

THE INFLUENZA PANDEMIC OF 1918: ITS ROLE IN SHAPING PUBLIC HEALTH AND
HIGHLIGHTING INTERSECTIONAL DISPARITIES

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During the COVID-19 pandemic in 2020, the United States experienced a dramatic shift in both healthcare practices and sociological relationships with the techniques of masking and the prominence of the Black Lives Matter movement. Much like the recent pandemic, the influenza pandemic of 1918 also revolutionized how individuals perceived sickness, gender roles, and even different races. The 1918 pandemic displayed the effectiveness of public health practices we see today such as quarantines and masking and raised questions about how different people groups are treated as a result of a fatal widespread event. Those involved in treating the pandemics' copious victims had to combat higher levels of exposure and discrimination while also determining when to apply various non-pharmaceutical interventions. Although the influenza pandemic of 1918 proved to be one of the deadliest in history and did not result in the immediate formation of a vaccine because of limited knowledge of virology, it did highlight the significant flaws in healthcare including gender and racial disparities in the medical field and inpatient care and ushered in a new era of public health interventions in the United States that influences society today. While there have been significant strides in healthcare since the early 20th century, there is still work to be done to combat discrimination against women and people of color.

Before discussing the many facets of social change that resulted from the pandemic, one must first understand the magnitude of its effects. This contextualizes how this worldwide event generated multiple levels of medical and social change in the U.S. The pandemic, which first appeared in the spring of 1918, contributed to the deaths of around 21-50 million people worldwide, and around 675,000 people in the United States alone.¹ This means

¹Sarah Fujimura, "Purple Death: The Great Flu of 1918," *Pan American Health Organization, Perspectives in Health*, 8, no. 3 (March 2003), <https://www.paho.org/en/who-we-are/history-paho/purple-death-great-flu-1918#:~:text=Despite%20its%20name%2C%20researchers%20believe,breeding%20ground%20for%20the%20virus.>

that the widespread global crisis “contributed to more U.S. casualties than World War I, World War II, the Korean War and the Vietnam War combined.”² A disease-related event this deadly had not happened for generations prior and would not occur again on this large of a scale until the modern COVID-19 pandemic, not including the HIV/AIDS pandemic.

Although the popular moniker the “Spanish Flu” is commonly employed when discussing the pandemic, this label proves to be both a discriminatory and misleading name. Most researchers believe that the deadly virus originated in the U.S., with one of the first cases recorded on March 11, 1918, at Fort Riley in Kansas.³ The global spread was primarily due to U.S. military efforts during World War I, as the soldiers who got the virus in Fort Riley then made their way to Europe, taking the virus and its fatal consequences with them. Spain was one of the only countries at the time that reported their millions of casualties as they did not participate in wartime censorship during World War 1.⁴ Thus the names “Spanish Flu” or “Spanish Lady” were adopted, leading to the incorrect association of an entire foreign country with a virus.

While the name “Spanish Flu” does contribute to the pandemic’s infamy, the symptoms and populations it affected also made this specific influenza pandemic stand apart from others before and after it. It started like any other influenza case, with a sore throat, chills, and fever, however, what made it so deadly was how it affected the victim's lungs: “sometimes within hours, patients succumbed to complete respiratory failure, their lungs so full of fluid that victims literally drowned.”⁵ Not only were the symptoms unprecedented and abnormally fatal, but the age groups affected were also unusual. This type of flu attacked strong, healthy

²Fujimura, “Purple Death: The Great Flu of 1918.”

³Fujimura, “Purple Death: The Great Flu of 1918.”

⁴Fujimura, “Purple Death: The Great Flu of 1918.”

⁵Fujimura, “Purple Death: The Great Flu of 1918.”

adults most often, in contrast to typical flu cases that usually target older populations and those that are immunocompromised.⁶ This set it apart from other pandemics, forcing medical and public health officials to quickly react with multiple non-pharmaceutical interventions as there was no vaccine. With this general knowledge of the global pandemic and its strange features, we gain a better understanding of why and how it changed public health systems and highlighted disparities in healthcare.

Although the germ theory had been established and medical professionals understood what bacteria was during this period, little was known about virology and the scientific basis of influenza. This led to the implementation of non-pharmaceutical interventions, extensive research on the mysterious cause, and highlighted the desperate need for the development of a vaccine. The major interventions that were employed to decrease transmission were the quarantine of infected households, closure of schools, bans on public gatherings, and other measures such as masking.⁷ The logistics of the timing of these interventions provide valuable insight for public health officials today in understanding how the number of interventions and their duration affects the spread and potential additional waves of disease.

A study of 17 cities across the U.S. revealed that cities with early application of non-pharmaceutical interventions, such as those listed above, had “peak death rates $\approx$ 50% lower than those that did not and had less-steep epidemic curves.”⁸ In addition to providing the knowledge that early interventions limit the spread of the virus, the pandemic also highlighted the importance of requiring more than one method of transmission control. During the study

⁶Fujimura, “Purple Death: The Great Flu of 1918.”

⁷Richard J. Hatchett, Carter E. Mecher, and Marc Lipsitch, “Public Health Interventions and Epidemic Intensity during the 1918 Influenza Pandemic,” *Proceedings of the National Academy of Sciences* 104, no. 18 (May 2007): 7582–87, <https://doi.org/10.1073/pnas.0610941104>.

⁸Hatchett, Mecher, and Lipsitch, “Public Health Interventions and Epidemic Intensity during the 1918 Influenza Pandemic.”

period from September to December of 1918, the researchers found that cities that implemented four or more non-pharmaceutical interventions had lower peak weekly death rates than cities with fewer interventions.⁹ Lastly, this study explained that most of the non-pharmaceutical interventions in the study cities were relaxed within 2–8 weeks.¹⁰ Because opportunities for reintroduction and transmission of the pandemic virus extended for many months, second and third waves of the pandemic continued to ravage the U.S.. Overall, research on this pandemic reveals that the application of multiple non-pharmaceutical interventions early on is successful in lowering death rates, however, disease will continue to attack populations when interventions are relaxed. The findings from this study directly inform public health professionals today about when and how long to implement interventions when facing future pandemics.

While the success rates of infection control measures informed public health officials on when to enact a range of interventions, bans on public gatherings specifically highlighted the consequences of pandemics in an increasingly interconnected society. The pandemic revealed that although isolation of the sick was essential, quarantine measures had to be accompanied by broader measures such as these bans to regulate the “congestion” of public spaces.¹¹ The years leading up to the pandemic were characterized by the second Industrial Revolution. This era of U.S. history gave rise to the expansion of the railroad system and increased urban to rural migration, both of which added to the unprecedented size of the populations affected. Therefore, one of the most important lessons taught by the pandemic

⁹Hatchett, Mecher, and Lipsitch, “Public Health Interventions and Epidemic Intensity during the 1918 Influenza Pandemic.”

¹⁰Hatchett, Mecher, and Lipsitch, “Public Health Interventions and Epidemic Intensity during the 1918 Influenza Pandemic.”

¹¹Nancy Tomes, “‘Destroyer and Teacher’: Managing the Masses during the 1918–1919 Influenza Pandemic,” *Public Health Reports* 125, no. 3 (April 2010): 48–62, <https://doi.org/10.1177/00333549101250S308>.

was the realization that interventions that were most successful in preventing disease transmission—bans on public gatherings and school closures, among other measures—were the most difficult to implement in a “modern mass society.”¹² Regardless of how difficult they were and continue to be, studies show that early bans on public gatherings were also associated with lower peak excess death rates during the pandemic.¹³ This led to what we now understand as an essential strategy in mitigating pandemics: limiting interaction between the masses. While the disease was traumatic and led to the deaths of thousands, some called it the “great teacher” because the influenza pandemic highlighted the unforeseen issues of disease prevention in “a mass society connected by new forms of public education, transportation, and amusement.”¹⁴

While interventions are effective health measures, they will not solve every epidemiological problem.¹⁵ This is why extensive research on the origins of the virus and vaccine trials are vital in revolutionizing public health and healthcare. In addition to the non-pharmaceutical interventions, research on influenza led to the eventual creation of certain antibiotics that constitute the foundation of medicine in society today. At the time, the search for the cause of the 1918 influenza epidemic focused on bacteria, specifically Pfeiffer's bacillus (*Haemophilus influenzae*).¹⁶ In fact, researchers were so confident in the germ theory of disease that

¹²Tomes, ““Destroyer and Teacher.””

¹³Hatchett, Mecher, and Lipsitch, “Public Health Interventions and Epidemic Intensity during the 1918 Influenza Pandemic.”

¹⁴Tomes, ““Destroyer and Teacher.””

¹⁵A.A. Conti “Quarantine Through History”, *International Encyclopedia of Public Health* (August 2008): 454-462. [10.1016/B978-012373960-5.00380-4](https://doi.org/10.1016/B978-012373960-5.00380-4).

¹⁶Andrew Noymer and Michel Garenne, “The 1918 Influenza Epidemic’s Effects on Sex Differentials in Mortality in the United States,” *Population and Development Review* 26, no. 3 (September 2000): 565–81, <https://doi.org/10.1111/j.1728-4457.2000.00565.x>.

“influenza's microbial identity was accepted without question.”¹⁷ While influenza is not specifically caused by bacteria and instead a virus, it was in his research on the supposed bacterial origins of the 1918 flu that Alexander Fleming made his 1929 discovery of the antibiotic properties of *Penicillium*.¹⁸ This led to the eventual development of Penicillin, one of the most commonly used antibiotics to treat bacterial infections. By performing extensive research on the immunology of influenza, researchers revolutionized medicine and eventually developed a vaccine for the virus in the following decades.

Today, our public health and healthcare systems have been transformed because of these non-pharmaceutical interventions and medicinal discoveries. During the COVID-19 pandemic, with the knowledge of the effectiveness of public bans and quarantine, public health officials implemented mandates across the country. In addition, the influenza virus reminds us how difficult disease prevention and control are to enforce in modern societies as seen with anti-masking campaigns and refusals to practice social distancing. Regarding virology, the Spanish influenza confirmed the importance of droplet and contact infection in the transmission of disease.¹⁹ Most importantly, the 1918 pandemic led to the knowledge of what viruses are and how to combat them with vaccines.

In addition to the public health insights generated by the pandemic, it also highlighted changes in the social roles of women as well as gender and racial disparities within healthcare and inpatient care. Analyzing how these influenced society during and after the pandemic provides insight into what needs to change for future pandemics. At the time of the 1918 pandemic, the effects of male participation in World War I and the “maleness” of those

¹⁷Tomes, ““Destroyer and Teacher.””

¹⁸Noymer and Garenne, “The 1918 Influenza Epidemic’s Effects on Sex Differentials in Mortality in the United States.”

¹⁹Tomes, ““Destroyer and Teacher.””

involved became increasingly influential in the lives of women in the U.S.²⁰ As more soldiers went overseas and lost their lives at war, the pandemic's disproportionate effects on men exacerbated the already declining number of male participants in the economy. A study published in the National Library of Medicine revealed that one explanation for these sex differentials in mortality during the pandemic was the added burden of tuberculosis (TB) at the time. The researchers found that those with TB in 1918 were more likely to die of influenza and that this "affected males more than females because TB morbidity was disproportionately male."²¹ The combination of men leaving to fight in WWI and their heightened mortality rates due to increased TB incidence led to increased female participation in the workforce.

One of the major fields that women found themselves working in during the 1918 pandemic was healthcare, more specifically nursing. This explosion of women in the workforce was not only a result of the lack of men to provide for their families at home but occurred because of the idea that women were inherent caregivers and the extreme shortage of nurses.²² Societal expectations of women to provide care presented a gender disparity in healthcare that has not been frequently discussed. Broadly, ideas about duty to care during the pandemic were gendered in three specific ways: first, "presumptions about women's innate caregiving skills", secondly, "moral claims about women's obligation to provide care", and

²⁰Noymer and Garenne, "The 1918 Influenza Epidemic's Effects on Sex Differentials in Mortality in the United States."

²¹Noymer and Garenne, "The 1918 Influenza Epidemic's Effects on Sex Differentials in Mortality in the United States."

²²Allison Jennings-Roche et al., "The 1918 Influenza Pandemic in Popular Media and the Roles of Public Libraries in Supporting Health Information Access, Health Literacy, and Health Justice during Pandemics: Learning from the Past to Prepare for the Future," *The Library Quarterly* 93, no. 1 (January 1, 2023): 86–109, <https://doi.org/10.1086/722550>.

thirdly, a “lack of recognition of women’s work and authority.”²³ While women were expected to join the pandemic response as innate caregivers, they received very little recognition for their disproportionately deadly work in nursing. Even today, women comprise “90% of patient-facing global healthcare workers”, meaning that women now and during the 1918 pandemic were at a higher risk of contracting illness due to direct interaction with sick patients.²⁴ This highlights that the gender disparities in inpatient care should be addressed to prevent its occurrence in future pandemics such as COVID-19.

In addition to the moral obligations associated with women’s participation in the pandemic response, the nursing shortage also contributed to the increased role of women in healthcare and society in general. As the virus spread, “states like Massachusetts and Illinois began to request special appropriations for the study of influenza treatment and to train women as ‘practical nurses’ in response to the nursing shortage.”²⁵ However, the cause of this nursing shortage was intertwined with discriminatory hiring practices. While the deployment of nurses to military camps was one of the origins of the shortage, it was also magnified because of the failure to use trained African American nurses in white inpatient environments.²⁶ This is not to say, however, that no civil rights progress was achieved. Efforts made by “Black leaders for admission of Black nurses to the Red Cross, the Army Nurse Corps, and the Navy Nurse Corps during World War I” eventually led to eighteen Black nurses serving in the army during the

²³Rebecca Godderis and Kate Rossiter, “‘If You Have a Soul, You Will Volunteer at Once’: Gendered Expectations of Duty to Care during Pandemics,” *Sociology of Health & Illness* 35, no. 2 (February 2013): 304–8, <https://doi.org/10.1111/j.1467-9566.2012.01495.x>.

²⁴ Georgina Phillips et al., “Women on the Frontline: Exploring the Gendered Experience for Pacific Healthcare Workers during the COVID-19 Pandemic,” *The Lancet Regional Health - Western Pacific* 42 (January 2024): 100961, <https://doi.org/10.1016/j.lanwpc.2023.100961>.

²⁵Jennifer D. Roberts and Shadi O. Tehrani, “Environments, Behaviors, and Inequalities: Reflecting on the Impacts of the Influenza and Coronavirus Pandemics in the United States,” *International Journal of Environmental Research and Public Health* 17, no. 12 (June 22, 2020): 4484, <https://doi.org/10.3390/ijerph17124484>.

²⁶Roberts and Tehrani, “Environments, Behaviors, and Inequalities.”

pandemic.²⁷ In doing so, this demonstrates that the pandemic “incrementally advanced civil rights in the Army Nurse Corps and Red Cross, while providing [slightly increased] opportunities for Black nurses overall”.²⁸ In summary, although women were able to obtain more economic freedom and help their country through their work as nurses, there were still racial disparities present in these inpatient care occupations.

During this period, Black Americans struggled against a segregated society and prejudices that influenced the care and services they received. The 1918 pandemic heightened the existing characterization of Black Americans as diseases, an idea “reinforced by contemporary newspaper headlines, such as ‘Negros Arrive by Thousands—Peril to Health’; or ‘Negro Influx Brings Disease’”.²⁹ However, the idea that Black Americans were diseased was the opposite of the true racial demographics of the populations most affected by influenza. A study done on race and the pandemic found that Black people had a lower risk of contracting the virus after being exposed.³⁰ However, this seemingly positive statistic is misleading; “when they did get sick, they had a higher risk of dying”.³¹ This disparity was due to the inferior treatment that they received compared to their white counterparts. Across the country, Black Americans received “substandard care in segregated hospitals or in confined hospitals that served only African Americans”, resulting in the deaths of thousands because

²⁷Marian Moser Jones and Matilda Saines, “The Eighteen of 1918–1919: Black Nurses and the Great Flu Pandemic in the United States,” *American Journal of Public Health* 109, no. 6 (June 2019): 877–84, <https://doi.org/10.2105/AJPH.2019.305003>.

²⁸Jones and Saines, “The Eighteen of 1918–1919.”

²⁹Roberts and Tehrani, “Environments, Behaviors, and Inequalities.”

³⁰Helene Økland and Sverre-Erik Mamelund, “Race and 1918 Influenza Pandemic in the United States: A Review of the Literature,” *International Journal of Environmental Research and Public Health* 16, no. 14 (July 12, 2019): 2487, <https://doi.org/10.3390/ijerph16142487>.

³¹Økland and Mamelund, “Race and 1918 Influenza Pandemic in the United States.”

doctors and nurses could not treat them all.³² While it may seem as though Black Americans had the statistical advantage of lower disease incidence; they faced a poor healthcare infrastructure that was only focused on helping white patients. Reflecting on racial differences in healthcare during the 1918 pandemic can inform society today on strategies to combat unequal access to treatment.

Although the fatal nature of the influenza pandemic was intensified due to insufficient knowledge of virology, it did lead to the advancement of public health systems and medicine through the successful implementation of non-pharmaceutical interventions and the eventual discovery of Penicillium. In addition, while women were able to contribute to the workforce and pandemic response through nursing practices, they found themselves in closer proximity to the disease and discrimination played a major role in hiring practices and patient care. Responses to epidemics and other public health emergencies can be considered potential opportunities to advance health equity.³³ This widespread event allows us to recognize the work that needs to be done to bridge the gaps in women's experiences in nursing and address racial inequalities in medical care. In doing so, society will be able to limit the intersectional disparities associated with pandemics and improve quality of life as seen with the success of public health interventions.

³²Roberts and Tehrani, "Environments, Behaviors, and Inequalities."

³³Roberts and Tehrani, "Environments, Behaviors, and Inequalities."

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