

The Great 1918 Flu Pandemic and its Impact on Louisville

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This year marks the centenary of the Great 1918 Flu Pandemic, a period of worldwide illness and death that overlapped and intertwined with the terror of World War I. The flu infected some 500 million people, about one-third of the world population, with what we now know was an H1N1 virus. At least 50 million people, about one-tenth of those infected, perished from the flu over the course of two years. Just as the First World War cut short the lives of many young men, the Great 1918 Flu Pandemic preferentially claimed the lives of young adults between the ages of 20 and 40 years old. My hometown of Louisville, Kentucky, was not spared.



Sisters who served in the emergency hospitals, Camp Zachary Taylor, Louisville, KY, with Father Regis Barrett

Photo courtesy of University of Louisville Photo

As a former treatment operator for Louisville Water, I have been privileged to work for over four decades in an essential area of public health protection: the provision of safe drinking water. Excellent water quality is one of the hallmarks of my city and one that led to a connection to the 1918 Flu Pandemic.

The Crescent Hill Filtration Plant opened in 1909, featuring what was then a state-of-the-art water filtration system. In 1914, we stepped up our game with chlorination,¹ a life-changing technology that was reducing rates of waterborne illnesses in cities all over the country. Louisville water quality was so impressive, that in the summer of 1917 the U.S. government established a large artillery training base, Camp Zachary Taylor, on the city's outskirts. This project unwittingly set the stage for a local outbreak of the pandemic flu.

"They Buckled on the Armor of God"

In "They Buckled on the Armor of God: Kentucky Catholic Sister 'Nurses' in the 1918 Flu Pandemic,"² nurse educators Sara Bolten and MaryAnn Thompson describe the role of Kentucky Catholic nuns in caring for the flu-stricken soldiers of Camp Taylor. They report that the first cases of flu in Kentucky appeared in September 1918 at the camp where over 40,000 troops were stationed to train for the European battlefields. This period corresponds with the second, and most severe, of three waves of flu that occurred in the United States between January 1918 and the winter of 1918-1919. "Within a week of the first cases being diagnosed," they write, "thousands of soldiers were ill, and the base hospital was quickly overwhelmed. By the end of September, 20% of the barracks had been converted to emergency hospitals, and urgent appeals went out for additional nurses." That scenario repeated itself in military training camps across the country and the flu quickly spread to populations surrounding the camps. [According to the Centers for Disease Control and Prevention \(CDC\)](#), more than 100,000 Americans died of the flu during the month of October 1918 alone.

A Catholic chaplain at the camp, Father Regis Barrett, responded to the appeal by conducting an aggressive search for "sisters" in and around Louisville. In all, the priest recruited 88 nuns, who reported to the camp in early October 1918 to care for the sick. The sisters were not all trained nurses; most were teachers, but the nurses

¹Louisville Water, *Safety Improvements at Both Water Treatment Plants*. Online, available: <http://louisvillewater.com/newsroom/safety-improvements-both-water-treatment-plants>

² A presentation of M. Thompson and S. Bolten, both of McKendree University, Kentucky Campus.

among them provided on-the-job training. The women worked 12-hour shifts, seven days a week. At least 22 of the sisters contracted the flu, and one sister died of her illness. She was given a military funeral at Camp Taylor.

A Killer Flu

The highly contagious flu was spread in mucous droplets from sneezes and coughs and often progressed into pneumonia. Trench warfare may have aided the flu enemy. As Byerly (2010) states, "World War I and influenza collaborated: the war fostered disease by creating conditions in the trenches of France that some epidemiologists believe enabled the influenza virus to evolve into a killer of global proportions." Evolutionary biologist Paul Ewald postulates, according to Byerly, that as soldiers in the trenches became sick, they were evacuated and replaced with healthy men, offering the virus a continual supply of new hosts in which it could "adapt, reproduce, and become extremely virulent without burning out."³

Infection Control in 1918

In 1918 medical experts thought flu was bacterial in origin; viruses had not yet been discovered. Nevertheless, "advice to curb infection was relatively accurate."⁴ For example, the Minnesota State Board of Health recommended using handkerchiefs to cover sneezes and coughs, getting plenty of fresh air, avoiding the sick and crowds, and contacting a physician if ill.⁵ [CDC reports](#) New York City had an ordinance that fined or jailed people who did not cover their coughs. The city of St. Paul introduced new laws to require dishes and cups in restaurants and bars to be sanitized; roller towels and common drinking cups in public restrooms were banned.⁶

Get Your Flu Vaccine

In today's world, we are fortunate to have influenza vaccines to prevent the flu or reduce flu symptoms. This vaccine changes each year as the influenza virus mutates; therefore, it is important for everyone to get an annual flu vaccine. This vaccine saves lives of children, adults and the elderly.

What infection control measures did the sisters at Camp Taylor and other caretakers in the military camps employ? Byerly notes quarantines in the military were almost impossible to maintain. There were no flu vaccines, antiviral drugs or antibiotics to treat secondary illnesses such as pneumonia. There were: daily inspections and temperature-taking, patient isolation, face masks and gowns for attendants, good ventilation, screening between beds, prohibition of indoor gatherings, nose and throat sprays (with a solution of "dichloramine-T"⁷) for the healthy, and experimental vaccines (although these were ineffective against viruses). Nevertheless, the Army Medical Department conceded that these measures only *slowed* the progress of the epidemic. In the end, the flu and pneumonia killed more members of the U.S. military than enemy weapons during the Great War.

The confluence of a world war and a pandemic flu reduced U.S. life expectancy by about 12 years, [according to CDC](#). A century later, we can appreciate how this worldwide calamity sparked a greater awareness of the horrors of war, the importance of infection prevention, and the synergies between war and infection. These lessons are not lost on Louisville.

Steve Hubbs grew up on the re-purposed grounds of Camp Taylor. He retired from water treatment operations at the Louisville Water Company in 2004. He remains an active volunteer in the drinking water community today.

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³ Byerly, C.R. (2010) "The U.S. Military and the Influenza Pandemic of 1918-1919," *Public Health Reports*, 125 (Suppl 3): 82-91.

⁴ Ott, M., Shaw, F.S., Danita, R.N., and Lynfield, R. (2007). "Lessons Learned from the 1918-1919 Influenza Pandemic in Minneapolis and St. Paul, Minnesota," *Public Health Reports*, 122(6): 803-810.

⁵ "Mill City closed," *St. Paul Pioneer Press* 1918 Oct. 12: 1,6, as reported in Ott et al. (2007).

⁶ "Cafes and bars hit by grip ban," *St. Paul Pioneer Press* 1918 Dec. 14: 1, as reported in Ott et al. (2007).

⁷ Dichloramine T is described as an antiseptic made of "toluene-parasulphon-dichloramine" (N-chloro-p-toluenesulfonamide) "dissolved in chlorinated eucalyptol" in Lee, W.E. and Furness, W.P., "The Use of Dichloramine-T in the Treatment of Infections and Infected Wounds," read before the Philadelphia Academy of Surgery, October 1, 1917.