had a south/south/western outbreak June and July (See Table 1.)

Table 1: Changes in COVID-19 cases per day for high number of case states in North/Northeast States and South/Southwest States from March 1, 2020 to May 31, 2020 compared to June 1, 2020 to July 31, 2020.

	Number of cases from March 1 to May 31	Cases per day	Number of cases July 31*	Increase in June 1 to 31 July*	June cases per day in June and July
North/Northeast states					
New York	371,711	4040	415,767	44,056	722
New Jersey	160,445	1744	182,029	21,584	354
Massachusetts	96,965	1054	117,612	20,647	338
Pennsylvania	71,926	782	112,048	40,122	658
Illinois	120,260	1307	178,837	58,577	960
Michigan	57,307	623	81,621	24,314	399
Connecticut	42,499	462	49,810	7,311	120
South/southwest states					
California	113,006	1238	500,130	387,124	6346
Texas	64,287	699	420,946	356,659	5847
Florida	56,163	610	470,386	414,223	6791
Arizona	19,393	211	174,010	154,617	2535
Alabama	17384	189	86,780	69,396	1138
Georgia	46,554	506	186,352	139,798	2292
North Carolina	27915	303	122,148	94,233	1545

Source: MSN News found at: <https://www.msn.com/en-us/news/coronavirus>
This may vary plus or minus one day because of state reporting dates.

What viruses do is mutate.

COVID-19 apparently started in China where it infected over 80,000 persons most of whom lived in a city of 11,000,000 people. There is evidence that this virus mutated after it reached Europe into a much more transmissible form that led to rapidly developing local epidemics [4]. This variant entered the United states through East coast airports and spread rapidly throughout the country. There is every likelihood the virus will mutate again. What we see now may well be a mild form which is a precursor of a future, more lethal variant or it may mutate into form that does not cause disease and only will be of interest to future virology researchers. Our current form of the virus is easily transmissible. A mutated form may become more or less transmissible. If it mutates in a more lethal form or in a more transmissible form, our current steps to control the spread of COVID-19 may have to be repeated long after an outbreak seems to be over because another strain of the virus may have arrived. The lag period may be several months. So, our best hope may be that vaccine researchers can develop a multi- strain corona virus vaccine before the lag time is over.

Social breakdown

During 1918-20, people withdrew into their own small circles of close family and household members. People did not help their neighbors and volunteering for community betterment was close to nil. Some children, orphaned by the disease, were left to fend for themselves [1,5]. Bodies were left where they died because no one would volunteer to touch them. Food was hoarded and those with food would not share with the hungry. We saw the beginning of this occur as we watch the toilet paper hoarders, bottled water collectors, hand sanitizers grabbers, etc. On a larger scale we see richer states and countries outbid less affluent ones for masks, ventilators, personal protective equipment and other vital treatment needs. Both of these responses subsided but have flared up again as discussion begin over who can obtain the partially successful antivirals and potential vaccines. However, there are large numbers of ordinary citizens who are delivering meals, volunteering at food banks, socially distancing, wearing masks to protect others, shopping for their elderly neighbors and calling friends and family to cut down on their loneliness. The cell phone companies have reported that

there are twice as many phone calls being made every day than there are on Mother's Day – customarily the busiest phone day of the year. Keep up these good works [5].

Doctors were silver and nurses were gold

In 1918-20, physicians were poorly trained and relied on, experience, intuition and folklore. Bleeding of patients was still practiced as a way of ridding the body of “poisons” [1]. However, physicians provided hope and reassurance. There were no medications for treating viruses (nor would there be for 65 years) or for the pneumonias that resulted from the viral infection. Nurses offered the supportive care that allowed people to survive long enough to recover from the onslaught of the virus. They fed patients, provided fluids, kept them clean, changed their beds, eased their concerns and informed their families. (1, Nurses were always in demand and had one of the highest mortality rates [1,5]). Physicians now have a scientifically based education. They have a wide variety of tools including diagnostic tests, oxygen, antibiotics for secondary infections, and ventilators. They use these to create complex treatment plans and monitor the outcomes to determine if the plans need altering. However, these tools are usually administered by nurses, respiratory therapists, nurse assistants, orderlies and other technicians in rooms kept clean by the housekeeping staff. This epidemic is a team sport and everybody on the team gets a gold medal.

The perceived social value and wage scale was turned upside down

The most important people in the influenza epidemic were those who kept the population fed, like grocery store workers and those who delivered the food to the groceries. Police kept disorder in check and, in some places, were the ones who hauled away the dead [1]. Politicians, executives, investors, etc. had little effect on the problems associated with the epidemic. The lesson for the current time is that our basic survival needs are met by the low end of the wage scale. Grocery workers, truck drivers, sewer maintenance personnel, public water supply workers, garbage collectors, police, EMTs, firefighters, electrical and gas supply technicians, etc. Imagine what your life would be like if, when you flushed, it did not go away, if your stove did not go on when you turned the dial, or a summer in the south without air conditioning or winter in the north without a gas furnace. The irrelevance of the high end of the income scale is best illustrated by what would happen to your life if the truck driver, or the truck unloader, shelf stocker, cashier, etc. did not show up at your grocery this month versus what would happen as the CEO of the grocery chain never came to work. Newspaper reporters are critical to our survival when we are forced to live at the most basic level. Newspapers will tell us what we need to know about our local environs and they will not be replaced by 30 second local stories on TV news, the purpose of which is to interrupt commercials. Because so many of us have abandoned print sources of information, the workers who maintain internet and cable systems are essential to keeping us informed about the larger world. However, they only tell us what is happening in places that are not close to us.

Misinformation was rampant

During the influenza outbreak the country was at war and news of the epidemic was suppressed because it was thought that our enemies would perceive weakness in our soldiers and attack them in France. Naval vessels were often unable to carry out their missions due to lack of healthy sailors. Of course, our enemies were suffering from the same disease and were not publicly acknowledging it for the same reason. As a result, national leadership was directed toward suppression of information and deciding that it was not in the national interest to talk about the epidemic. So, Information and actions to alleviate the epidemic were local and sporadic. They were based on the competence and knowledge of local decision makers. Local leaders often behaved like national leaders and wanted to suppress anything that would hurt the local economy. Individual citizens based their actions and beliefs on what they saw in their neighborhoods. When illness and death occurred to their neighbors and friends, they knew that they were being lied to by their leaders.

It is unlikely that there will ever be a national perspective on the epidemic. Grieving New Yorkers, Texans and Floridians have a different view of the outbreak than those in less affected regions where denial can flourish. Another lesson for today is that piecemeal responses that vary by city or county or state and ignore the porous nature of city limits and state borders will only assist the spread of the virus. Having one state issue stay-at-home orders while its neighboring state relies on rhetoric for control of the virus or saying that there should be no large gatherings except for those in churches is like setting aside a section of a swimming pool for people to urinate. Denials, providing false hope, timidity and allowing political calculation to substitute for science assures that necessary information will be not heeded and conspiracy theories will blossom.

Conclusion

The 1918-20 epidemic and its current parallels may be telling us that we will be more likely to be saved by a mutating virus than by the actions of many of our political leaders.

Conclusion

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