



Retrospect and Context: One Scientist's Thoughts on Comparing COVID-19 to the 1918 Flu Pandemic

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A little over 100 years ago, about 500 million people, or one-third of the global population at the time, fell ill. At least 50 million died, with 675,000 deaths occurring in the U.S.¹

Today, the COVID-19 pandemic is frequently compared with the influenza pandemic of 1918-1919. The destruction caused by that pandemic a century ago may sound familiar. Yet, direct comparisons of the 1918 flu pandemic and the COVID-19 pandemic may not be completely fair, according to one scientist.

While we've had a century to study influenza, our understanding of COVID-19 is just beginning to take shape, says Amit Srivastava, PhD, a Senior Director in Vaccines Medical

Affairs at Pfizer, and the lead in Emerging Markets (Latin America, Africa & Middle East, Asia & China) for COVID-19 and mRNA vaccines. “We have only known SARS-CoV-2 since 2019,” he says. “So the certainty with which some people, including scientists, talk about what we understand about the virus and what it is doing is a bit disconcerting to me.”

The 1918 flu pandemic did most of its damage in three waves that occurred in the spring, fall, and winter of 1918. It ebbed in the spring of 1919, although some historians believe a fourth, much less virulent, wave continued into 1920.² We know that the COVID-19 pandemic also has occurred in waves, with the timing dependent on location. In the U.S., the first significant wave crested in the spring of 2020 in the Northeast, followed by a summer surge in the South and Midwest. A third surge engulfed the country in the winter of 2020, finally slowing with the advent of vaccines. However, emerging SARS-CoV-2 variants—Delta, most recently —contributed to additional surges, especially in regions with large unvaccinated populations.³

In the U.S., adults aged 50 to 64 have been hospitalized due to COVID-19 at a rate four times higher than that of adults between 18 and 29 and dying at a rate 35 times higher than that of their younger counterparts.⁴ This wasn't necessarily the case a century ago with influenza. An interesting and commonly cited assertion about the 1918 flu pandemic is that it proved more deadly to healthy young adults than to older people, at least in the first wave of disease. One theory is that younger people were more susceptible to the 1918 flu virus because they weren't exposed to similar flu strains making their way through the population decades earlier, in the late 1800s. These earlier strains may have “imprinted” on those who lived during that time, offering them some protection from the 1918 virus.⁵ This hypothesis is debatable, according to Srivastava, who feels that part of the flu's disproportionate impact on young people simply may have been due to circumstance. Many of the dead were World War I soldiers who were moving around and bunking in crowded military bases. They were susceptible to infection, and military units could be easily tracked and counted. On the other hand, much of the rest of the population stayed in place due to the war, minimizing the potential to be infected, and it was harder to track and count them accurately. The flu vaccine was still decades away, and testing was nonexistent.

“We're talking about young individuals who were in a congregate setting at a time when vaccination overall was not that prevalent,” he says. “We didn't fully know about disease spread as much. We knew about hygiene but didn't understand that with a highly transmissible virus, basic sanitation measures such as hand washing weren't going to cover you.”

Had certain conditions that occurred during the 1918 flu pandemic been replicated a century later, Srivastava suggests, we might have seen a greater impact of COVID-19 on young adults. Instead of living side by side in crowded military barracks, though, young adults in 2020 were in lockdown, with many college campuses empty or offering a highly restricted level of activity. Schools that were less restricted or where students socialized at parties and nearby bars saw case numbers spike, sometimes drastically.

The basic biology of the SARS-CoV-2 virus means it can and will infect young people, Srivastava insists. While they experience fewer bad outcomes than do older adults, COVID-19 nevertheless has sickened and killed thousands of people between 18 and 29 years old.⁶

Despite the disparity in circumstances of young people in 1918 and in 2020, much about our understanding of transmission prevention--and the backlash against it--has not changed over time. As the flu raged 100 years ago, citizens were advised to don masks, much as they've been asked to do today, and were not allowed into public places without them. And just as we've seen this past year, some anti-mask advocates railed against these edicts in the early 20th century.⁷ Spaces such as theaters and churches were closed to prevent disease spread, and some lobbied the government to ban coughing and sneezing in public.⁸

Banning the excretion of respiratory fluids in public may be an extreme measure, but adopting mask usage and restricting large indoor gatherings and closing nonessential businesses such as gyms and bars⁹ goes a long way toward preventing potentially infected particles from spreading from person to person. "Though the larger economic impact of these interventions is an unmistakable challenge, we can take these actions along with invoking sophisticated interventions like vaccines," Srivastava says. "It takes time for vaccines to exert their beneficial effect in the community. There is a lot we can do as a supplement to vaccination to help end a pandemic."

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