

## How the Spanish Influenza Influenced the Rise of Public Health

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The effects of World War I are well-known and well-publicized today; it is nearly impossible to find anyone who has not heard about trench warfare and the mass amounts of casualties that resulted from the Great War. The even deadlier killer that followed the First World War does not have the same notoriety, however. The Spanish Influenza killed an estimated forty to fifty million people in a short period of time and revolutionized public health care across the globe.<sup>1</sup> The Spanish Flu was largely overshadowed by the First World War, and as a result many European nations, particularly England, did not dedicate enough effort, resources, or workers to protect against the incoming pandemic. The advancement and innovation of public health services between 1917 and 1921 played a crucial role in the fight against the flu and how pandemics are contained today.

Contrary to what the name suggests, it is unclear as to where the Spanish Influenza originated from. There have been many theories that attempt to specify where the influenza started, however none have been proven yet. Initially, it was believed that the flu travelled from Spain to Boston on a ship where it then migrated to the Western Front through American soldiers.<sup>2</sup> It has also been theorized that Spain's neutrality allowed it to report more frequently on the influenza than other countries that participated in the war, which is where the name most likely originated.<sup>3</sup> Spain's informative approach to the pandemic contrasted with other European countries and contributed to the perception that Spain had significantly more cases of the virus than anywhere else. Spain did not have remarkably more cases than any other country in Europe, nor was there any strong evidence to suggest that it originated there. The Allied Powers, particularly England and France, did not have the resources to fight the illness because of their involvement in the war, and instead chose to conceal the pandemic from the public to avoid panic and chaos. The different approaches to the communication of the disease were what led to the virus being named after Spain. Another plausible theory is that the Spanish Influenza originated in Camp Funston, Kansas

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<sup>1</sup> Andrea Tanner, "The Spanish Lady Comes to London: The Influenza Pandemic 1918-1919," *The London Journal* 27, no. 2 (2002): 51.

<sup>2</sup> Irene Kalnins, "The Spanish Influenza of 1918 in St. Louis, Missouri," *Public Health Nursing* 23, no. 5 (2006): 479.

<sup>3</sup> Mark Honigsbaum, "Spanish Influenza Redux: Revisiting the Mother of All Pandemics," *Lancet* 391, no. 10139 (2018): 2493.

in March of 1918. Albert Gitchell, a cook in the army, was diagnosed with the influenza on the morning of 11 March and was prescribed bed rest until he felt better – a typical recommendation for people ill with the flu. By noon the same day, 107 other soldiers had fallen ill and 522 were incapacitated within the next two days.<sup>4</sup> The doctors at the base camp reported unusual symptoms among patients that align with what is now known to be the Spanish flu. Within a week, every state in the United States reported similar cases. There were also cases of what may have been the Spanish Flu dating as far back as the winter of 1916.<sup>5</sup> A British army base in Northern France had an outbreak of what they called “purulent bronchitis” that infected many soldiers at the camp.<sup>6</sup> The conditions were ideal for the spread of a respiratory virus as the hospitals were tightly packed, soldiers already had weakened lungs from gas attacks, and there were thousands of soldiers passing through the camp on their way to other destinations.<sup>7</sup> This respiratory disease was also almost identical to the illness that swept the Aldershot barracks in March 1917.<sup>8</sup> Unfortunately, there is no way of finding exactly where or when the influenza started. Its virulence was due to the extensive movement of troops during the war, making it nearly impossible to locate an exact date or location of origin.

The Spanish Influenza was unlike any sickness that the world had experienced before. It killed forty to fifty million people and appeared to target even the healthiest.<sup>9</sup> One-third of all people under the age of thirty-five fell ill during the first outbreak in the summer of 1918.<sup>10</sup> This was unique as most viral infections mainly affected the elderly and infants because they had weaker immune systems than the rest of the population. The Spanish Influenza infected everyone, regardless of age – a characteristic in diseases that is still uncommon to this day. Two other waves followed in the autumn and winter, each with their own characteristics. The second wave arrived in autumn and is widely known to have been the deadliest of the three; it was followed by the final wave in the winter of 1919.<sup>11</sup> The Spanish Influenza killed very quickly (often within days or even

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<sup>4</sup> James Armstrong, “When the Flu Killed Millions,” *RN* 62, no. 12 (1999): 33.

<sup>5</sup> J.S. Oxford, *et al.*, “A Hypothesis: The Conjunction of Soldiers, Gas, Pigs, Ducks, Geese and Horses in Northern France during the Great War Provided the Conditions for the Emergence of the ‘Spanish’ Influenza Pandemic of 1918–1919,” *Vaccine* 23, no. 7 (2005): 940.

<sup>6</sup> *Ibid.*, 941.

<sup>7</sup> *Ibid.*, 942.

<sup>8</sup> *Ibid.*

<sup>9</sup> Tanner, “The Spanish Lady Comes to London,” 52.

<sup>10</sup> *Ibid.*, 53.

<sup>11</sup> Robert Webster, “1918 Spanish Influenza: The Secrets Remain Elusive,” *Proceedings of the National Academy of Sciences, USA* 96, no. 4 (1999): 1164.

hours of the first sign of illness) and was extremely contagious.<sup>12</sup> Some of the most severe symptoms included marked cyanosis, which caused a blue tinge to appear on the lips, ears, and cheeks and fluid to fill the lungs, profuse muscle production, and respiratory failure.<sup>13</sup> Post-mortem autopsies found that victims of the Spanish Flu had a solid red, jelly-like substance filling their lungs, and many died by drowning from the liquid build-up in their respiratory system.<sup>14</sup> The famous artist Edvard Munch painted a self-portrait after recovering from the virus that showcased the ghastly, pale features that often accompanied the flu (see appendix A). In it, he is featured in a chair next to a bed which displayed his weakened state. Recovering from the influenza often took many weeks and the sheer physical demands of recovery were exemplified in Munch's painting.<sup>15</sup>

The Spanish influenza was an airborne illness that thrived in the over-crowded and over-worked country of England. The packed cities and public transportation created the perfect environment for the flu to spread. The viral disease infected people through airdrops; in highly populated areas, this meant that simply breathing put people at risk of infection. The factories that young women worked in during the war were filled with people and the conditions that they worked in contributed to the spread of the virus. This explains why the mortality rate for young women between 1918 and 1919 was 26% higher than young men.<sup>16</sup> It is no surprise that the Spanish Influenza spread so quickly and freely in England, as the government did not embrace the growing public health sector the same way that other nations did. The most consistent recommendation supplied by the government and public health sector in England was to ignore the pandemic (although this word was rarely used) because of the fear that it would contribute to the chaos.<sup>17</sup> They believed that panic and fear increased the likelihood of contracting the virus.<sup>18</sup> In England, public health lacked the authority to impose the extreme regulations that were necessary to stop the spread of infection; they did their best by showcasing public films that focused on educating the public about proper hygiene and updating the media about the disease.<sup>19</sup> This underwhelming advice stemmed from a government that refused to provide the attention and care that civilians needed at the time, and instead chose to prioritize the war effort. The government

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<sup>12</sup> Tanner, "The Spanish Lady Comes to London," 52.

<sup>13</sup> Kalnins, "The Spanish Influenza of 1918 in St. Louis, Missouri," 479.

<sup>14</sup> Tanner, "The Spanish Lady Comes to London," 54.

<sup>15</sup> Edvard Munch, *Self Portrait with the Spanish Flu*, oil on canvas, Nasjonalmuseet, The Fine Art Collections.

<sup>16</sup> Tanner, "The Spanish Lady Comes to London," 56.

<sup>17</sup> *Ibid.*, 58.

<sup>18</sup> *Ibid.*

<sup>19</sup> *Ibid.*

in England failed to recognize the damage caused by the pandemic and did not take the necessary public health measures and precautions to save countless English lives.

It was difficult to find available nurses in England during this period, as they were both in high demand and simultaneously falling ill because of their continuous exposure to the disease.<sup>20</sup> For the first time, nurses were called upon more than doctors because most people did not need a diagnosis or a cure for the influenza - they simply needed care.<sup>21</sup> Unfortunately, most civilians either could not afford a health practitioner of any kind or they were unable to get one because of the high demand. Many people who fell ill relied on friends and family for care. It was not uncommon for entire households to contract the virus and oftentimes helpful neighbours would step in to care for them as well.<sup>22</sup> The lack of professional health care in 1918 was so prevalent that, in Manchester, 63% of the 208 fatal cases of Spanish Influenza had absolutely no contact with any healthcare professionals.<sup>23</sup> People in Manchester and all over England had to rely on other sources of care when they fell ill, and many nurses were overworked because of the long, strenuous hours that they worked during the outbreak.

Many areas in England also had significantly higher influenza rates than average which left all fields of work understaffed and underperforming. Most industries faced mass absenteeism and scrambled to continue functioning. The London Police force, for example, saw 1400 policemen fall ill at once during the crisis.<sup>24</sup> Schools often had many children missing from classes because of the virus, with an average of 70% of school children present on any given day during the pandemic; in some areas where the influenza was particularly bad, school attendance dropped to as low as 30%.<sup>25</sup> The particularly harsh effect that the influenza had on school children and young adults (who were usually healthiest when it came to other influenzas) may have been a result of the wartime restrictions on food.<sup>26</sup> Children were directly affected as nutrition was necessary for growth and young adults who did not go to war were still likely to work strenuously in factories every day.<sup>27</sup> Both of these age groups were likely not getting the nutrition required by their immune system to fight the Spanish Flu.

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<sup>20</sup> Armstrong, "When the Flu Killed Millions," 34.

<sup>21</sup> *Ibid.*

<sup>22</sup> Tanner, "The Spanish Lady Comes to London," 67.

<sup>23</sup> *Ibid.*, 68.

<sup>24</sup> *Ibid.*, 55.

<sup>25</sup> *Ibid.*, 54.

<sup>26</sup> *Ibid.*, 53.

<sup>27</sup> Tanner, "The Spanish Lady Comes to London," 56.

There was no obvious link between socio-economic class and the Spanish Influenza, which left many doctors and government officials perplexed at the time. The Registrar General in London attempted to find a correlation between wealth and vulnerability to the influenza during the first wave in 1918. They correlated the number of domestic servants a household had in the 1911 census with the influenza death rates but the results were inconclusive. He found that two of the wealthiest boroughs in London - Kensington and Hampstead - had fairly low death rates, while Chelsea (which was also a wealthy borough) had influenza death rates second only to one other.<sup>28</sup> Many historians and scientists alike have now concluded that the flu was “socially neutral” because “the pandemic introduced a new virus that few, if any, had the immunity to fight.”<sup>29</sup> The lack of social boundaries that the pandemic faced contributed to the severity of the virus. It meant that the Spanish Influenza affected everyone which contributed to the panic as people became aware that no one could prevent themselves from being infected.

Europe as a whole did not have a unified response to the influenza crisis, and each nation reacted differently. Unlike England, many other European countries and British colonies attempted to contain the Spanish Influenza. In France, quarantine measures were enacted, public places like schools, cabarets, churches, and theatres were closed, and most public areas were fumigated daily. They also enlisted extra staff to clear rubbish and garbage from the street in an attempt to keep the country clean and safe. France also took extra care to promptly clear any potential health hazards.<sup>30</sup> Australia responded to the Spanish Influenza by making masks mandatory in all heavily crowded areas such as public transportation, busy streets, and churches.<sup>31</sup> The United States of America attempted to counter the influenza by placing a limit on the number of people who were allowed to attend an event or gathering. They also banned bargain and clearance sales and placed a strict price control on influenza medication to ensure that families could access the remedies that they needed.<sup>32</sup> France, Australia, and the United States all clearly attempted to take necessary action to limit the spread of the Spanish Flu. Public health measures were used to an extent that had never

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<sup>28</sup> Tanner, “The Spanish Lady Comes to London,” 57.

<sup>29</sup> Svenn-Erik Mamelund, “A Socially Neutral Disease? Individual Social Class, Household Wealth and Mortality from Spanish Influenza in Two Socially Contrasting Parishes in Kristiania 1918–19,” *Social Science & Medicine* 62, no. 4 (2006): 924.

<sup>30</sup> Tanner, “The Spanish Lady Comes to London,” 57-58.

<sup>31</sup> *Ibid.*, 58.

<sup>32</sup> *Ibid.*

been seen before to help reduce the spread of infection. Places that took measures to protect their civilians tended to have lower influenza-related death rates than those that did not.

St. Louis, Missouri was one of the most successful places in the world at controlling the virus and limiting the death toll.<sup>33</sup> They utilized extreme public health measures to contain the Spanish Influenza. The Health Commissioner of St. Louis, Dr Max C. Starkloff, vowed to take a series of steps to “keep the epidemic out of the city, if possible, and if that failed, to use every means to keep it down to the lowest number of cases.”<sup>34</sup> Starkloff went on to define the disease by asking the Board of Alderman of St. Louis for an ordinance to make the influenza a reportable disease (to ensure that the proper data could be collected), and took extreme preventative measures to stop the spread.<sup>35</sup> On 6 October 1918, the number of cases rapidly increased in the district which led to the creation of the Influenza Advisory Committee on 7 October. The committee included members from the Chamber of Commerce, public schools, hospitals, and a variety of health services and volunteer organizations.<sup>36</sup> Starkloff made sure to include a wide variety of people on the committee so that it represented everyone in the city. The Advisory Committee closed all public areas, including schools, entertainment venues, and churches, to limit citizen’s exposure to the virus. At this time businesses remained open.<sup>37</sup> Educating all citizens about the Spanish Influenza was prioritized through a special publication called the “monthly ‘*Health Department Bulletin*.’”<sup>38</sup> St. Louis regularly broadcasted necessary information about the virus because they knew that education was a key part of prevention. The press was utilized to keep citizens of St. Louis optimistic and was asked to constantly remind them that although death rates were significant, they were still much lower than other cities.<sup>39</sup> Starkloff enlisted the police force to enforce the strict ban on public gatherings and to ensure that patients who contracted the virus quarantined for at least two weeks.<sup>40</sup> He also offered free vaccinations made from “pneumonia and influenza cultures” – although this tactic was virtually ineffective against the Spanish Flu.<sup>41</sup> Though not all of Starkloff’s tactics were effective, his dedication to limiting the spread of the Spanish Influenza was necessary

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<sup>33</sup> Kalnins, “The Spanish Influenza of 1918 in St. Louis, Missouri,” 479.

<sup>34</sup> *Ibid.*

<sup>35</sup> *Ibid.*

<sup>36</sup> *Ibid.*, 480.

<sup>37</sup> *Ibid.*

<sup>38</sup> *Ibid.*

<sup>39</sup> *Ibid.*, 481.

<sup>40</sup> *Ibid.*, 480.

<sup>41</sup> *Ibid.*

in keeping cases low. His attempted vaccinations showed his willingness to go to the extremes to keep death rates low.

The control measures that were enacted on 7 October appeared to halt the increase in cases by 13 October, but the effects did not last. During the first eight weeks of the influenza, the death rate in St. Louis was 179.4 per 100 000.<sup>42</sup> In Boston, which was a very similar city in many ways, the death rate was 554.4 per 100 000.<sup>43</sup> Obviously, the extreme public health measures that the Advisory Committee instituted helped to keep the death rate lower than it was in other cities. On 9 November 1918, Dr Max Starkloff and the Advisory Committee forced businesses to close for four days to prevent the viral spread of the influenza.<sup>44</sup> The federal government of the United States objected to this as the war was still ongoing, and resources and workers alike could not be spared. Businesses in St. Louis reopened on 13 November, and schools opened again the following day. Only two weeks later, the second wave of the Spanish Influenza hit the city and the ban on gatherings, as well as the closure of schools, was reinstated. It was very important to Dr Starkloff to keep the schools closed until after the winter holidays because school-aged children made up thirty to forty percent of new cases during the second wave of the flu.<sup>45</sup> Unfortunately, the temporary lift on public health measures still had a massive effect on the population. The death rate in St. Louis increased to 386.8 per 100 000 by the end of 1918. Even though the measures were mostly re-enacted after the next influenza wave it still was not enough to keep the final toll down. The death rate for the September 1918 to April 1919 population was approximately 521.2 per 100 000.<sup>46</sup>

St. Louis also made use of nurses to help reduce infant mortality during the Spanish Influenza. This marked the first time that nursing services were used as a part of a public health plan, where they play a crucial role still today.<sup>47</sup> Between 21 October and 15 December 1918, nurses made 14 359 visits in St. Louis alone, and they visited each patient received an average of five times.<sup>48</sup> There were more nurses than doctors, which allowed for more patients to receive treatment and care. The level of care that patients received also helped to keep some alive, and all

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<sup>42</sup> Kalnins, "The Spanish Influenza of 1918 in St. Louis, Missouri," 480.

<sup>43</sup> *Ibid.*, 481.

<sup>44</sup> *Ibid.*

<sup>45</sup> *Ibid.*, 479.

<sup>46</sup> *Ibid.*, 482.

<sup>47</sup> *Ibid.*, 481.

<sup>48</sup> *Ibid.*

of them comfortable. It set a precedent for the great importance that nurses have in healthcare systems today.

The Spanish Influenza resulted in an enormous loss of lives across the globe, but it also brought about a revolution for public health everywhere. England failed to recognize the necessary change that the pandemic demanded, and they suffered the consequences of their poor response. Meanwhile, St. Louis' dedicated action against the pandemic and innovative methods helped to keep their death rate remarkably low in comparison to other similar cities. The influenza created and refined public health sectors in nearly every country and prepared the world to better handle every pandemic that followed.



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**Appendix A**



Munch, Edvard, *Self-Portrait with the Spanish Flu*, oil on canvas, 1919 (National Museum of Norway), <http://samling.nasjonalmuseet.no/en/object/NG.M.01867#>.  
Self-portrait while in recovery from the Spanish Influenza.